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ABSTRACT

The "Illegitimacy Bonus," part of 1996 welfare reform legislation, awarded $100 million in each of five years to the five states with the greatest reduction in the nonmarital birth ratio. Three "states" – Alabama, Michigan, and Washington DC – won bonuses four or more times each, claiming nearly 60% of award monies. However, in none of these three states was the decline in the nonmarital birth ratio linked to increases in proportions married, and only in Michigan was it linked to declines in nonmarital (relative to marital) fertility within demographic groups, behavioral changes that the Illegitimacy Bonus was presumably intended to reward. Shifts in the racial composition of births accounted for 1/3 (Michigan), 2/3 (DC) or all (Alabama) of the decline in the nonmarital birth ratio. The non-marital birth ratio fell most in DC, averaging 1.5 percentage points per year over the award period. However, the number of black children born in DC fell by nearly one half from 1991 to 2001. Changes in population composition alone – primarily a decline in the number of black women aged 15 to 34 – can account for the entire decline in the nonmarital birth ratio in DC between 1990 and 2000.

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Introduction

Several provisions of the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) were intended, directly or indirectly, to reduce non-marital fertility among the populations at highest risk of welfare use. One of these provisions, the Out-of-Wedlock Birth Reduction Bonus ("The Illegitimacy Bonus"), has awarded $100 million in each of five fiscal years to the five states that achieved the largest reduction in out-of-wedlock births, provided abortions did not increase. There are few analyses of the impact of The Illegitimacy Bonus[1], and there are no *ex post* analyses of its effects on fertility or abortion. Inattention to the behavioral effects of the Illegitimacy Bonus is understandable since it is a small component of an enormously complex piece of legislation that was implemented nationally over a short period (1996 to 1997). Credible estimation of its impact on fertility and family behaviors would be difficult if not impossible (Moffitt 2003).[2] Therefore, in this paper we pursue the more modest goal of answering the question of the title: What did the Illegitimacy Bonus Reward?

Twenty-three Illegitimacy Bonuses of approximately $20 to $25 million were awarded over the five years 1999 to 2003. Table 1 summarizes the awards. Three "states" (Alabama, Michigan and Washington DC) were awarded 13 of the 23 Illegitimacy Bonuses, accounting for nearly 60 percent of the bonus funds awarded. Alabama and Michigan were each awarded the Illegitimacy Bonus four times, and DC won it five times; no other state received it more than twice.

The Illegitimacy Bonus was, presumably, intended to reduce the proportion of unmarried births either by reducing the chance that an unmarried woman has a birth or by increasing the proportion of women who are married. However, the non-marital birth ratio (nonmarital births/total births), which is

[1] Donovan 1999, Dye and Presser 1999, Lewin and Associates 2003 are the main exceptions

[2] There is more hope of estimating the effects of provisions such as the Family Cap that were implemented in different states at widely differing times through administrative "waivers" to AFDC (which PRWORA replaced with TANF, the Transitional Assistance for Needy Families program). See Joyce et al. (2004) for an example.

the measure used to award states, can fall for a variety of reasons such as an increase in the birth rate for married women, or because of changes in population composition (i.e., a decline in the relative size of populations with high non-marital birth ratios). For example, black women tend to have lower marriage rates and higher non-marital fertility rates than white women. A decrease in the share of the population that is black in a state, all else the same, will tend to reduce the non-marital birth ratio. We believe, however, that the demographic explanation most consistent with the legislation having had its intended behavioral effect would be a decline within specific populations in the proportion of births that is non-marital brought about either by an increase in marriage or by a decrease in the birth rate of unmarried women relative to that of married women in those populations. In contrast, the Illegitimacy Bonus was not, presumably, intended to reward states for changes in the racial composition of their populations.

In this paper, we examine changes in the non-marital birth ratio between 1994 and 2000 or 2001 for the three states that have won the award most often: Alabama, Michigan and Washington DC. Clearly, these multiple winners were not rewarded for minor or random fluctuations. By focusing on these multiple winners, we avoid awards that may have resulted from random fluctuations and provide a best case for testing whether the actual awards seem consistent with the spirit and intention of the legislation. We describe the demographic changes responsible for the decline in the non-marital birth ratio and assess whether these demographic changes likely resulted from behavioral changes that were the goals of the legislation. Because the law also stipulated that the abortion/birth ratio could not rise after 1995, we examine (in a more limited way) changes in abortion to investigate whether or not non-marital fertility appeared to be controlled through increased use of abortion among groups at highest risk of welfare use.

Fertility-Related Provisions of PRWORA

PRWORA potentially affected non-marital fertility in a number of ways. First, it reduced the lifetime value of welfare benefits by imposing work requirements and limiting federal assistance to adults to five years (half the states adopted shorter time limits). PRWORA also allowed great flexibility in the use of federal and state welfare funds, which permitted states to use TANF or state Maintenance of Effort (MOE) funds to finance programs and services to prevent pregnancy or encourage marriage. Examples of such programs include abstinence education, two-parent family polices, individual responsibility agreements, child support and paternity establishment enforcement, and education and training on statutory rape prevention (Lewin and Associates, 2003). The provision that appeared most directly to address recipients' fertility incentives was The Family Cap, which permits states to reduce or deny benefits to women who have additional births while on welfare. The Family Cap has been widely studied, and appears to have been ineffectual (see, for example, Joyce, et al. 2004). Welfare reform re-authorization legislation currently pending in the US House and Senate has also emphasized marriage promotion, and considers the reduction of non-marital fertility an explicit goal (Parke 2003). The Senate and House bills include $1.5 billion for "healthy marriage" promotion.

Illegitimacy Bonuses were awarded to states with the largest proportionate decreases in the out-of-wedlock birth ratio: the ratio of non-marital to total births to state residents, with a requirement that the abortion "rate" (the *ratio* of abortions to live births in the state) not increase after 1995. For calculation of the abortion "rate," HHS regulations required states that were potentially eligible for the bonus to report either the number of abortions performed in the state, or the number performed in the state on in-state residents.

Previous Literature

In this section we summarize reports, media coverage, congressional testimony, scholarly journal articles, and position papers by concerned organizations. Few attempted to analyze the effects of the Illegitimacy Bonus on fertility and abortion behavior. The literature can be grouped broadly into three categories: 1) moral and ethical objections; 2) criticisms of data or measures used to determine bonus winners; and 3) descriptions of state reactions to the bonus (i.e., the effect of the bonus on state and sub-state policies, programs and services, including uses of award monies). A fourth strand of the literature, which we take up in the final section of this paper, describes the future of the bonus and related provisions in TANF reauthorization proposals.

Goals, Ethics, Morals

Section 401(a)(3) of the Social Security Act states that the purpose of the Illegitimacy Bonus is to "prevent and reduce the incidence of out-of-wedlock pregnancies and establish annual numerical goals for preventing and reducing the incidence of these pregnancies…" and to "…encourage the formation and maintenance of two-parent families." To achieve these goals, Congress sought a bonus to "provide greater impetus to State efforts in this area and encourage state creativity in developing effective solutions" (USDHHS 1999). The underlying logic of the bonus is simple: if states succeed in reducing non-marital births, poverty and welfare dependency should decrease, and child and family well-being should improve. Opinion pieces leading up to welfare reform demonstrate the wide range of positions and beliefs regarding non-marital childbearing. For example, Charles Murray, who for many years has criticized public assistance programs for encouraging nonmarital childbearing and family dissolution, wrote in an influential OP-ED piece in *Wall St. Journal* that, "… illegitimacy is the single

worst social problem of our time – more important than crime, drugs, poverty, illiteracy, welfare, or homelessness because it drives everything else" (Murray 1993).[3]

Putting aside the question of whether illegitimacy causes the ill effects with which is it associated, the proposal to fight illegitimacy through welfare reform would be strengthened by the existence of a causal relationship between welfare and non-marital births. Some leading social scientists have contributed to the long debate over the evidence on this issue (see for example, Murray 1984; Ellwood 1988; Moffitt 1992 and 1998; McLanahan and Sandefur 1994; Ellwood and Jencks 2002). The most recent scientific consensus seems to be that, although there is some evidence of an effect of the availability of welfare benefits on non-marital fertility, the evidence is mixed and the range of estimates is very large (Moffitt 1998 and 2003). Recent studies that explicitly examine PRWORA find no evidence of a link between welfare policy and fertility (Joyce et al. 2003).

Representative of strong objections to the fertility and marriage provisions in welfare reform is an editorial in *The Journal of Blacks in Higher Education* (1996) that argued that supporters of marriage promotion in welfare reform ignored the falling rates of non-marital fertility among blacks in the early 1990s.[4] The use of welfare reform to fight illegitimacy and family decline despite a decline in non-marital fertility rates among blacks indicated to the author that "[t]he driving force behind the nation's Draconian welfare reform has been a widespread belief that throughout the current welfare system hard working and tax-paying white folks have been underwriting an explosion of illegitimate births among blacks."

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[3] Murray's op-ed piece was entered into the Congressional Record as part of Sen. Dole's testimony (p. S15314 of the Congressional Record: 103rd congress) and again in Sen. Murkowski's testimony (CR - Senate - November 01, 1993- Page: S14718).

[4]The editorial acknowledges, however, that he non-marital birth *ratio* increased in the early 1990s.

Others opposed the use of welfare policy to influence sexual and family behaviors of American society more broadly (Boonstra 2002). Specifically, several critics (Dye and Presser 1999; Maryland Department of Human Resources 1998) objected to the potential use of TANF funds to target behavior among the non-TANF population (or those not at high risk of TANF use). A related charge was that changes in behaviors of non-poor residents might disqualify a state that successfully reduced non-marital fertility among its TANF or low-income populations. Provisions that created incentives for states to develop broadly-targeted fertility and marriage initiatives were among the major objections of Democrats to welfare reform (Haskins 2001).

Objections to Measures or Data

The bonus provided $100 million annually to up to five states or territories that achieved the largest percent reduction in the non-marital birth ratio without experiencing an increase in the abortion/birth ratio. Donovan (1999), Dye and Presser (1999) and others criticized these measures because they: 1) are based on an inappropriate period, 2) can be influenced by demographic shifts unrelated to the program's behavioral goals, and 3) are based on a flawed indicator of non-marital fertility control.

Dyer and Presser (1999) argued that the measurement periods were inappropriate for measuring behavioral changes, particularly for the first two award years, because changes between 1994 and 1997 would reflect the impact of programs or policies implemented before welfare reform. Donovan (1999) expected any effects of the 1996 law on non-marital births not to appear for at least a year.

Dye and Presser (1999) further predicted that the bonus would at times reward demographic fluctuations unrelated to declines in non-marital fertility among women at risk of entering poverty or using welfare. Consistent with this prediction, Ron Haskins noted "the District of Columbia has won the

bonus twice, but the most significant factor contributing to this success appears to be that the non-marital birth rate has been declining faster among blacks than any other group, and Washington, D.C., has the highest percentage of blacks nationwide" (quoted by Anderson 2001). As we shall see, Haskins is partly correct. DC was not awarded a "blackness" bonus, but rather a "whiteness" bonus; the non-marital birth ratio fell in D.C. not so much because the black non-marital birth rate was falling nationally and DC has a large African American population, but primarily because of a decline in the black female population aged 15 to 34, and secondarily because of the general fertility decline in black birth rates, both marital and non-marital. (As we shall see, non-marital birth rates did not decline relative to marital birth rates.) We describe these changes in more detail below.

Dye and Presser (1999) demonstrated a number of potential flaws in the measures by analyzing data from 1991 to 1995 to simulate bonus winners for 1996 (based on data for 1991 through 1994) and 1997 (based on data 1992 through 1995). Actual bonuses were based on births from 1994 to 2001. Their simulations showed that Utah and Virginia would have been awarded Illegitimacy Bonuses based on the decline in their non-marital birth ratios over 1991-1994; and California, Georgia, Massachusetts, Montana and North Carolina would have won based on data from 1992-1995.

These simulations indicated to Dye and Presser (1999) that the non-marital birth ratio did not accurately gauge control of non-marital fertility. For example, they found that Georgia would have been awarded the bonus despite an increase in the absolute number of non-marital births in the state; the illegitimacy ratio showed a decline because marital births increased more than non-marital births. Dye and Presser (1999) also predicted that variation in data quality and collection methods across states would complicate and obscure comparisons of rates across states.

In addition to showing a decrease in the non-marital birth ratio, to qualify for the bonus, states needed to show a decline in the ratio of abortions to live births to state residents occurring in the state. Initially, the legislation required states to submit data on births and abortions occurring in the state. During the call for comments, however, critics noted that counts of abortions performed in a state could be affected by "abortion migrants" from neighboring states, flows of which could be affected greatly by policies of neighboring states. It was then recommended that the rate be defined by abortions to state residents occurring within and outside the state. This was deemed impossible because the federal government could not mandate states to document abortions performed on women from other states. In the final legislation, the preferred abortion measure was defined as the ratio of abortions performed on state residents to total live births in the state, although states were allowed to report by state of occurrence if those were the only data available.[5, 6]

The Department of Health and Human Services used abortion data that the states routinely submit to the federal government to determine the bonus winners. Dye and Presser (1999) questioned the quality of that data, and noted that the AGI surveys of abortion providers generally record more abortions and are considered more complete and accurate, and that completeness and accuracy vary across states. Others pointed to disincentives the bonus created for states to increase completeness of abortion reporting or availability, or improve the quality of abortion services (Boonstra 2000; Dye and Presser 1999).

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[5] Comments were submitted suggesting that this flexibility would lead to data shortcomings, and that data collection should be more standardized.

[6] From PRWORWA Final Rules: One commenter objected to the definition of "number of out-of-wedlock births" and "number of total births" because she interpreted the definitions to mean the number of births occurring in the State. The commenter recommended that the number of births be measured according to the state of residence rather than the state of occurrence. *HHS Responded*: We agree that the number of out-of-wedlock and total births will be measured according to state of residence rather than state of occurrence, and the definitions proposed in the NPRM for out-of-wedlock and total births already reflect this. Therefore, no changes were needed in the final rule. We retained the two pertinent definitions proposed in the NPRM as follows: "Number of out-of-wedlock births for the State" means the final number of births occurring outside of marriage to residents of the State, as reported in NCHS vital statistics data. "Number of total births for the State" means the final total number of live births to residents of the State, as reported in NCHS vital statistics data.

Finally, welfare reform may have raised the abortion rate among at-risk single women (contrary to the law's intention), but such increases may have been offset by decreases in the abortion rates among low-risk women residing in the same state (e.g., from increased condom use among college students or fewer abortions to married women). For example, Utah would have been one of the 1996 bonus winners in Dye and Presser's simulations, yet 40% of the abortions obtained in Utah in 1993-1994 were to married women, a far higher proportion than in any other state. Therefore, the potential for abortions to married women to account for the decline in abortions may be greater in Utah than in other states.

Evidence of State Efforts to Win the Bonus

Even if measures are flawed and motivations and goals questionable, one might judge the Illegitimacy Bonus at least a partial success if it stimulated the growth of beneficial activities or programs. Two studies provide information on this issue.

Surveys of officials of state health and social service agencies found that 34 states (including DC) reported taking steps to reduce out-of-wedlock births in response to PRWORA initiatives, though only a few indicated new efforts in response to the Illegitimacy Bonus (Boonstra 2000). The Lewin Group (2003, p. 33) concluded:

> Based on our discussions with officials within the nine study states, we found that the potential availability of the bonus had little influence on nonmarital birth prevention policies within the states, even among bonus winners. We also found no clear relationship between bonus receipt and amount of effort expended by states, and we found that among the three states receiving the bonus (i.e., Alabama, Arizona and Massachusetts), only Alabama has directed bonus funds toward additional nonmarital birth prevention activities. Finally, we found that most states were critical of the outcome measure used to award the bonus.

The Lewin Group (2003, p. 33) also reported that "among the three bonus states [in their sample], two (Alabama and Arizona) reported making no special effort to win the bonus (prior to first receipt), and each of the six non-bonus states reported that they made no sustained efforts to win the bonus…and the potential receipt of bonus money had little effect on program design, intensity, or implementation of efforts to reduce out-of-wedlock childbearing."

However, some state officials indicated that the Illegitimacy Bonus stimulated a discussion of how to use TANF dollars, even if the state did not make an explicit decision to compete for the bonus. Moreover, after winning the bonus for the first time, several state officials reported feeling motivated to win again (particularly in Alabama). In Michigan, which qualified for the Illegitimacy Bonus for four consecutive years (1999 to 2002), the Engler administration proposed that a substantial portion of the first bonus award of $20 million be dedicated to adolescent pregnancy prevention. A bipartisan committee recommended that $15 million of the $20 million bonus be directed to the Teen Pregnancy Prevention Project (TP3), which targeted communities with high teen birth rates. Smaller portions of the second and third rounds of bonus winnings were also used to support the TP3 project as well as a Paternity Establishment Project (Costello, 2003).

In short, although The Lewin Group (2003) report concluded that bonus winning bore little, if any, relation to a state's efforts to reduce non-marital births (p. 42), and only sometimes were bonus winnings directed toward non-marital pregnancy prevention, some states were motivated to compete for the bonus, which may have resulted in longer-term increases in funding (and effort) for non-marital birth reduction programs.

Data on Births, Abortions and Populations[7]

To document what the Illegitimacy Bonus has rewarded, we use three data sources. Our initial estimates examine information on births from national natality files (NCHS), which record every birth in the United States and are available to the public. These are the data upon which the Illegitimacy Bonuses were based. For our purposes, there is one major measurement issue of concern with these data, which relates to marital status recording on births certificates in Michigan. In 1994, Michigan implemented a revised imputation of marital status that resulted in a discrete jump in the proportion non-marital.[8]

Identification of the demographic changes responsible for the decline in the non-marital ratio requires additional information on population sizes and marital status of the population. Ideally, we would examine the role of changes in population composition, marital status (proportions married), and marital and non-marital fertility rates in the decline in the non-marital birth ratio (proportion unmarried) over the award period, 1994 to 2000 (for Alabama and Michigan) or 2001 (for DC). Since we need to calculate populations, fertility rates and marriage proportions for small sub-state populations, we must rely on the 1990 and 2000 Censuses. Although Censuses permit more thorough demographic analyses than are possible with the birth records alone, their use limits analyses to changes between 1990 and 2000, rather than 1994 to 2001.

Two other limitations require additional explanation. First, race classifications in the 2000 Census are not strictly comparable with those in the 1990 Census. Rather than require respondents to indicate a primary race from a choice of four, as in the past, the 2000 Census permitted up to five different racial

[7] This section draws heavily from Joyce et al. 2003.
[8] Personal communication with Cathy Humphries, Michigan Department of Health. Prior to 1993 the birth certificate had two marital items: 1) one parent (assumed unmarried) and 2) both parents. A third item was added for 1993: 3) 1 parent but an acknowledgement of paternity was received. Thus, beginning in 1994, a birth was

identifications from an expanded pool of five classifications. The National Center for Health Statistics (NCHS, 2003) has released a bridged-race version of the Census 2000 Modified Race Data Summary File, where multiple-race categories are mapped to the four single-race counts of prior Censuses. Since this file contains demographic information on race, age and sex only, we use it only for descriptive purposes and to check the robustness of our results that do not account for the changing race items. Because our main analyses require education and marital status, we draw our population figures from the Five-Percent Public Use Microdata (PUMS) files, which contain individual, state-level records for a five percent sample of the 1990 or 2000 Census. We assume that the first race specified in the 2000 Census corresponds to the primary race that would have been selected for the 1990 Census race item. For analyses that did not require education and marital status information, we found that using either the bridged-race file or Five-Percent PUMS for 2000 produced similar results.

A second limitation regards matching birth records with missing information on education to PUMS files in which missing education data have been imputed by the Census Bureau. We report results that reflect our imputation of missing education in birth records based on the distribution of reported schooling categories by state, year, age, race, and marital status. However, we obtained similar results whether we used (our) imputed education, dropped births with unknown education from the sample, or used allocation flags to reset education to unknown in the Census data.

Abortion data were collected by the authors.[9] We canvassed state health departments between October 2001 and September 2002 in order to obtain induced termination of pregnancy files (ITOP) without personal identifiers. Of the three multiple bonus winning states, only Alabama provided detailed characteristics required for our analyses, the most important being age, race, marital status, and

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considered delivered by an unmarried women if items (1) or (3) were checked, resulting in reclassification of some "paternity established" births from married to unmarried.

[9] The National Bureau of Economic Research and the Alan Guttmacher Institute collaborated to collect the data, which are abortion certificates, similar to birth certificates, from state vital statistics departments

completed schooling of the mother, and the month and year of termination (see Joyce et al. 2003 for details).

The number of abortions reported by state health departments tends to be lower than estimates based on surveys of abortion providers conducted by the Alan Guttmacher Institute. The State Health Department count for Alabama in 1996 was 8.7 percent lower than the count of abortions in the AGI provider survey (Joyce et al. 2004, Table 1). Henshaw (2000) offers various explanations for the differences in total abortions between AGI and state health departments. Most explanations pertain to staff turnover or inexperience as well as provider fear of harassment. However, without additional information, it is not possible to determine whether the discrepancy in the number of abortions between AGI and the state health departments is related to characteristics of the women, and how this might vary over time.

Missing data in abortion records from Alabama is a minor problem, with the exception of education of mother. The proportion missing for age, race, marital status and parity (number of previous births) are, respectively, 1.3%, 1.1%, 1.5% and 0.9%. About 12% of records are missing educational status of mother. In our analyses of abortion and birth data, we treat missing education as a separate category. Some of our regressions with data from birth records include controls for race/Hispanic identification (non-Hispanic white, non-Hispanic black, Hispanic and other/unknown) and education (categories for: less than HS graduate, HS graduate but no college, any college, unknown).

Results

Figure 1 shows the non-marital birth ratio in the three multiple bonus-winning states (AL, MI and DC). Although the bonuses were awarded on the basis of changes in two-year averages from 1994

to 2001, we show data for the years 1990 to 2001 because we will later introduce population data from the 1990 and 2000 Censuses.

The first point to notice in Figure 1 is that, over the period 1994 to 2000, Alabama and Michigan experienced only slight declines in the proportion of births that is non-marital. In fact, Alabama's ratio is slightly higher in 2000 (and 2001) than in 1994, despite winning bonuses in four out of five years based on data from 1994 to 2000. The ratio is more than four percentage points higher in 2000 than in 1990. In Michigan, there is more evidence of a downward trend, though the trend appears to end with an upturn in 2000 and 2001.[10] In contrast, Washington DC experienced a pronounced decline in the non-marital birth ratio over 1994 to 2001, particularly after 1994. Moreover, although the proportion non-marital increased somewhat in DC from 1990 to 1994, by 1996 the ratio in DC was well below the 1990 ratio.

Table 2 summarizes these trends with a simple regression of the proportion non-marital on a time trend from 1994 to 2000 for Alabama and Michigan, and from 1994 to 2001 for DC. These are the data years upon which their Illegitimacy Bonuses were based (Table 1), four for Alabama and Michigan, and five for DC. The first row of Table 2 indicates that, in Alabama, the proportion non-marital fell by a miniscule 0.061 percentage points per year (i.e., the ratio fell 0.00061 per year) on average from 1994 to 2000. In Michigan, the decline averaged about one-quarter percentage point per year over that period. DC averaged a remarkable 1.4 percentage point per year decline in the proportion non-marital from 1994-2001, or more than 23 times the rate of decline in Alabama.

However, in DC and Alabama, the decline in the non-marital ratio in the award period is largely explained by a shift in the racial composition of births. As shown in row 2 of Table 2,

[10] As noted, the jump in percent single in Michigan in 1994 results from a change the way Michigan imputed marital status from information recorded on birth certificates.

adjusting for race of mother (black, white, Hispanic, or other race), the proportion nonmarital *increased* by about 0.0264 percentage points per year in Alabama; in Michigan it declined by 0.18 percentage points per year, and in DC, the proportion single decreased by nearly one half percentage point per year (0.463 percentage points). Thus, about 2/3 of the substantial decline in the non-marital ratio in DC is explained by the changing racial composition of births; in Alabama the entire decline is explained by this demographic shift, and in Michigan about a third of the decline is due to changes in racial composition of births.

These changes may be seen in Figures 2 through 4, which show the number of births by race and state. In Alabama (Figure 2), the number of births fell modestly among blacks and whites over the decade, but increased slightly after 1995, and appears to have fallen again in 2001 (a pro-cyclical pattern). Hispanic births rose steadily, though from a tiny base. In DC (Figure 3) the number of black births began a precipitous decline in 1991, and fell by nearly half over the decade: births to black women fell from a peak of 9,112 in 1991 to 4,808 in 2001, a decline of 47%. The number of births to whites and Hispanics in DC increased slightly from 1996 onward. But well over half the decline in births to black mothers occurred before 1996. The figure for Michigan (Figure 4) resembles that for Alabama in that births to blacks and whites fell modestly in percentage terms (though by a larger absolute number in Michigan), and births to Hispanics rose modestly.

Since the proportion non-marital is highest among black women in all three states, a decline in the percent of births to black women, all else the same, lowers the proportion non-marital. Figures 5 through 7 show the proportion of births to black, white and Hispanic women respectively in the three states. The proportion black declines noticeably in Alabama and Michigan, and markedly in DC. Only in DC did the proportion of white births increase

substantially. The proportion Hispanic rose steadily in the three states, though again from a small base percentage.

Figures 8 through 10 show the proportion of births that is non-marital by race of mother in the three states. These figures correspond to the "within race" regressions summarized in the second row of Table 2. In Alabama, the percent single increased substantially among whites and Hispanics to (roughly) 20% each, and declined slightly among blacks after 1995. Figure 9 for DC indicates (aside from what appears to be an anomaly for whites in 1990) little overall trend over the decade in the percent non-marital for any group, though there is an inverse U-shape pattern for all groups. Still, by 2001, nearly 80% of black births and over 50% of Hispanic births are non-marital. Nonetheless, especially compared to the enormous decline in black births overall in DC in this period, the trend in the percent non-marital within racial/ethnic groups is slight.

The dominant feature of the figure for Michigan (Figure 10) is the break in the series after 1993 caused by the change in marital status recording. After the series break, there is very little trend in the proportion non-marital among whites and Hispanics, and a steady decline in percent non-marital from 1994 to 1999 among blacks. The percent non-marital among blacks turns up again in 2000 and 2001.

The figures so far suggest that the decline in the percent of births to black women, especially in Alabama and DC, is a more important contributor to the decline in the non-marital birth ratio than is the reduction in non-marital proportions within race. Logically, the decline in the number of births to black women could have two sources: fewer births per woman or fewer women. We next examine, therefore, whether the decline in the non-marital birth ratio that resulted from changes in the number of births to specific groups (especially the decline in the

number of births to black mothers) resulted from population changes (e.g., a decline in the black population) or changes in birth rates (i.e., births per woman). We later consider the role of marital status. For population data at the state level, especially for small subpopulations and those that are undergoing rapid change, we must rely on the decennial censuses; therefore, we examine changes between 1990 and 2000 in the Census.

We begin our exploration of the role of population composition with a description of the major population changes in the three states.[11] Figures 11 through 13 show the population of women aged 15 to 54 by race for the three bonus winning states. In Alabama (Figure 11) and Michigan (Figure 13), the black, white and Hispanic populations all grew steadily. In DC (Figure 12), the Hispanic and "other race" populations grew, but the black female population fell substantially at these ages (about 15%, from 124,173 to 105,164), while the white population fell slightly. Clearly, the changes in the female black population in DC alone would tend to reduce the non-marital birth ratio.

Figures 14 through 16 show female populations by race and age. Figure 15 for DC reveals a striking change: the largest decline in the 15 to 54 year old age group was at ages 15 to 34, the peak ages of fertility. The number of black 35 to 54 year olds increased slightly, and the number under 35 decreased substantially (by nearly thirty percent, from 70,764 to about 50,595). This change is clearly not the result solely of population aging because, for example, the number of 25 to 34 year olds in 2000 (25,929) is about a fifth smaller than the number of 15 to 24 year olds in 1990 (32,033).

[11] Population data used for the figures are from the NCHS bridged-race files that adjust for changes in race questions between the 1990 and 2000 Census. Because cross-walk files do not include education and marital status breaks, we used the 5% PUMS for our standardizations (presented below). In analyses that did not require education or marital breaks, the 5% PUMS and cross-walk files yielded very similar results.

In Alabama (Figure 14), the white population aged 15 to 34 declined, and the black population aged 15 to 24 increased, while the black population aged 25 to 34 increased slightly, as did the Hispanic population. In Michigan, the white population aged 15 to 35 declined, the black population held about steady at those ages, and the Hispanic population grew. Thus, in Michigan and Alabama, population shifts alone would have increased non-marital birth ratios. We now turn to a more detailed demographic standardization to determine the influence of these demographic changes on the non-marital ratios.

Demographic Standardizations

As noted, births records can yield only limited insights regarding the sources of change in the non-marital birth ratio.[12] In particular, the analyses described in Table 2 do not help differentiate between changes in births that come about from changes in population composition versus those that come about from changes in martial status or in marital or non-marital birth rates. Therefore, we conduct two sets of standardizations. We first use the five-percent PUMS for 1990 and 2000 and a demographic standardization to estimate the contributions of compositional changes and changes in demographic-group-specific birth rates and non-marital birth ratios to changes in the state's non-marital birth ratio over the 1990s. In our second set of standardizations we focus on the role of marital status and estimate the contributions of changes in demographic-group-specific proportions married and their relative rates of non-marital and marital fertility.

The overall non-marital birth ratio in a state in a given year may be written as a weighted average of the non-marital ratios of subpopulations, where the weights are the shares of births contributed by those populations. Further, the number of births contributed by a population is

determined by the size of the population and the birth rate (births per woman). For this analysis, we use the following definitions:

- NMR_t = non-marital birth ratio for a state in year t.
- POP_{it} = population of group i in year t
- B_{it} = number of births to the group i in year t, and
- B_t = the total number of births in the state in year t.

We define "group" variously as race, race-by-age, race-by-education, or race-by-age-by-education.

Then, we may write

$$NMR_t = \Sigma_i (B_{it}/B_t) * NMR_{i\,t}$$

where $NMR_{i\,t}$ are the group specific non-marital birth ratios, t = 1990 or 2000 and i indexes the group.

Multiply and divide by the group population size, and rearrange to get

$$NMR_t = (1/B_t) * \Sigma_i POP_{i\,t} * (B_{it}/POP_{i\,t}) * NMR_{i\,t}$$

Thus, we can examine the impact on the states NMR from:

1. changes in the group-specific NMRs;
2. changes in group-specific fertility rates (B_{it}/POP_{it});
3. and changes in population sizes; i.e., the sizes of the different groups.

To compute the impact from changes in NMRs, we hold births, the B_{it} $(=POP_{it}*B_{it}/POP_{it})$, constant at their 1990 values, but allow the NMR_{it} to change to their 2000 level (i.e. standardize on 1990 births). To compute the impact from changes in fertility, we hold POP_{it} and NMR_{it} constant at their 1990 values, but allow the B_{it}/POP_{it} to change to 2000 values. To compute the impact of changes in population sizes, we hold B_{it}/POP_{it} and NMR_{it} constant at 1990 values but allow POP_{it} to change between 1990 and 2000. Population counts are taken from the 5-Percent PUMS.

[12] In a nutshell, exclusive reliance on birth data is the crux of the problem with the Illegitimacy Bonus.

Table 3 shows the results of this standardization used to examine components of change from 1990 to 2000 in the non-marital birth ratios for Alabama and DC, and in modified form, for Michigan. Due to the break in the series of non-marital ratios for Michigan caused by the change in procedure for imputing marital status from information on births certificates, we substituted 1994 values of the group-specific non-marital ratios for the 1990 values, but used population data for 1990 and 2000. Thus, the figures for Michigan should be regarded as approximations.

The first panel of the table shows the overall decline in the non-marital fertility ratio between 1990 and 2000. Each subsequent panel shows the results of carrying out the standardization described on the previous page for different definitions of demographic group, increasing in detail from race, to race-by-education, race-by-age, or race-by-education-by-age.

As can be seen from the first panel of the table, despite the slight decrease in Alabama's non-marital birth ratio between 1994 and 2000, the proportion non-marital rose by nearly one-half percentage point per year for the decade as a whole. For DC, the average annual decline in the proportion non-marital is about one-third as large over the decade 1990 to 2000 as between 1994 and 2001, but is still nearly half a percentage point per year. For Michigan the decline is similar to that estimated from the birth data for 1994 to 2000, about one quarter percentage point per year.

The last (fifth) panel of the table presents the results of the standardization exercise where we have defined demographic "group" in the most disaggregated way (race/Hispanic by age by education). This is our preferred estimate since we believe it is appropriate to adjust for changes in the age, race and educational attainment of the population that are largely (if not entirely) exogenous to welfare reform. However, as noted, we also present results for less detailed disaggregations. The first row of the fifth panel shows what the annual change in the non-marital birth ratio would have been had only the race-specific non-marital birth ratios changed between 1990 and 2000 (i.e., birth rates and populations within

each race group are held constant at the mean of their values in 1990 and 2000). For example, the number 0.27 in the first row of the last panel for DC indicates that the non-marital birth ratio would have *risen* by 0.27 percentage points per year (or nearly 3 percentage points over the decade) based on the increase in the "within-group" non-marital birth ratios alone!

In Michigan, on balance the ratio also increased within group (with the only exception being when group is defined on the basis of race alone, the first row of second panel). Thus, on average in these bonus winning states, the proportion of births that is non-marital increased with demographic groups defined by race, race and age or race, age and education. In other words, the non-marital birth ratios did not fall because non-marital birth ratios fell within demographic groups. This further suggests that the propensity of a given woman to have a non-marital birth did not decline in the big bonus winning states between 1990 and 2000.

The number of births could change within groups either because the group size changed (population changed) or because birth rates changed for each group. To gauge the importance of each of these factors to the overall change in the non-marital birth ratio, we allow only fertility rates (births per woman) to change for each group, but we hold the group-specific populations and non-marital ratios constant at their 1990 levels. These results are presented in the second row of each panel. This standardization shows that the change in group-specific birth rates reduced the overall non-marital birth ratio by about 0.3 percentage points per year in DC (middle row of each panel), or by nearly three percentage points over the decade. In Michigan, the decline in birth rates accounts for more than the entire decline; in Michigan falling group-specific birth rates alone would have reduced the non-marital birth ratio by nearly five percentage points over the decade.

What if population sizes were allowed to change, but the group-specific birth rates and non-marital ratios were held constant at their 1990 levels? The third row of each panel shows the results of

this exercise. Focusing on the final panel, in DC, the non-marital ratio would have fallen 0.57 per year, or 5.7 percentage points over the decade. Thus, in DC, changes in the race-by-age-by-education distribution of the population alone can (more than) account for the decline in the overall non-marital ratio in DC over the 1990s. (We reach the same conclusions if we examine figures in the other panels of the table where we carry out the exercise using more aggregated demographic groups.). In Michigan, population changes alone would have increased the non-marital ratio between one and one and one-half percentage points over the decade.

So far we have neglected the role of marital status. As some have argued, we might expect welfare reform to affect the non-marital birth ratio in two ways. First, it would increase the proportion of women who are married. Second, it would decrease the non-marital fertility rate (births per unmarried women) at least relative to the marital fertility rate.

To understand better the role of changes in marital status and martial-status-specific fertility rates, we conducted an additional standardization. Note again that the non-marital birth ratio is the ratio of non-martial births to total births. Marital births (MB) are the product of the married population (MPOP) and the married birth rate (MB/MPOP). And the married population is simply the product of the population (POP) and the proportion married (MPCT). So we may write for births to married women in demographic group *i* and year *t*:

$$MB_{it} = POP_{it} * MPCT_{it} * (MB_{it} / MPOP_{it})$$

and, for births to unmarried women:

$$UB_{it} = POP_{it} * (1 - MPCT_{it}) * (UB_{it} / UPOP_{it})$$

Thus, we can calculate the contributions of changes in (group-specific) population sizes, proportions married, and marital and non-marital fertility rates to the change in the number of married

and unmarried births. The following table shows the means of the variables used to carry out the standardization.

Means of Variable Used in the Standardization Summarized in Table 4

State	Female Population A 15-44 (millions) 1990	2000	Percent Married 1990	2000	Martial Birth Rate (per 1,000) 1990	2000	Nonmarital Birth Rate (per 1000) 1990	2000
AL	1.161	1.278	59.7	57.0	63.8	57.1	40.2	39.1
DC	0.199	0.185	31.8	31.3	65.5	52.4	56.0	36.1
MI*	2.698	2.854	55.7	54.1	59.7	58.8	40.1	34.5

*For Michigan, the non-marital and marital birth rates are estimated using 1994 births and 1990 populations.

Overall, the percent married and the marital birth rate declined in the three bonus-winning states. All else the same, each of these changes would have raised the non-marital birth ratio. In all three states, the non-marital birth rate fell, slightly in Alabama, and substantially in both MI and DC. However, only in MI was the decline in the non-marital rate much greater than the decline in the marital rate. In DC, the changes in the marital and non-marital birth rates were roughly equal (about 13 per thousand), though the decline in the non-marital rate was proportionately larger.

However, in order to judge better whether these changes were consistent with the kinds of behavioral changes the Illegitimacy Bonus was intended to reward, we would like to know if, *within demographic groups*, the proportion married increased or the non-marital fertility rate fell (relative to the marital fertility rate). In Table 4 we carry out this standardization for the most disaggregated groups (race by age by education), corresponding to the last panel in Table 3.[13]

For example, the first entry of the first row shows that, in Alabama, the non-marital birth ratio was 0.298 in 1990. Changes in population composition (race-by-age-by-education shares) alone increased the non-marital ratio by 0.003 over the decade; changes in marital status within groups raised

[13] Results for less disaggregated analyses are available from the authors. Appendix Table 1 shows a group-by-group version of the standardization for DC that demonstrates the contributions of each of the demographic changes (population, proportions married and marital and nonmarital birth rates for 16 age-race groups). The standardization was conducted using 48 race-age-education groups, but for ease of presentation we have summed across the education categories for each of the 16 age-race group. Similar tables are available for Michigan and Alabama.

the ratio an additional 0.033 (3.3 percentage points), and changes in marital and non-marital births rates within groups increased the non-marital ratio by another 0.7 percentage points. In DC, population composition changes alone decreased the non-marital ratio by 4.2 percentage points; group-specific proportions married and marital-specific birth rates raised the ratio by about 0.3 and 0.4 percentage points respectively. Finally, in Michigan, the entire decline in the non-marital ratio is explained by changes in the group-specific marital and non-marital fertility rates. On balance, population shifts and group-specific proportions married increased the non-marital ratio in Michigan.

In sum, in none of the bonus winning states did the non-marital birth ratio fall because of increases within demographic groups in the proportion married. And only in Michigan did the non-marital birth ratio fall because of a decline within demographic groups in the non-marital fertility rate relative to the marital fertility rate. Hence, only in Michigan did the Illegitimacy Bonus appear to award a behavioral change related to (relative) decreases in nonmarital fertility.

Abortion

A final question has to do with the role of abortion in controlling non-marital fertility in bonus-winning states. Due to data availability, most of our analysis is limited to Alabama. Figure 17 shows the ratio of abortions to births and the ratio of abortions to "pregnancies" (abortions plus births) for 1994 to 2000. Both series show a substantial decline over the period, as required by the Illegitimacy Bonus. We would like to be able to determine, however, if abortion might have been used to control non-marital fertility among women most likely to be affected by welfare reform. Since, historically, younger women and black women were more likely to use welfare than other women, we examine the trends in abortions and births by race and age. Due to small samples, we do not break out Hispanics from blacks and whites

(and we are unable to do so for abortions), nor do we present separate estimates for women of races other than black or white.

Figures 18 and 19 show abortions for single and married women, respectively, by race and age. These figures show a marked, steady decline in abortion among whites over the entire period. For blacks, there is a u-shaped pattern for single women under age 35, and for married women aged 25 to 34. Figures 20 and 21 show the corresponding figures for births. For white women, the number of births to single women rose substantially, so clearly the abortion/pregnancy ratio fell markedly for single white women in this period, suggesting an increased propensity to bring non-marital pregnancies to term among whites. Births to married white women fell, and births to black women generally followed the same u-shaped pattern as abortions, so the trend in the abortion to pregnancy ratios is not obvious from these figures. Births to single, black teenagers fell markedly, suggesting an increased propensity to terminate pregnancies among this group.

Figure 22 shows the abortion/pregnancy ratios by race and marital status. Again, the number of pregnancies is estimated as the sum of births and abortions. The proportion of pregnancies terminated (aborted) fell markedly among single white women, and fell somewhat among married white and black women. Initially, the abortion to pregnancy ratio fell among single black women but then increased after 1997. Finally, Figure 23 shows abortions/pregnancy by race and age for single women. Again, there is a marked decline for white single women at every age. Among black single women, the propensity to abort a pregnancy increased throughout the period for 25 to 34 year olds, and increased after 1997 for teens and 35 to 54 year olds.

We also quantified these trends in Alabama by simple regressions of the abortion/pregnancy ratio on a time trend, overall and for various groups; results are summarized in Table 5. As the figures suggested, the ratios fell markedly among whites and black married women. However, the

abortion/pregnancy ratio fell much less rapidly among single black women, and increased for some age groups. In short, there a hint in these numbers that groups of women likely to be affected by welfare reform may have increased their relative propensity to abort pregnancies over the period of welfare reform implementation.

Summary and Discussion

We have now presented sufficient information to answer the title question "What did the Illegitimacy Bonus Reward?" The answer differs for each of the three big bonus winners. In Alabama, the Illegitimacy Bonus rewarded a tiny decline in the non-marital birth ratio. However, the non-marital birth ratio did not decline (on average) within demographic groups defined by race, from 1994 to 2000; controlling for race, the non-marital birth ratio increased in Alabama. In general, Alabama was awarded the bonus because births to blacks fell, and, on average, blacks have high non-marital birth ratios. Within the white and Hispanic populations, the non-marital birth ratios rose substantially; within the black population, the non-marital birth ratio fell slightly.

Insights for Alabama from analyses that incorporate 1990 and 2000 Census data are more limited since Alabama experienced a substantial increase in the non-marital ratio from 1990 to 2000. From 1990 to 2000, within demographic groups, declining marriage, increased non-marital birth ratios, and increased relative non-marital fertility rates all served to raise the non-marital birth ratio in Alabama. The effects of these changes were only partially offset by declines in the overall fertility rates of demographic groups with relatively high non-martial birth ratios ("high-risk" groups).

In DC, over the period 1994 to 2001, the decline in the non-marital birth ratios within race/ethnicity groups did contribute to the overall decline (Table 2), though most of the decline (two-

thirds to 90%) was due to a shift in population composition and fertility (births per woman) away from demographic groups with relatively high non-marital birth ratios.

Analyses that incorporate Census data show that the decline in the non-marital birth ratio in DC between 1990 and 2000 was largely the result of changes population composition, and secondarily, the result of decreases in overall birth rates among "high-risk" demographic groups (groups with high non-marital birth ratios). In other words, the decline in the non-marital birth ratio in DC did *not* result either from increases within demographic groups in proportions married or from a decrease within demographic groups in non-marital fertility rates (relative to marital fertility rates). Changes in demographic composition (group population sizes) were more important than changes in birth rates. The relative decline of "high-risk" populations, especially the number of younger black women, is large enough to account for the entire decline in the non-marital birth ratio in DC from 1990 to 2000.

In Michigan, the most important factor in the decline in the non-marital birth ratio from 1994 to 2000 is the decline in birth rates among groups that traditionally had high non-marital birth ratios. Increases in non-marital birth ratios within demographic groups defined by race and age or race and education increased the non-marital birth ratio from 1994 to 2000.

Our analyses using Census data were necessarily more approximate for Michigan due to changes in marital status recording procedures in Michigan that took place between 1993 and 1994. Although population composition changes and declining proportions married within demographic groups raised the non-marital birth ratio, the effects of these changes were more than offset by declines within demographic groups in non-marital fertility rates (relative to marital fertility rates), and by the decline more generally in fertility of "high-risk" groups.

In sum, our results suggest that, despite a desire to reward states where a woman's risk of non-marital birth declined, the Illegitimacy Bonus appears to have rewarded a variety of demographic

changes. Of the three big bonus winners, Michigan appears the most "deserving" although even there the record was mixed. Decreases in marriage within demographic groups raised the non-marital birth ratio, but decreases within demographic groups in rates of non-marital fertility relative to marital fertility lowered the non-marital birth ratio. Washington DC appears to have been rewarded primarily for changes in the racial composition of its population. Within demographic groups, marriage declined and rates of nonmarital fertility increased (relative to marital fertility).

Although this is the first study to our knowledge to investigate the demographic explanations for the Illegitimacy Bonus, Dye and Presser's *ex ante* simulation anticipated some of our results. For example, Dye and Presser's simulation demonstrated that the Illegitimacy Bonus could be awarded in cases where the number of non-marital births increased (if the increase in the marital births is sufficiently larger).

The contributions of welfare reform, and the Illegitimacy Bonus in particular, to these demographic changes are questionable. For example, teen fertility rates, especially among blacks, began a downward trend in the early 1990s, several years before the implementation of welfare reform (see Kaestner, Korenman and O'Neill 2003; Colen et al. 2003). Because a high proportion of births to teens is non-marital, continuation of the decline in teen fertility after 1994 would, all else the same, reduce non-marital fertility ratios, even in the absence of an effect of welfare reform.

What, then, has been learned from our experience with the Illegitimacy Bonus, and for marriage promotion through welfare reform more generally? A natural place to begin to look for an answer is with TANF reauthorization. First, it is clear that the Illegitimacy Bonus will not be re-authorized in anything resembling its current form.[14] On May 16, 2002, the House passed H.R. 4737, which would eliminate the Illegitimacy Bonus and instead fund a "Healthy Marriage Promotion Grant" (Section

103), a Department of Health and Human Services program of grants for state efforts to encourage marriage (Parke, 2003). The Senate version, the Personal Responsibility and Individual Development for Everyone Act of 2003, which passed out of the Finance Committee Sept. 10, 2003, is similar. The legislation would allocate $500 million for demonstration and pilot programs that include rigorous evaluation of marriage promotion activities. In addition, $1 billion would be authorized for marriage promotion activities, despite the lack of evidence as to the effectiveness of such activities (Haskins, 2003).

The shift away from the Illegitimacy Bonus in reauthorization is a welcome development since, in our view, the evidence presented here indicates that that the measure used to determine bonus winners was influenced by demographic changes other than the targeted behaviors.

Despite the failure of the Illegitimacy Bonus, discouraging non-marital childbearing and promoting marriage remain prominent in the reauthorization debate. For example, in their congressional testimonies Robert Rector (2001), Ron Haskins (2001, 2002), and Isabel Sawhill (2002), all credited PRWORA with some limited success in achieving marital and fertility goals, though they acknowledge the absence of evidence for an effect of welfare reform on fertility and marriage.[15] In their view, the legislation brought greater national attention to problems associated with illegitimacy; it demonstrated that federal and state governments could devise policies to fight illegitimacy and promote marriage (or at least eliminate anti-family biases in existing programs); and it created opportunities for private groups and faith-based organizations to help strengthen families.

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[14] However, an additional round of Illegitimacy Bonuses is scheduled to be awarded under the TANF and Related Programs Continuation Act of 2004; we thank Sharon Parrott of the Center for Budget and Policy Priorities for bringing this to our attention.

[15] "Changes in such behaviors as divorce and out-of-wedlock childbearing are likely to respond only slowly to a shift in the policy environment and it would be premature to attribute all or even most of these changes to the 1996 law. But it would also be wrong, in my view, to say that it has not had an effect simply because evaluations of some of the specific provisions such as family caps or the illegitimacy bonus or abstinence education programs have not shown clear impacts (Sawhill 2002)."

Although there is little evidence for effects of specific provisions, the whole of welfare reform may have accomplished more than the sum of its parts.[16] This observation may explain the relatively broad interest in continuing to create incentives for marriage promotion within welfare reform.[17] For example, Charles Murray (2001) has argued "…that reducing illegitimacy must be restored to the central position it held during the deliberations that led to the passage of the 1996 welfare reform legislation." And even though some supporters argue that it is too early or too difficult to conclude that welfare reform (more broadly) deserves credit for family change[18], reauthorization bills provide considerable funding for marriage promotion, as noted. It is, therefore, unfortunate that there is so little evidence from previous welfare reform efforts to guide the formulation of marriage promotion policies. The provision in current reauthorization bills for significant funding of pilot programs and evaluation is, therefore, a welcome addition.[19] Given the failure of the Illegitimacy Bonus to hit its target, and given the lack of evidence as to the effectiveness of marriage promotion programs, it would seem prudent to delay broad funding of marriage promotion efforts, at least until evaluations of pilot programs can be completed.

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[16] "After several generations of unrelenting growth, all the measures of illegitimacy leveled off in the mid-1990s …and have remained stable for five years. In addition, the non-marital birth rate measure for blacks is actually declining, and recent data show that the percentage of children in two-parent families, an explicit goal of the 1996 reforms, is increasing. Finally, the teen birth rate has declined every year since 1991" (Haskins 2001).

[17] However, some critics have proposed that the Illegitimacy Bonus be replaced with a Child Poverty Reduction Bonus. For example, in September of 2001, Congresswoman Mink (D) of Hawaii proposed H.R. 3113, TANF Reauthorization Act in which the Illegitimacy Bonus would be replaced with "a $150,000,000 annual bonus to reward states that significantly reduce the amount and depth of child poverty. [Sec. 103]" The National Association of Social Workers also advocated shifting the goals of TANF to poverty reduction (2001) and has opposed government promotion of marriage (Brown 2000). Of course, a "poverty reduction bonus" shares some undesirable features with the Illegitimacy Bonus, particularly, that child poverty rates could fall or rise through no effort by the state. Especially perverse is the situation in which states are awarded poverty reduction bonuses when child poverty rates fall as the result of an improving regional economy, but similar states where child poverty rates rise due to a regional economic downturn receive no additional funds.

[18] "Given the evidence five years later, it would be a stretch to claim that these innovative policies on family formation have caused big changes in the mating or marriage behaviors of young, low-income Americans…. While these felicitous outcomes are likely due in part to welfare reform, caution is required until these trends continue and even intensify." (Haskins 2002)

[19] "The federal government's primary roles at this point should be to gather better data and encourage states to launch demonstration programs, as they did with welfare recipients in the decade before TANF…Following the precedent set by the many years of high quality experimentation with welfare-to-work programs, the marriage programs should be carefully evaluated to determine whether they produce their intended effects…If we follow this strategy, five years from now this Committee will have the advantage of good research information that will help

members decide whether these programs hold promise and should be continued" (Haskins 2003 Reauthorization Testimony).

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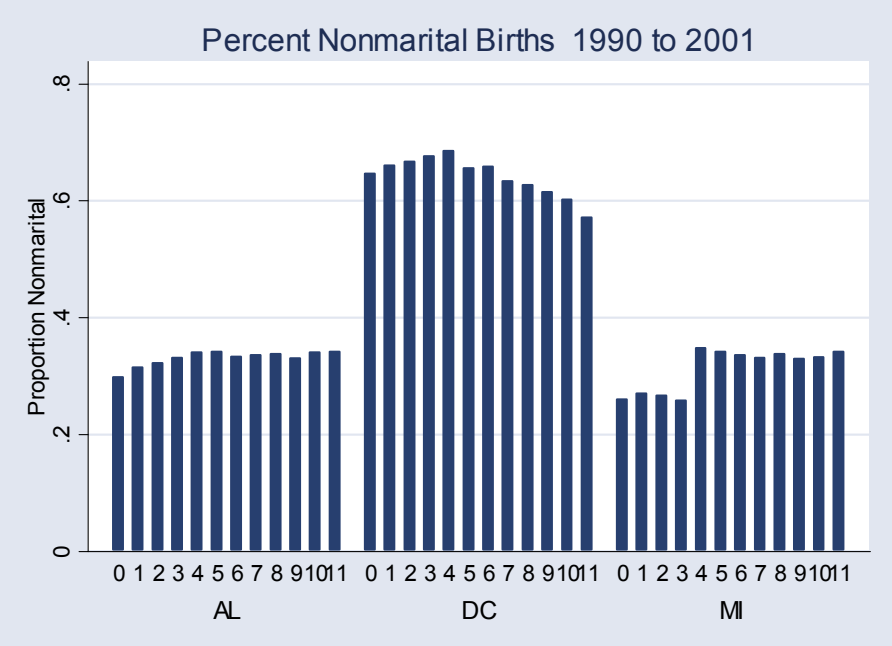
Figure 1



Note: Marital status recording changed in MI for 1994. See text.

Figure 2

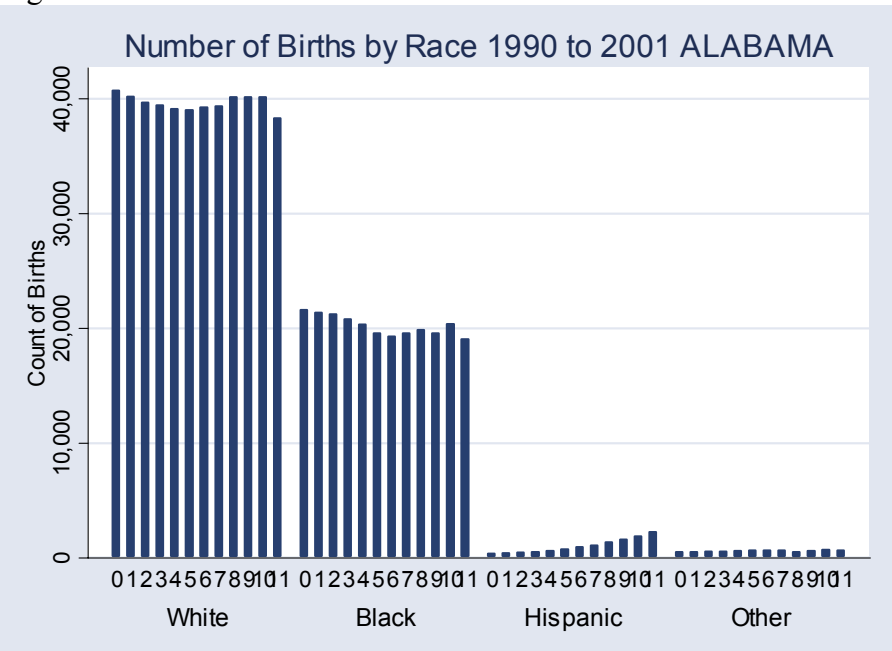
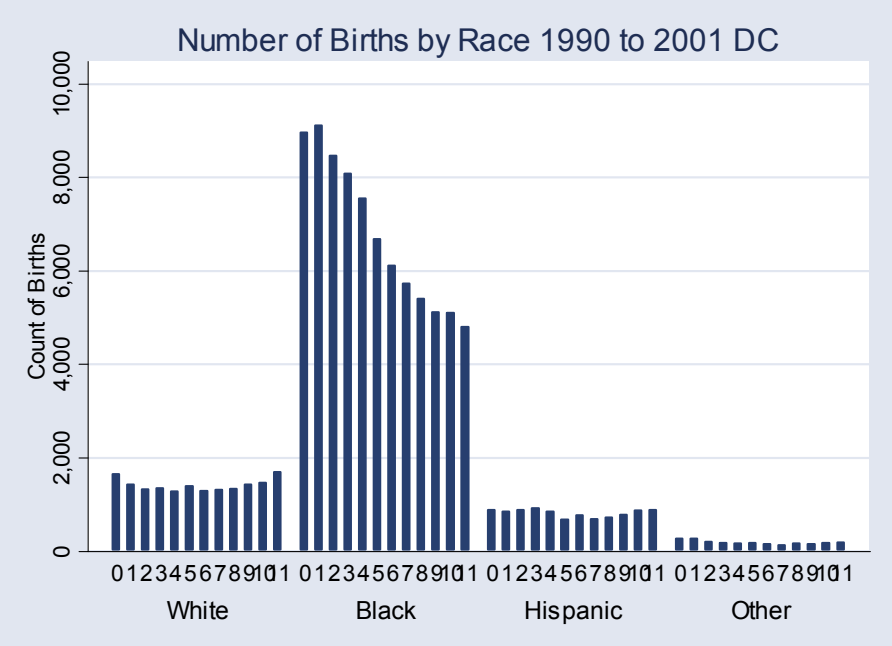


Figure 3



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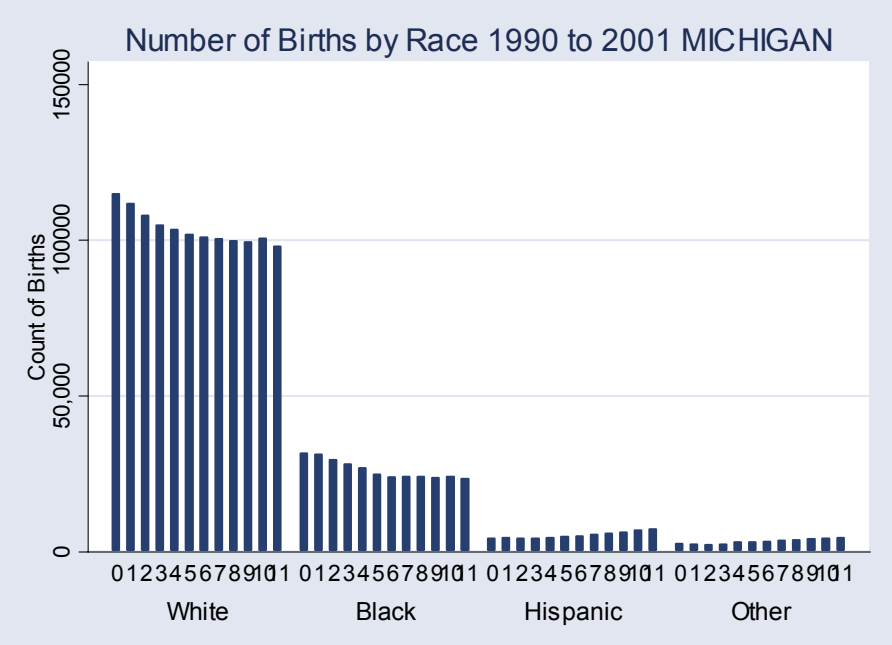

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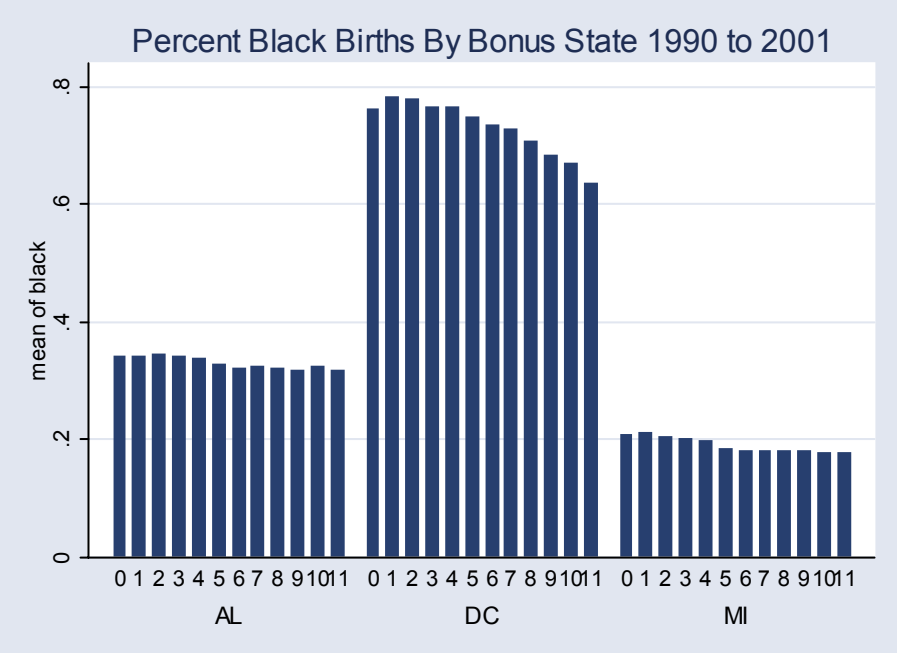

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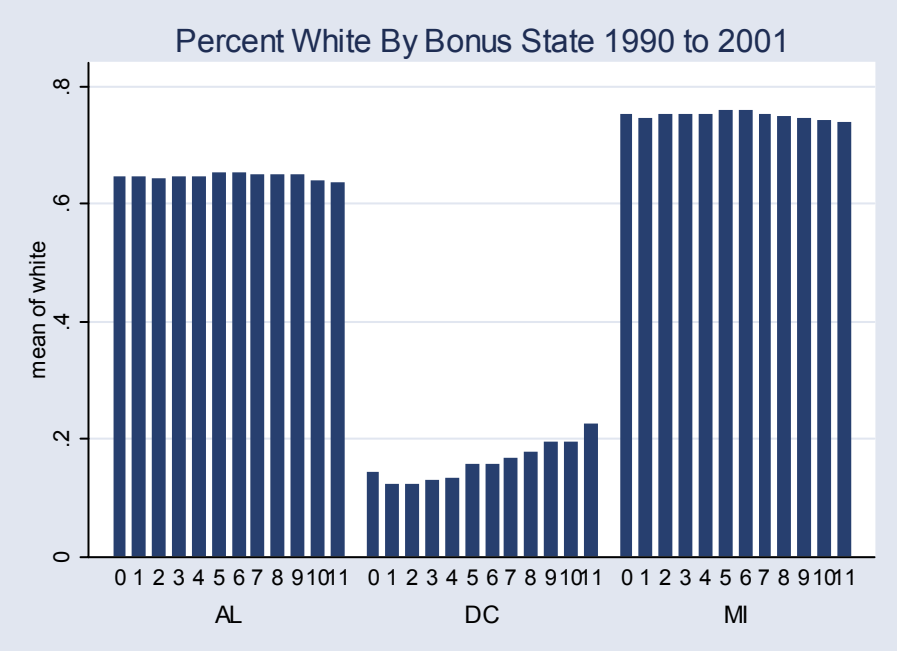

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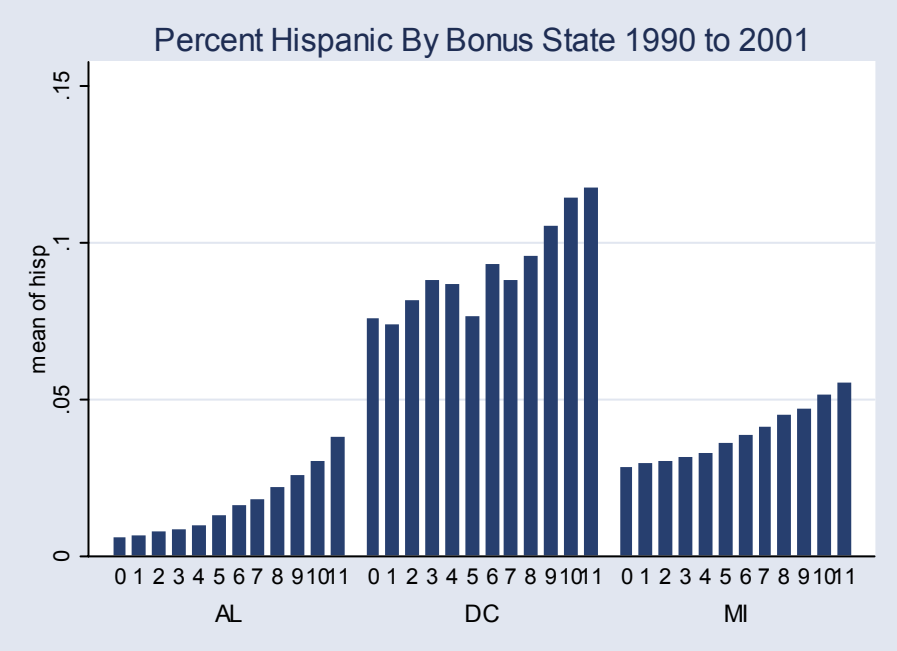

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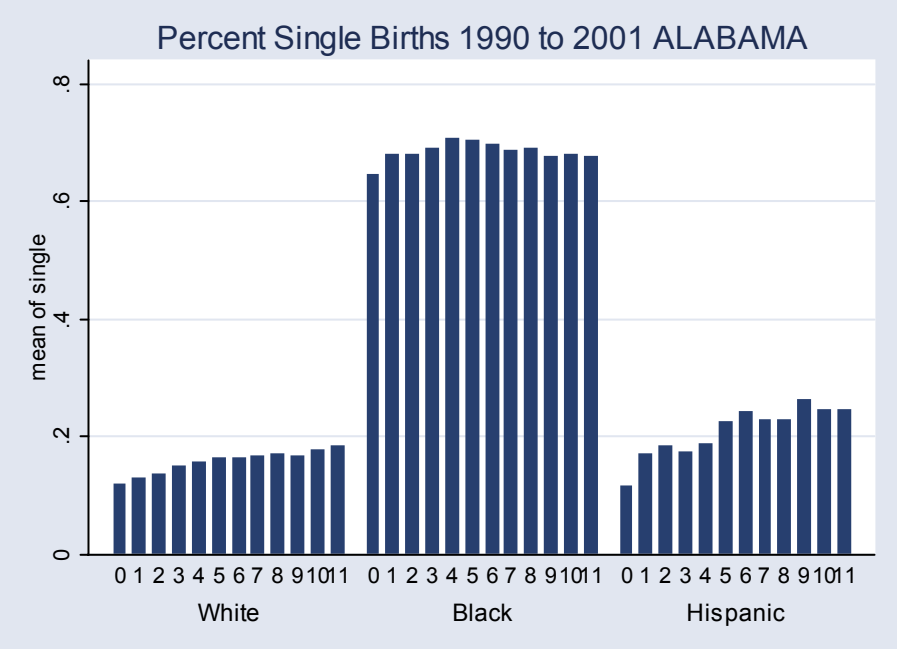

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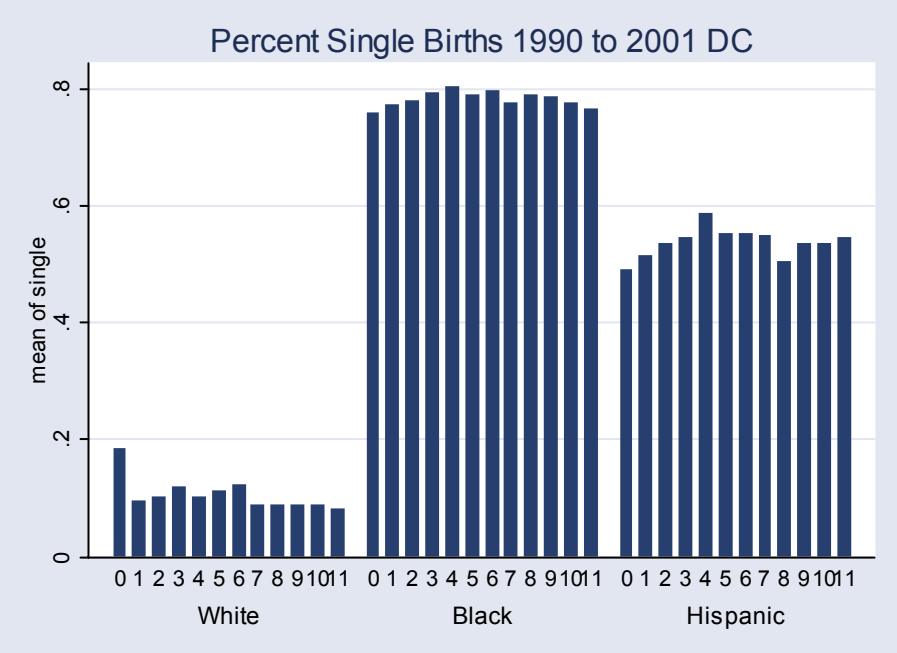

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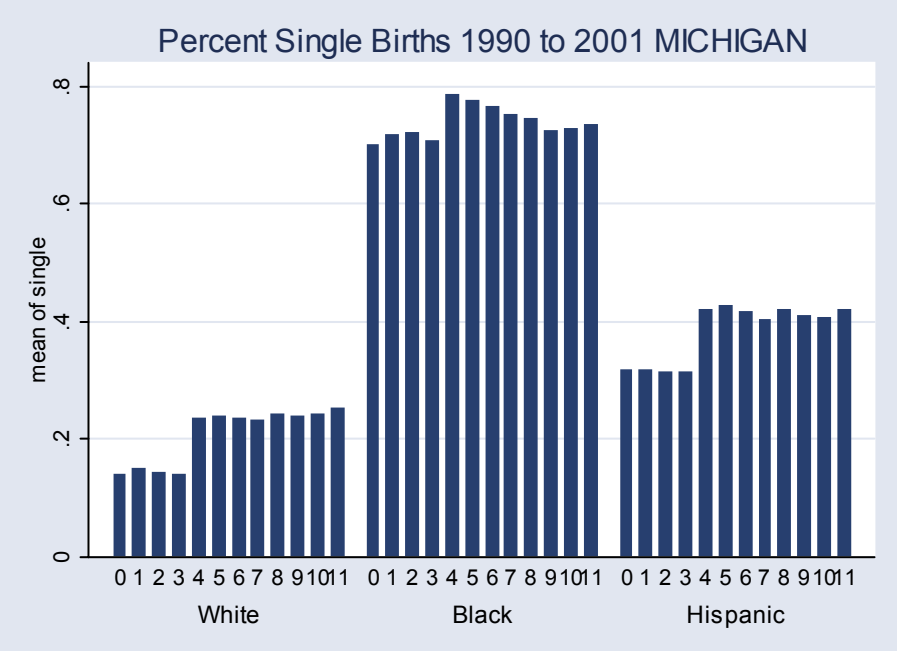
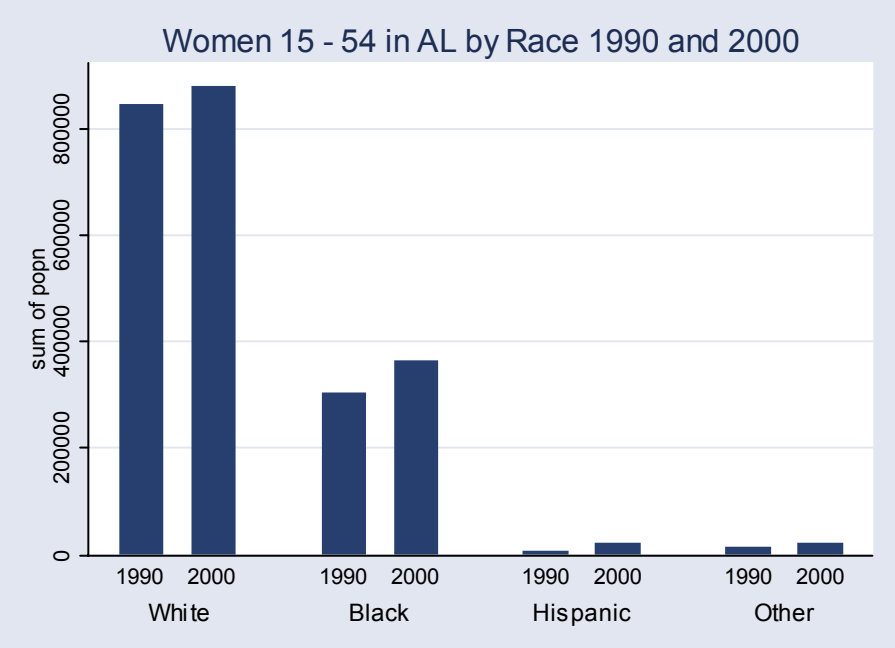


Note: Marital status recording changed in MI for 1994. See text.

Figure 11



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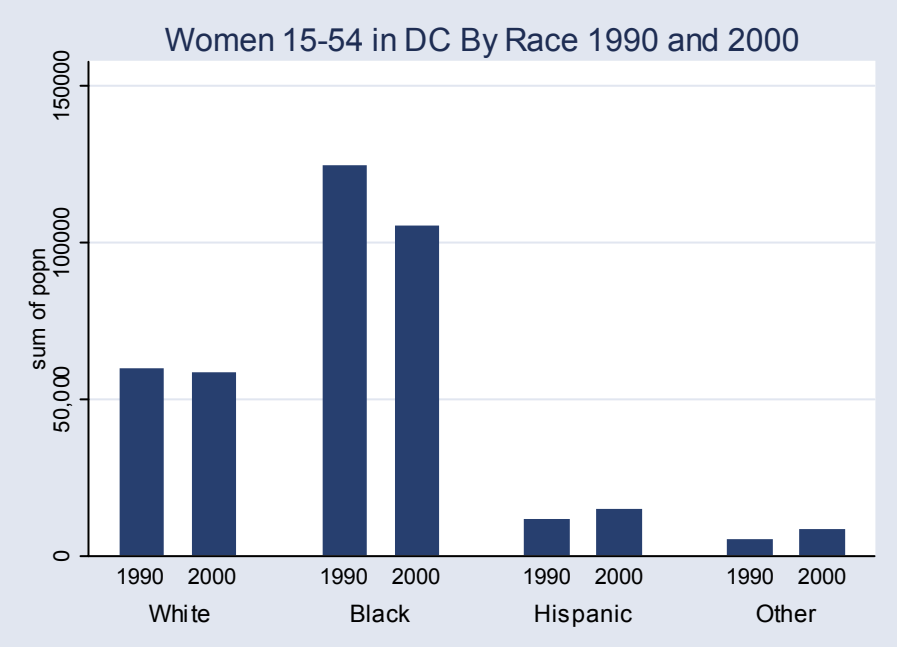

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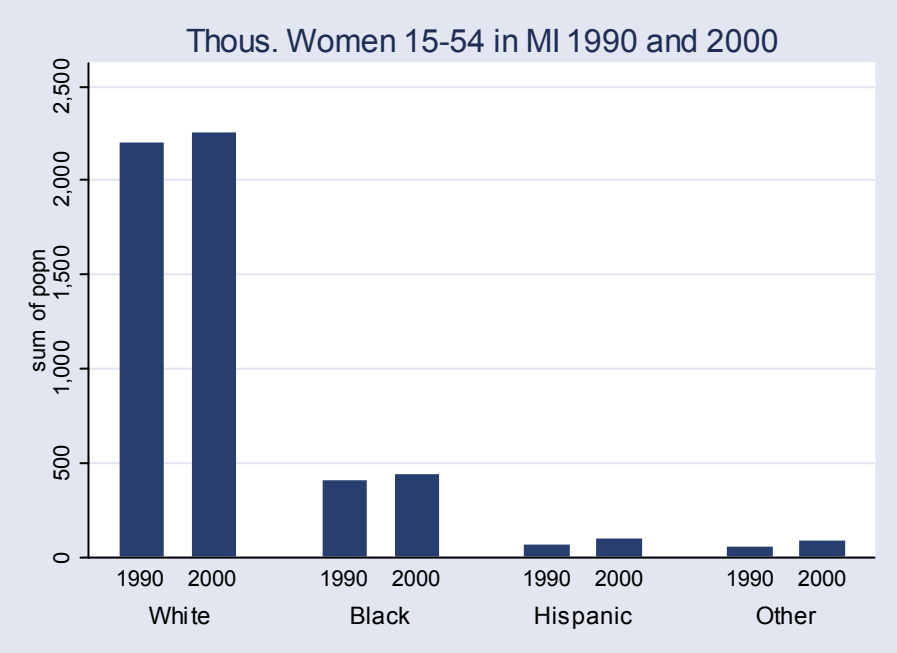

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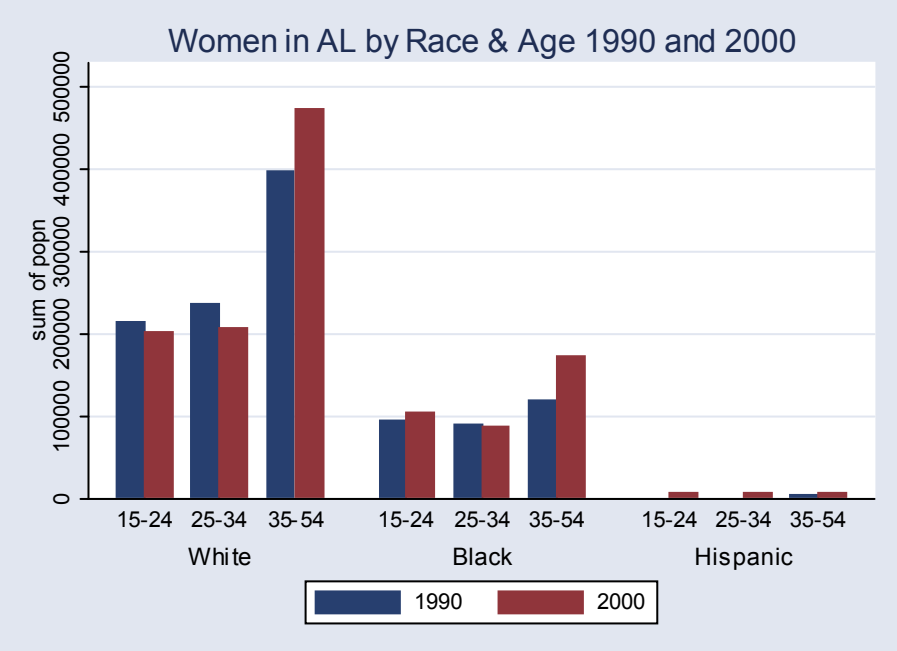

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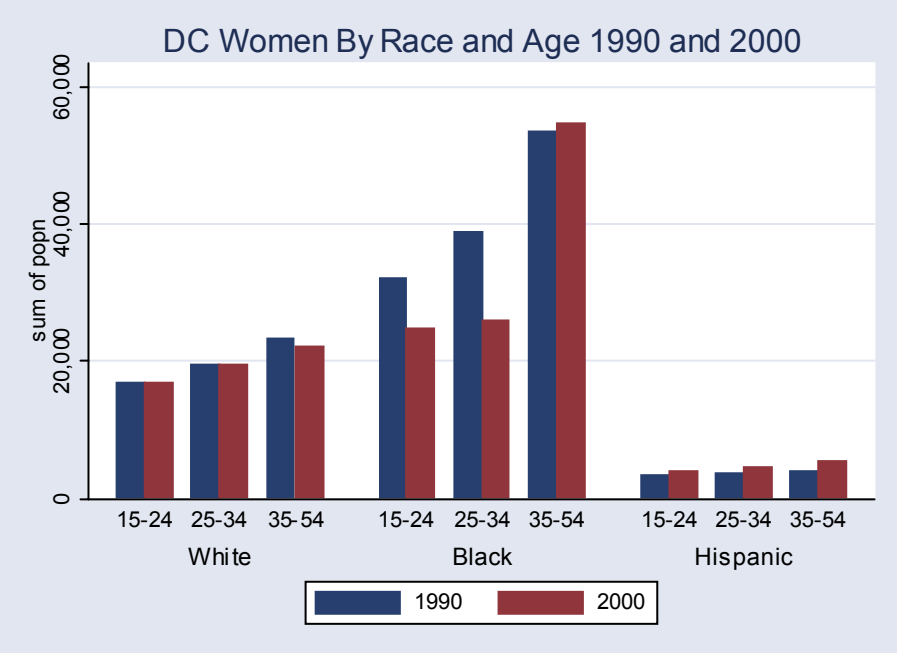

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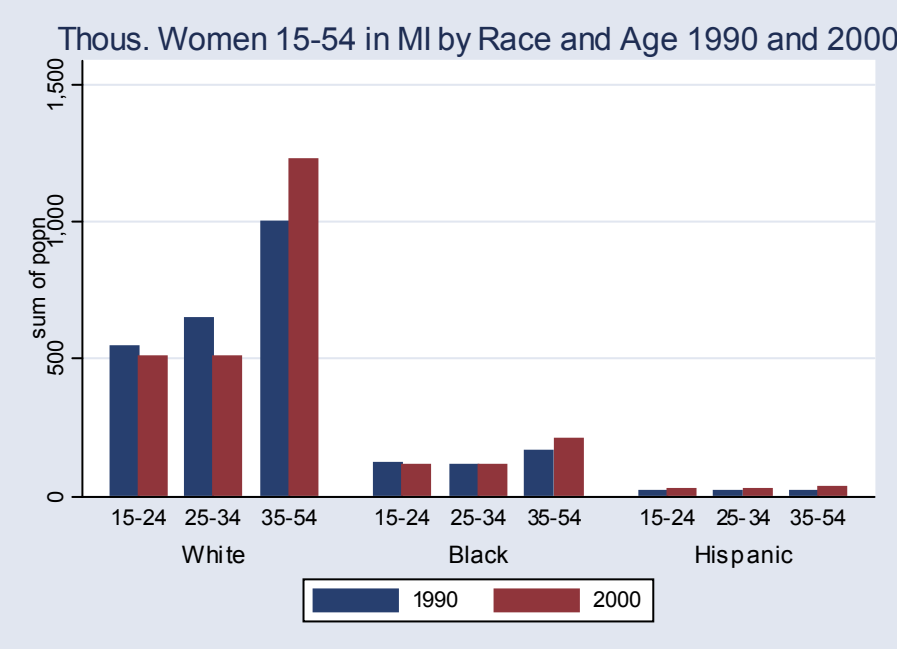

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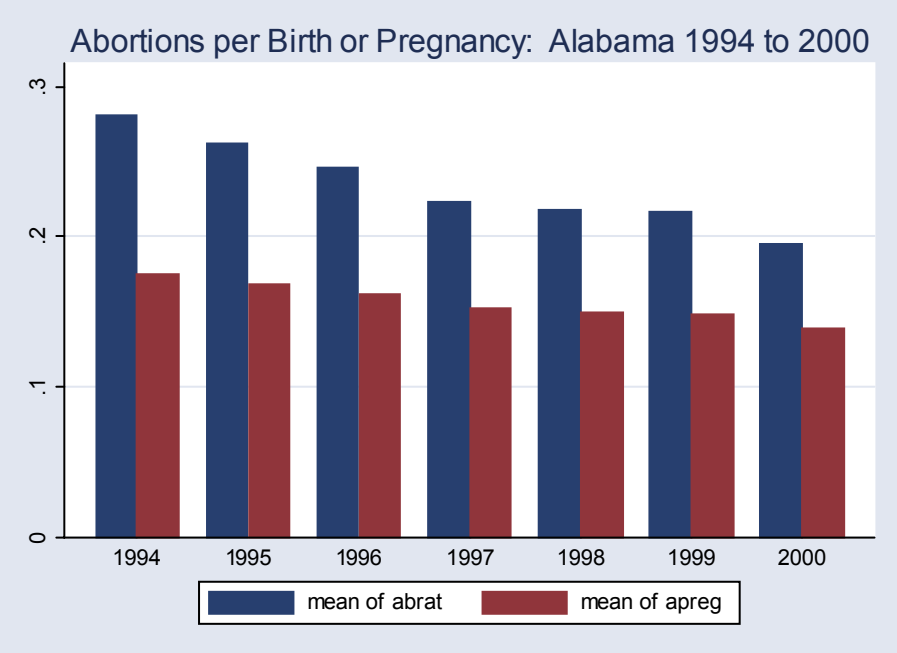
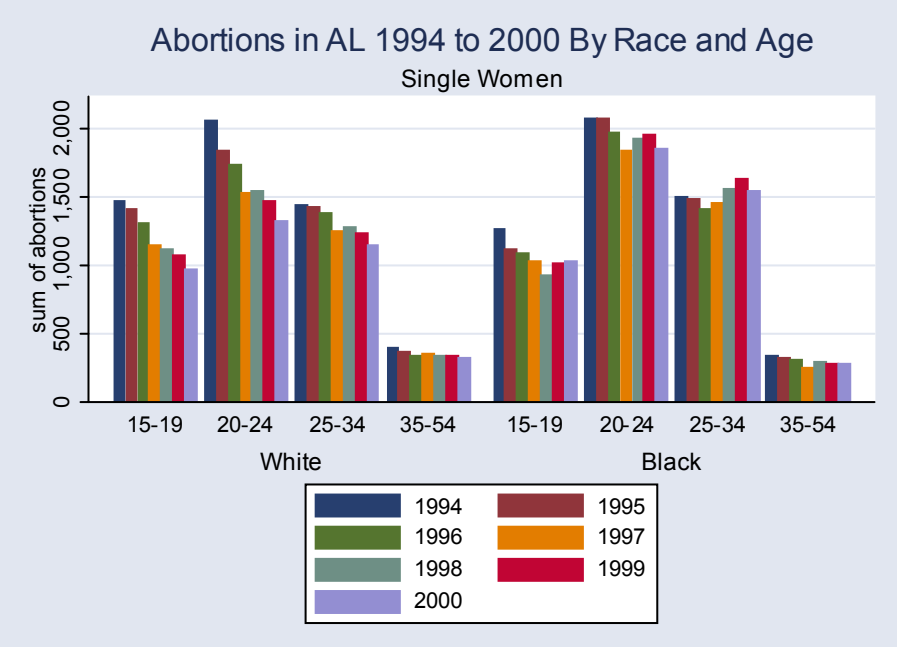


Note: abrat = abortions per birth; apreg = abortions / (abortions + births)

Figure 18



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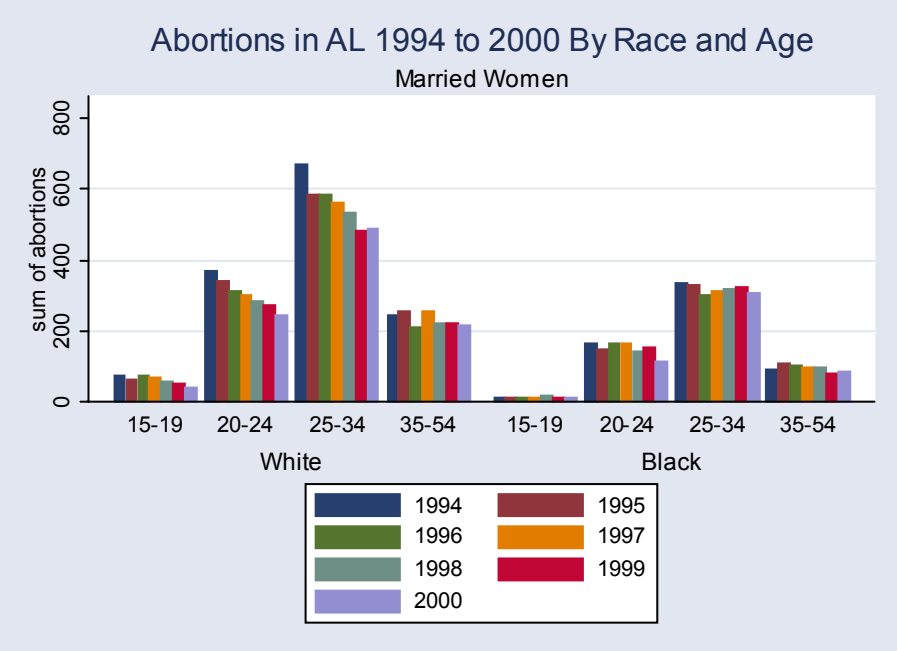

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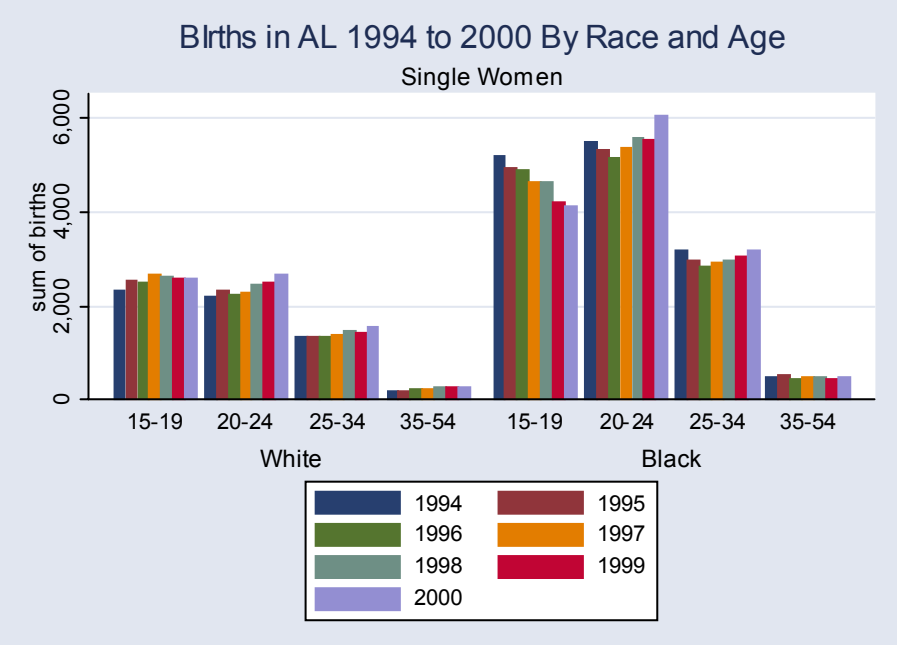

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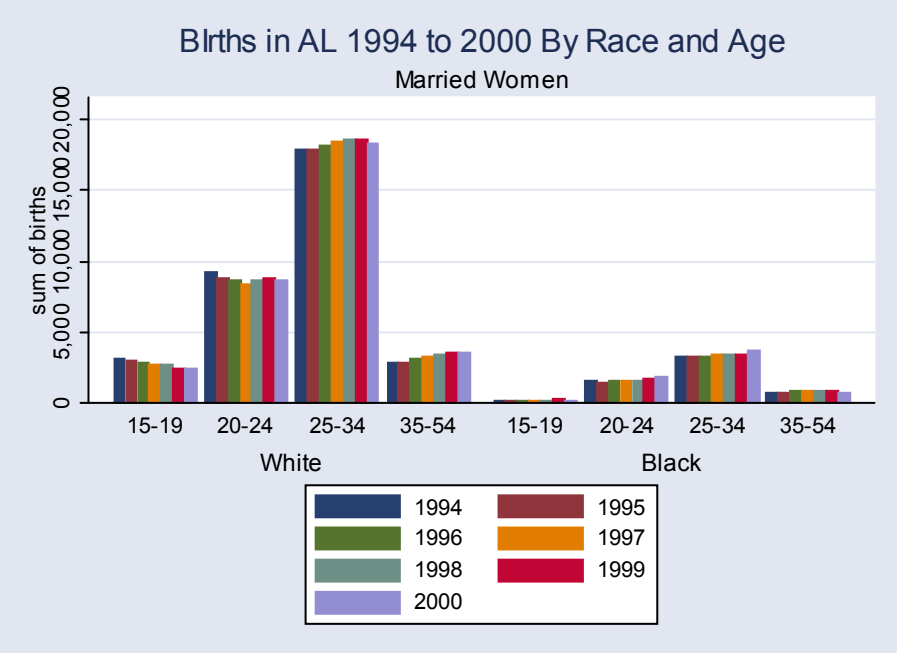

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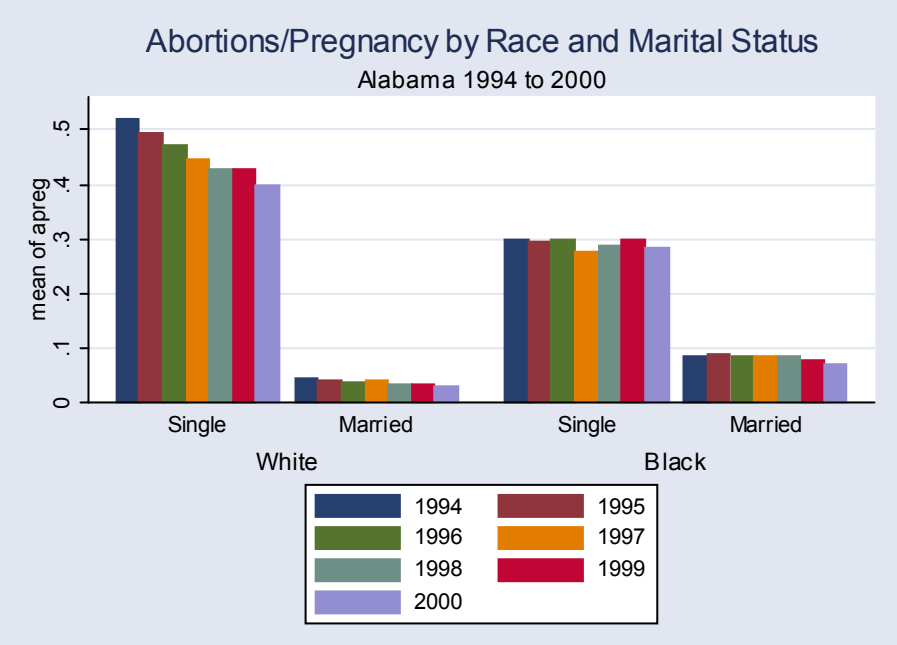

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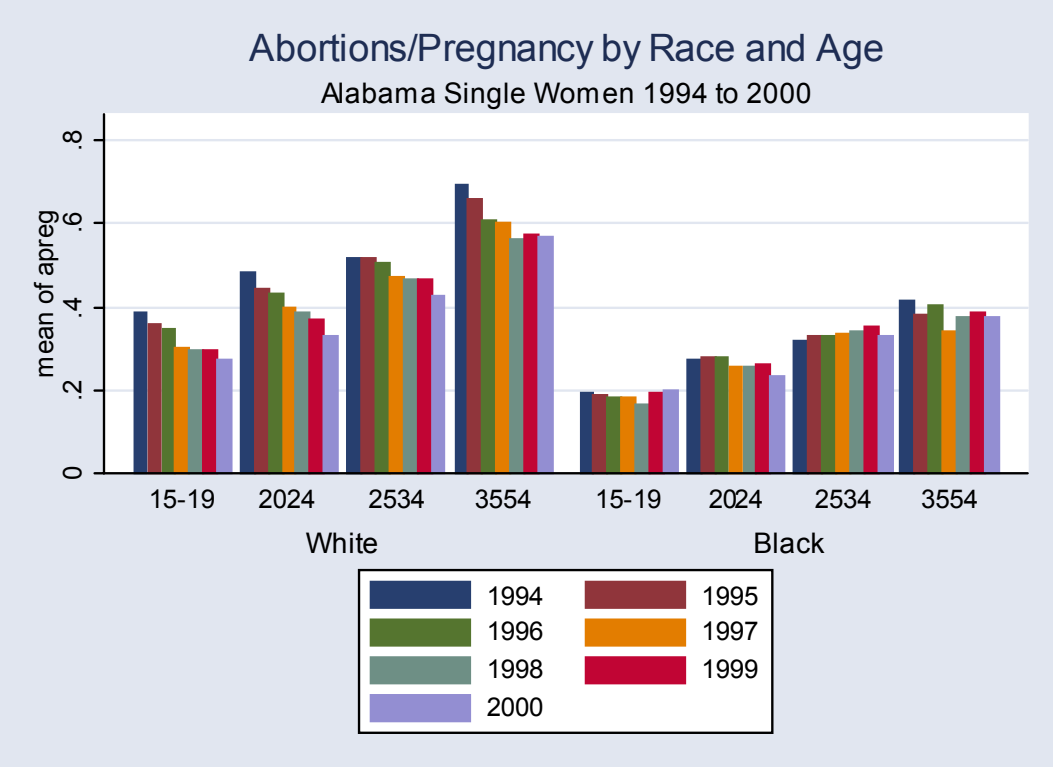
Abortions/Pregnancy by Race and Age
Alabama Single Women 1994 to 2000
mean of apreg
0
.2
.4
.6
.8
15-19
2024
2534
3554
15-19
2024
2534
3554
White
Black
1994
1995
1996
1997
1998
1999
2000

Table 1: Bonus winning states and award amounts

Award year	Data Years	Winning States	Each state's award amount
1999	1994-97	AL, CA, DC MA, MI	$20 million
2000	1995-98	AL, AZ, DC, IL, MI	$20 million
2001	1996-99	AL, MI, DC	$25 million
2002*	1997-00	AL, CO, DC, MI, TX	$19.8 million
2003	1998-01	CO DC, MD, TX, WY	$20 million

Source: DHHS. TANF Report to Congress, 2003.

*In 2002, Virgin Islands was awarded a bonus of approximately $900,000. Consequently, award amounts were reduced by nearly $200,000 for the other five states awarded bonuses that year.

Table 2: Regression Estimates of the Trend in the Non-Marital Birth Ratio (in %) for AL, DC, MI 1994 to 2000 or 2001 [1]

Coefficient x 100 (robust t-stat) from Linear Probability Models

Dependent Variable = Unmarried Birth

	Alabama	D.C.	Michigan
Birth years	1994 to 2000	1994 to 2001	1994 to 2000
Model / Controls [2]			
1. Trend only	-0.061 (1.7)	-1.432 (17.7)	-0.254 (10.5)
2. Trend + race	0.026 (0.8)	-0.463 (6.9)	-0.180 (8.2)
3. Trend + race + age	0.238 (8.4)	-0.350 (5.5)	0.069 (3.6)
4. Trend + race + ed	0.239 (8.2)	-0.151 (2.4)	0.002 (0.1)
5. Trend + race + ed + age	0.302 (10.8)	-0.158 (2.5)	0.111 (5.9)
Number of births	428,266	65,359	941,085

Data: NCHS birth records. Births to women aged 15 to 54.

1. Michigan and Alabama were awarded the out-of-wedlock birth reduction bonus four years, and D.C. was awarded it five years. The bonuses for Alabama and Michigan were based on births from 1994 to 2000. The bonuses for DC were based on births from 1994 to 2001. See text for details.

2. Controls: linear trend (1994 to 2000 for AL and MI, 1994 to 2001 for DC), and, as indicated, dummy variables for race (Hispanic, non-Hispanic white, non-Hispanic black, other non-Hispanic); age (<18, 18-19, 20-24, 25-34, 35-54); and education (less than HS graduate, HS graduate, beyond HS graduate; missing).

Table 3: Contributions to the Changes in the Total Non-Marital Birth Ratio of Group-Specific: Population Sizes, Fertility Rates and Non-Marital Fertility Ratios AL, DC, MI, 1990-2000

	Alabama	D.C.	Michigan*
Total Change in nonmarital birth ratio, 1990 to 2000	0.043	-0.045	-0.022 to -0.037
<u>Group = race (4)</u>			
1. Change group-specific nonmarital ratios only	0.054	0.001	-0.010
2. Change group-specific birth rates only	-0.011	-0.018	-0.019
3. Change group population size only	0.002	-0.031	0.015
<u>Group = raceXage (16)</u>			
1. Change group-specific nonmarital ratios only	0.058	0.016	0.038
2. Change group-specific birth rates only	-0.028	-0.024	-0.049
3. Change group population size only	0.006	-0.044	0.019
<u>Group = raceXed (12)</u>			
1. Change group-specific nonmarital ratios only	0.073	0.027	0.003
2. Change group-specific birth rates only	-0.021	-0.036	-0.025
3. Change group population size only	-0.005	-0.048	0.002
<u>Group = raceXageXed (48)</u>			
1. Change group-specific nonmarital ratios only	0.069	0.027	0.009
2. Change group-specific birth rates only	-0.029	-0.030	-0.047
3. Change group pop. size only	0.003	-0.057	0.012

Data: NCHS birth records and Census 5% PUMS.

* For Michigan, 1994 group specific non-marital birth ratios are substituted for their 1990 counterparts due to a change in marital status coding on birth certificates in 1993. As a result, "actual changes" vary between disaggregations. This occurs because the simulated 1990 non-marital birth ratio is a weighted average of the group-specific ratios for 1994, whereas the weight for each group is the group's share of 1990 births.

Table 4: Contributions of changes in group-specific population size, percent married, and marital and non-marital birth rates to changes in the nonmarital birth ratios, 1990 to 2000. AL, DC, and MI

State	Nonmarital Birth Ratio 1990 (1)	Change in Nonmarital Birth Ratio Due Only to Changes in Group-Specific: Population Size (2)	Percent Married (3)	Marital and Nonmarital Birth Rates (4)	Sum of cols. (2), (3) & (4)	Change in Nonmarital Birth Ratio 1990 to 2000
AL	0.298	0.003	0.033	0.007	0.043	0.043
DC	0.647	-0.042	0.003	0.004	-0.035	-0.045
MI*	0.348	0.005	0.031	-0.052	-0.017	-0.016

Demographic groups are 48 race-by-age-by-education cells.

* For Michigan, 1994 group specific non-marital birth ratios are substituted for their 1990 counterparts due to a change in marital status coding on birth certificates in 1993.

Table 5: Trends in Abortion/Pregnancy Ratio for Alabama, 1994 to 2000

Coefficient of Linear Trend*

	All	Whites	Blacks
All	-.0051	-.0067	-.0024
Single women	-0.0078	-0.0189	-0.0011
15-19	-0.0060	-0.0179	0.0003
20-24	-0.0129	-0.0235	-0.0063
25-34	-0.0041	-0.0145	0.0027
35-54	-0.0105	-0.0214	-0.0049
Married women	-0.0018	-0.0017	-0.0031
15-19	-0.0007	-0.0008	-0.0004
20-24	-0.0022	-0.0019	-0.0052
25-35	-0.0016	-0.0017	-0.0019
35-54	-0.0041	-0.0038	-0.0045

* All effects are significant at conventional levels.

The sample is restricted to Alabama residents who are black or white, married or single, and with non-missing age from 15 to 54.

Appendix Table 1: Standardized Changes in nonmarital (NM) or marital (M) births for 16 raceXage group, Wasington DC 1990-2000*

	Nonmarital births					Marital births			
		Change due to change in:					*Change due to change in:*		
	Births in 1990	*Pop*	*Percent married*	*NMar birth rate*	*Total change*	*Births in 1990*	*Pop*	*Percent married*	*Mar birth rate*
Totals	7,614	-1,863	58	-1,203	-3,008	4,154	-398	-30	-712
15-19 White	46	-22	-4	-12	-39	10	**-79**	**102**	**-97**
15-19 Black	1,754	**-316**	-9	**-536**	**-861**	78	-12	12	-57
15-19 Hispanic	82	31	-23	23	32	29	2	12	0
15-19 Other	23	28	-2	-48	-22	8	1	2	0
20-24 White	99	-10	-15	-38	-64	75	-8	85	**-104**
20-24 Black	2,177	**-799**	-53	63	**-790**	458	**-126**	**71**	**-233**
20-24 Hispanic	175	58	18	-99	-23	146	55	9	**-113**
20-24 Other	19	6	2	-11	-2	28	11	-19	4
25-34 White	124	-35	7	-39	**-68**	800	-54	-93	130
25-34 Black	2,582	**-886**	94	**-484**	**-1,276**	1,289	**-430**	-120	-79
25-34 Hispanic	148	46	-25	-19	2	228	**96**	5	**-99**
25-34 Other	21	17	5	-23	0	132	**109**	-33	**-114**
35-54 White	32	-3	0	1	-3	463	-55	-4	**103**
35-54 Black	294	-4	65	22	84	329	31	-65	-13
35-54 Hispanic	31	20	-2	7	24	47	36	9	-23
35-54 Other	7	6	1	-10	-3	34	24	-4	-16

* The standardization was carried out using 48 race-by-age-by-education groups. However, to facilitate presenta figures have been summed across education groups for each age-race group shown.
The racial identification categories Black, White and "Other" excludes Hispanics who may be of any race.
See text for details.