Institute for Research on Poverty
Discussion Paper no. 1146-97

Taxes and Transfers: A New Look at the Marriage Penalty

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September 1997

The authors wish to thank John Karl Scholz, Harvey Rosen, Len Burman, participants in the Department of Economics Summer Workshop at the University of Wisconsin–Madison, participants at the American Enterprise Institute Conference on Disconnected Youth, and participants in the microeconomics workshop at the University of Kentucky for very helpful comments and suggests.

Abstract

The public assistance transfer system typically has large marriage disincentives, while the income tax system is likely to subsidize marriage for many low-income families. In other words, the tax system may mitigate the loss of transfer benefits associated with marriage. The relevance of the income tax system for low-income families is even greater with the recent expansion of the Earned Income Tax Credit, for which filers may be eligible even if their tax liability is zero. The interaction of the transfer system with the income tax system has been largely overlooked. This paper describes the distribution of the joint change in 1990 transfer benefits and tax liability associated with a change in marital status.

Taxes and Transfers: A New Look at the Marriage Penalty

I. INTRODUCTION

Economic theory concerning family structure, beginning with Becker (1973, 1974), suggests that economic incentives play a role in family structure decisions. In Becker's model, marital unions occur if the benefits available within a union are greater than the benefits outside a union. Government policy affects the benefits of marriage and provides incentives for couples to marry or separate through two mechanisms: the income tax system and the public assistance transfer system.[1] The transfer system's high implicit taxes on earned income and restrictive eligibility requirements for two-parent families provide disincentives for low-income couples to live together. That is, transfer benefits are typically lower for a cohabiting couple than for a couple living apart. Because of the tax system's progressive rate structure and its attempt to tax families with equal income equally, the joint tax liability of a married couple may not equal the sum of the individuals' tax liabilities if they were unmarried. Tax liability may increase or decrease with marriage and, therefore, has the potential to mitigate or exacerbate a decline in transfer benefits. Marriage is an important route off welfare.

Surprisingly, no one has examined marriage incentive created by the interaction of the tax and transfer systems using a sample of representative households.[2] This paper describes the distribution of marriage disincentives arising from the transfer system and examines the extent to which the federal income tax mitigates or exacerbates these disincentives. The penalties measured in this paper describe

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[1]Even if marital status were unaffected, distortions in the price of marriage imposed by the tax and transfer systems are inefficient (Feldstein and Feenberg, 1995). They distort labor market decisions because marginal tax rates on earnings vary with family structure. For example, secondary earners may experience a change in their after-tax wages upon marriage, which could discourage them from working. Large penalties may also inspire tax and transfer fraud.

[2]Using the Panel Study of Income Dynamics, Bane and Ellwood (1983) found that 46 percent of AFDC spells began with a divorce or separation, and that 35 percent of AFDC spells ended with marriage; in more recent work using the National Longitudinal Survey of Youth, Pavetti (1993) found that 11 percent of AFDC spells end because of marriage, remarriage or reconciliation (see U.S. Congress, 1993, p. 724..

the change in tax liability or transfer benefits that arise solely from changing living arrangements or marriage status. The results are the first step in understanding the effects of the interaction of the transfer and tax systems in relation to family structure.

One reason that the interaction between the tax and transfer systems has received little attention is that many low-income families who are likely to be eligible for transfer payments have historically faced zero or low tax liabilities. However, the expansion of the refundable earned income tax credit (EITC), which targets poor families with earnings, brings more poor families into the tax system and creates a new set of marriage incentives for these families. The EITC may increase or decrease with marriage and, therefore, can mitigate or exacerbate a change in transfer benefits arising from a change in living arrangements or marital status.

We use the nationally representative Survey of Income and Program Participation (SIPP) to calculate how 1990 tax liability and transfer benefits would change for a sample of married couples with children if they were unmarried and living apart. We focus on families with children because the transfer system and the EITC target benefits to families with children. We calculate the 1990 transfer payments and tax liability for each family using a microsimulation model that captures the interaction of Aid to Families with Dependent Children (AFDC), food stamps, Supplemental Security Income (SSI), and state and federal income taxes (including the EITC). We then simulate a separation and recalculate the family's available transfer benefits and tax liabilities. The difference between separated and married transfer benefits and tax liabilities gives a measure of the gains or losses from separation.

Our calculations confirm that most poor two-parent families could significantly increase their transfer benefits if they separated. In fact, for more than 25 percent of the poor families, separation would increase their transfer benefits in excess of 40 percent of their income. The median poor married couple could increase its transfer benefits by an amount equal to 28 percent of income if husband and wife separated. We find that this gain may be largely offset by the income tax system. More than 80 percent of

the poor couples face higher tax liabilities if they separate, and the median increase in tax liability is equal to 9 percent of the family's income. However, even with the partial offset, the median poor family in our sample still faces net gains to separating that exceed 17 percent of income. In general, those families with the most to gain in terms of increased transfer benefits if they separated have the most to lose in terms of higher tax liability.

The tax and transfer systems also create incentives for unmarried women to marry or to remain single. To characterize these incentives, we calculate how 1990 tax liability and transfer benefits would change for a sample of unmarried women with children if they were married and living with a spouse. We use a selection method to predict the earnings of their potential husbands and simulate their transfers and taxes as unmarried persons and as a married couple. The difference between married and unmarried transfer benefits and tax liability gives a measure of gains or losses from marriage. We find that more than 25 percent of all poor single women with children face a loss of transfers in excess of 30 percent of their income if they marry; the median loss is equal to 22 percent. The tax system subsidizes marriage for 83 percent of the poor families, thereby mitigating the decline in transfer benefits associated with marriage. The median net change is equal to 15 percent, substantially below the loss of transfers viewed in isolation. We also find that although the near-poor (those with reported income between one and two times the poverty line) face smaller declines in transfer benefits as a fraction of their income than the poor, most face an *increase* in tax liability if they marry, thereby exacerbating their loss of transfer benefits.

Section II of this paper presents an economic model of marriage. Section III describes the tax and transfer systems, with emphasis on how marriage and living arrangements influence tax liability and transfer program eligibility and benefits. Section IV gives a our definition of the marriage penalty, incorporating the interaction of the income tax and transfer systems. Sections V and VI describe the

distributions of changes in tax liability, transfer income, and their combination for samples of married couples and unmarried women.

II. A SIMPLE MODEL OF MARRIAGE

A simple version of Becker's (1973, 1974, 1981) model helps explain how taxes and transfers enter into the marriage decision. Consider the following form of a woman's indirect utility function:[3]

$$U(M; W_f, W_m, B, X), \tag{1}$$

where if the woman is married and $M = 0$ if not. Utility is a function of the woman's own wage, W_f, the wage of her actual or potential spouse, W_m, the welfare benefits available to the family, B, and a vector of other characteristics that determine marital status, X. In this model, a woman will choose marriage if the utility from being married exceeds the utility from being single.[4]

$$M^* = U(1; W_f^m, W_m^m, B^m, X) - U(0; W_f^u, 0, B^u, X) \tag{2}$$

$$M = 1 \text{ if } M^* > 0 \text{ and } 0 \text{ otherwise}$$

We do not observe the utility difference, M^*, but we do observe whether or not the woman is married. We assume that an increase in W_m increases utility in the married state and, therefore, W_m is positively related to M^*. We also assume that W_f and B have positive effects on utility, yet W_f and B are ambiguously related to M^*.[5] The ambiguity arises from the fact that the marginal effects of W_f and B may differ in the married state compared to the unmarried state. That is, an increase in W_f or B will stabilize a

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[3]This specification of utility follows Moffitt (1994).

[4]This might also be a model of cohabitation without marriage, but for simplicity we assume that couples either cohabit when married or live separate when unmarried.

[5]Moffitt (1983) suggests that the marginal effect of B may be different from the marginal effect of W, because of the stigma attached to receiving welfare benefits.

marriage by increasing utility in the married state *and* make independence more attractive by increasing utility in the unmarried state.

The income tax and transfer systems affect the marital decision through B, W_f, and W_m. The superscripts, m for married and u for unmarried, indicate that transfer benefits and after-tax wages may differ depending on the woman's marital state. For families with children, the level of benefits available to single-parent families, B^u, is usually greater than the level of benefits available to married couples, B^m, suggesting that the transfer system discourages marriage or encourages separation. The income tax system may cause a woman's marginal tax rate to increase when she marries, thereby reducing her after-tax wage and discouraging marriage.[6] The purpose of this paper is to quantify the magnitude and distribution of the financial incentives imposed by the tax and transfer system for choosing one family structure over another.

III. DESCRIPTIONS OF THE TAX AND TRANSFER SYSTEMS

The following descriptions of the transfer and tax systems emphasize how family structure influences tax liability and transfer program eligibility and benefits. In general, transfer benefits change when actual living arrangements change, increasing with the number of people in the unit and decreasing with income in the unit (refer to Appendix Table 1A for a summary of the transfer programs). Tax liability changes when legal marital status changes and may increase or decrease with marriage depending on the distribution of income between the spouses (refer to Appendix Table 1B for a summary of tax parameters).

[6]We discuss these effects in more detail in the next section,

AFDC

The AFDC program as it existed before the 1986 welfare reform legislation[7] provided cash benefits to low-income families in which the children were deprived of parental support because at least one parent was absent or incapacitated. In general, if both natural or adoptive parents lived with the child, regardless of legal marital status, the family was not eligible for basic AFDC. Therefore, if a single parent married or cohabited with the other parent of the children, the family became categorically ineligible for AFDC (likewise, if a couple separated, the spouse with custody of the children became categorically eligible for AFDC). Two-parent families could be categorically eligible for AFDC-Unemployed Parent (AFDC-UP) benefits if the primary wage earner was unemployed, although the eligibility requirements were more strict for AFDC-UP than basic AFDC.[8] If a single parent cohabited with or married someone *other* than the natural or adoptive parent of the children, the new spouse was not necessarily included in the AFDC unit. If the woman did not marry the unrelated male, his income was not counted in the family's income unless there was evidence of an explicit contribution to the family's maintenance.[9] If she married the man, seven states counted stepparents as natural parents and, therefore, the children would no longer be deprived of parental support due to absence. The remaining

[7]The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 replaced AFDC with block grants to the states, Temporary Assistance for Needy Families. States now have considerably more flexibility in structuring family assistance.

[8]Prior to the 1988 Family Support Act (FSA), the UP program was optional, and only 26 states offered AFDC benefits to unemployed parents. The FSA, however, mandated that the remaining states adopt UP programs by October 1990. AFDC-UP requires the unemployed parent to show previous attachment to the labor force and to work less than 100 hours per month. States adopting AFDC-UP programs after the FSA may limit participation to six months per calendar year.

[9]See Moffitt, Reville, and Winkler (1995) for a thorough description of the ways that states treat this income. They conclude that the AFDC program treats cohabitors quite leniently, based on information that most states exclude cohabitor's contributions toward rent and many states also exclude other cash contributions when calculating income available to the AFDC unit. There is also little evidence to suggest that rules are enforced in states that require contributions of cohabitors to be included in unit's income.

states counted a portion of the stepparent's income toward the AFDC unit's income, which could reduce or eliminate AFDC benefits.[10]

Food Stamps

The food stamp program provides low-income families with coupons that are redeemable for food. The food stamp unit includes all members of a household who prepare food together, regardless of their kin or legal marital relationship. Federal maximum benefit allotments increase with family size but decrease with income. Thus, marriage to someone with income may reduce the amount of food stamps for which a family is eligible but will not affect categorical eligibility.

SSI

SSI provides cash payments to poor blind or disabled individuals or married couples. Federal SSI benefit standards depend on whether the unit is eligible as an individual, a couple, or an individual living with an ineligible spouse. Benefits decline as the unit's income increases. Unlike the AFDC and food stamp programs, legal marital status rather than living arrangements determines SSI benefits. Marriage may reduce SSI benefits in two ways. First, if a person eligible for SSI marries someone who is not eligible for SSI, a portion of the ineligible spouse's income is counted toward the eligible person's income. Marriage to a spouse with sufficiently high income may leave the person ineligible for SSI. Second, if a person eligible for SSI marries someone who is also eligible for SSI, their joint payment is less than two times the individual payment.[11]

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[10]Moffitt, Reville and Winkler (1995) estimate that in 1987, 5 percent of AFDC recipients were cohabiting and 14 percent were married.

[11]Medicaid is an important omission from the discussion of transfer programs. As shown in the 1993 *Green Book* (U.S. Congress, 1993, Tables 12 and 13, pages 1259–60), Medicaid can substantially increase the transfer penalty. Most AFDC recipients are automatically eligible for Medicaid. A single mother receiving AFDC may be reluctant to marry a person who does not have health insurance because his income may make her ineligible for AFDC and Medicaid. School lunch and housing assistance are a few other transfer programs that might also be affected by changes in marital status or living arrangements.

Federal Income Taxes

In the federal income tax system, legal marital status determines the type of return that the tax unit files. Typically, married couples file joint returns and unmarried persons file single or, if they have dependents, head-of-household returns. The filing status then determines many of the parameters of the federal income tax system, including standard deductions, exemptions, and rate schedules.[12] For example, the standard deduction for married joint filers is less than two times the standard deduction of single filers, and tax brackets for joint filers are larger than those for single filers.

Although married couples with the same joint incomes, all else equal, have the same tax burdens, the tax system is not marriage neutral. Feenberg and Rosen (1995) and Rosen (1987) show that the difference in married versus unmarried tax liabilities depends largely on the distribution of income between the spouses. Generally, if the spouses' incomes are similar, their joint tax liability is greater than the sum of their individual tax liabilities if they were unmarried. Likewise, if the spouses' incomes are dissimilar enough, their joint tax liability is lower than the sum of their tax liabilities if they were unmarried.

Marriage and living arrangements may also affect tax liabilities through the EITC. In 1990, the year of our data, the EITC was available only to filing units with qualified children and positive adjusted gross income.[13] Unlike other credits, the EITC is refundable; that is, if a filing unit's credit is greater than its tax liability, the difference is refunded. The credit increases with income until it reaches a maximum. Over a range of income, taxpayers receive the maximum credit, and then it is phased out with additional income above a certain amount. Although the amount of the EITC does not vary with filing status *per se*,

[12]A recent report by the General Accounting Office (1996) identifies "59 provisions in the income tax code where tax liability depends, at least in part, on whether a taxpayer is married or single" (p. 3).

[13]A qualified child is a natural or adopted child or stepchild of taxpayers filing joint of head-of-household returns. In 1990, a parent had to provide more than half the support for the child, regardless of whether he or she lived with the child. Beginning in 1991, a parent could claim the EITC only if the child lived with him or her for more than half the year.

the EITC may subsidize or penalize marriage depending on the distribution of income between the individuals. For example, if a single mother with no income marries a man with earnings, the new unit may become eligible for the EITC. Likewise, a married couple with two low earners filing jointly may substantially increase their EITC benefits if the couple separates and one parent files a head-of-household return.

State Income Taxes

Seven states have no income tax, and therefore no marriage penalty. Most other states have provisions to mitigate a change in tax liability arising from marriage. For example, eleven states allow couples to file combined separate returns, ten states have special joint rate schedules, and seven states have flat tax rates.

IV. IMPLICATIONS FOR DEFINING THE "MARRIAGE PENALTY"

Previous literature defines the "marriage penalty" in a variety of ways. The limited literature measuring penalties imposed by the transfer programs defines the marriage penalty as a change in disposable income, including tax liability and transfer benefits, that arises from a change in marital status (Primus and Carlson, 1994, and U.S. Congress, 1993). Because AFDC and food stamp benefits change with living arrangements but not marriage *per se*, the use of the word "marriage" to describe the penalty is somewhat misleading. A couple may experience a change in transfer benefits if its members change living arrangements rather than their legal marital status.[14] We define a "transfer penalty" or "transfer

[14]For ease of exposition, we will refer to penalties as arising from an actual change in marital status or an actual change in a household arrangement, although misreporting living arrangements may allow families to avoid penalties. It should be noted that it is difficult to monitor marital status and living arrangements, so misreporting may be a large problem.

subsidy" as the difference in transfer payments a couple experiences if cohabiting (whether they are legally married or not) rather than living separately.

The federal income tax filing unit, in contrast, is generally based on legal marital status.[15] The marriage penalty in the income tax literature arises if tax liability is greater (or the refunded portion of the EITC is lower) when a couple is married rather than single (Feenberg and Rosen, 1995, and Rosen, 1987). We define the "tax penalty" or "tax subsidy" as the difference in federal and state tax liabilities families experience if they file as a married couple (married filing jointly) rather than as unmarried individuals (single or head of household).

Our definition of the "marriage penalty" or "marriage subsidy" is the difference in tax liability *and* transfer benefits that arise if a couple cohabits *and* marries, rather than live unmarried *and* in separate families. This definition of the marriage penalty ignores separate effects of cohabitation on transfers.

Hypothetical Families

Because the interactions between the tax and transfer systems and marriage are very complex, we illustrate how the marriage penalty arises using a hypothetical family and summarize this discussion in Table 1A. Suppose a single woman living in Pennsylvania in 1990 with two children and zero earnings receives the maximum of $2,640 per year in food stamps and $5,052 in AFDC benefits. Because she has no earnings, she does not file income taxes and is not eligible for the EITC. Suppose the father of the children lives alone and has $15,000 annual earned income but does not support his children. He is not categorically eligible for AFDC or the EITC because he has no children, and he is not eligible for food stamps because his income is too high. Assuming he takes the standard deduction and one exemption, his

[15]In some circumstances, if the taxpayer's spouse is not living in the taxpayer's household for the last half of the year, the taxpayer can qualify as a head of household.

TABLE 1
Tax and Transfer Penalties for Hypothetical Families

A. Single Man Is Father of Children

	Unmarried Woman	Single Man	Combined Income if Couple Lives Separately	Combined Income if Couple: Cohabits	Combined Income if Couple: Marries
Earnings	0	$15,000	$15,000	$15,000	$15,000
Tax liability (w/o EITC)	0	($1,455)	($1,455)	($615)	($203)
EITC	0	0	0	$528	$528
AFDC	$5,052	0	$5,052	0	0
Food stamps	$2,640	0	$2,640	$406	$406
Total	$7,692	$13,545	$21,237	$15,319	$15,731
Change in transfer income				($7,286)[a]	($7,286)
as % of combined income if live separately[b]				(34.3)	(34.3)
Change in tax liability				$1,368[c]	$1,780
as % of combined income if live separately				6.4	8.4
Net change in transfer income and tax liability				($5,918)[d]	($5,506)
as % of combined income if live separately				(27.9)	(25.9)

B. Single Man Is Not Father of Children

Earnings	0	$15,000	$15,000	$15,000	$15,000
Tax liability (w/o EITC)	0	($1,455)	($1,455)	($1,455)	($203)
EITC	0	0	0	0	$528
AFDC	$5,052	0	$5,052	$5,052	$0
Food stamps	$2,640	0	$2,640	$406	$406
Total	$7,692	$13,545	$21,237	$19,003	$15,730
Change in transfer income				($2,234)	($7,286)
as % of combined income if live separately[b]				(10.5)	(34.3)
Change in tax liability				0	$1,780
as % of combined income if live separately				0	8.4
Net Change in transfer income and tax liability				($2,234)	($5,506)
as % of combined income if live separately				(10.5)	(25.9)

[a]Calculated as: [406-(5,052+2,640)].
[b]All changes are divided by $21,237, the sum of their incomes when they are separated, which includes total earned and unearned income.
[c]Calculated as: [(528-615)-(-1,455)].
[d]Calculated as: [1,368-7,286].

federal tax liability is $1,455.[16] If the father moves into the household *without* marrying the mother (cohabits), the AFDC and food stamp programs include him in their units. The family is, therefore, no longer categorically eligible for AFDC because the children are not deprived of parental support. Because of the father's earned income, the annual food stamp benefit for the family of four is only $406. The family experiences a transfer penalty of $7,286 [that is, $406-($2,640+$5,052)]. The father may claim the children and file a head-of-household return. With the standard deduction and three exemptions, his federal tax liability is $615. He is also eligible for a $528 EITC, making his total tax liability only $87. The family faces a $1,368 [that is, (-$87)-(-$1,455)] tax subsidy for cohabitation. The decline in tax liability offsets 19 percent of the loss in transfer benefits and the net loss is $5,918.[17]

In contrast, if the father moves into the household and *marries* the mother, the family would file a joint tax return. Their tax liability, assuming they take the standard deduction and four exemptions, falls to $203 and they are again eligible for a $528 EITC.[18] This family faces a tax subsidy of $1,780 [that is, (($528-$203)-(-$1,455))]. The transfer penalty is the same as the cohabiting case, because legal marital status does not affect AFDC and food stamp benefits. Under this scenario, the decline in tax liability offsets 24 percent of the loss in transfer benefits; the net loss is $5,506.

The outcome of this hypothetical example is different if the mother cohabits with or marries someone who is *not* the father of the children. We summarize this discussion in Table 1B. If the hypothetical couple cohabits but *does not marry*, its tax liability remains unchanged from its pre-cohabiting level, because the children are not his natural children or stepchildren.[19] The AFDC benefits

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[16]The Commonwealth of Pennsylvania does not vary income taxes by filing status or the number of dependents. Our hypothetical man pays $315 in state taxes regardless of his situation.

[17]The EITC is much larger under 1996 rules, making the tax subsidy even greater.

[18]Note that the EITC is not directly related to legal marital status.

[19]The tax code states that an unrelated male may claim the children as dependents if they lived in his home "as a family member" for the entire year and he provides over half their support. If the male does this, there is no difference in the tax treatment of the natural father and the tax treatment of an unrelated male. For the sake of

do not change because the man is neither the natural father nor the stepfather of the children (we assume that the man does not report contributing to the family). Because the man is likely to be included in the food preparation unit, food stamp benefits decrease to $406. They face a transfer penalty of $2,234 [that is, $5,052+$406-($5,052+$2,640)]. The penalty for cohabiting arises solely from the loss of food stamps and this loss is not mitigated by a reduction in tax liability.

Marriage to an unrelated male results in the same outcome as if the spouse were the father of the children. The tax system sees no difference between the spouse's relationship to the children, so this family may file a joint tax return and face the same tax subsidy, $1,780, as if the man were the father of the children. Food stamp benefits decrease because of the spouse's income. Because the spouse is not the natural or adoptive father of the children, the children are still deprived of parental support and categorically eligible for AFDC. However, the stepfather's income is counted toward the AFDC unit's income and they will become financially ineligible for AFDC benefits.[20] The transfer penalty is therefore $7,286, and the net loss from marriage is $5,506, the same as if he were the natural father.

At least two points are clear in these hypothetical cases. First, the largest penalties arise when a woman cohabits with the father but does not marry him. The family faces a large loss in transfer benefits but does not gain the full benefit of the income tax deductions. Second, families in which the man is not the children's father are better off cohabiting rather than marrying because of the transfer system's lenient treatment of contributions by unrelated individuals. Although these hypothetical examples illustrate the complicated changes that occur with a change in marital status or living arrangements, they cannot be generalized to all families and do not describe the distribution of potential subsidies or penalties faced by families in the United States.

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comparison, we assume he does not claim the children.

[20]In the seven states with general applicability rules the stepfather is treated like the natural father and, no matter what the man's income, the family would be categorically ineligible for basic AFDC because the children are no longer deprived of parental support.

V. CALCULATING TRANSFER AND TAX PENALTIES FOR A SAMPLE OF MARRIED COUPLES

In this section, we calculate changes in tax liability, transfer benefits, and the combination of the two that arise with a change in cohabitation and marital status for a sample of married couples with children. We are interested in the financial incentives or disincentives for separating imposed by the tax and transfer systems.[21]

The distribution of changes in transfer benefits associated with cohabitation is not well documented. Previous attempts to measure penalties imposed by the transfer system focused on hypothetical families (Primus and Carlson, 1994, and U.S. Congress, 1993). However, the analysis of a hypothetical family does not provide any sense of the actual magnitude and prevalence of the penalties that arise from complicated interactions of programs, different state-level tax and transfer rules, and the wide range of family types. Information on the distribution of marriage penalties is needed to determine the extent of the marriage disincentives from the transfer system and the potential effects of reforms that change these disincentives.

In contrast, the distribution of changes in tax liability associated with marriage is well documented. Earlier research shows that the income tax system is likely to subsidize marriage for low-income families. That is, total tax liabilities for joint tax returns are lower than if the individuals filed single or head-of-household returns. Feenberg and Rosen (1995) and Rosen (1987) show that the tax system subsidizes marriage for a relatively large fraction of families with adjusted gross incomes below $10,000. Specifically, under 1988 tax laws, only 1.5 percent face a tax penalty for marriage and 37 percent face a tax subsidy. In 1993, 15 percent face a penalty and 23 percent face a subsidy. Their calculations are based on the Tax Simulation Model of the National Bureau for Economic Research,

[21]Because we are isolating the financial incentives of the tax and transfer system, we do not include home production. If families actually change their living arrangement, rather than just misreport it, home production is likely to change a great deal. We also ignore differences in child care, work expenses, and housing expenses.

which uses a stratified random sample of joint tax returns. The model simulates a separation and calculates the tax liability of the individuals if they were not married. Because tax returns do not include information on the distribution of income between spouses, the tax returns are augmented by Current Population Survey data to predict what fraction of income each spouse contributes to total income. In addition, the researchers assume that any itemized deductions on the return are allocated to the higher-earning spouse and that childless couples file as singles when they are separated. If there is one child, the spouse with the higher income receives the exemption. If there is more than one child, the spouse with the higher income receives all but one of the exemptions for the children.

We calculate a distribution of changes in transfer benefits and tax liability using a sample of married couples and a microsimulation model (Appendix 1 and Dickert, Houser, and Scholz, 1994, contain more detail on the program rules and the microsimulation model). The microsimulation carefully models AFDC, food stamps, SSI, federal and state income taxes, and their interactions. The model uses families from the 1990 calendar year in the 1990 SIPP as its input and, therefore, the 1990 rules for the tax and transfer programs. We dropped units with members who were not in the sample for the entire calendar year or who changed marital status during the year. We restrict our sample in two additional ways. First, we only include women between the ages of 18 and 44, which is the age range when most changes in marital status occur (Alm and Whittington, 1994 and 1995a , Moffitt, 1994, and Whittington and Alm, 1995). Excluding very young and elderly women also avoids the complicated family structures of teenage mothers and the different set of transfer programs for the elderly. Second, we include only families with children in our sample, because the transfer system and the EITC target families with children. In the final sample there are 3,679 observations, representing, with the SIPP weights, 17.4 million married couples.

The model calculates income taxes based on the demographic structure of the household as of December 1990. The state and federal tax modules determine adjusted gross income, taxable income, and

tax liability. We first calculate annual tax liability for the couple. We then simulate a separation and recalculate tax liabilities for the two "new" families. Unlike Feenberg and Rosen, we know the distribution of income between spouses. However, we do not know exact tax liability and, therefore, a number of assumptions are necessary:

1. All families with earnings file taxes, even though families with total deductions and exemptions exceeding AGI are not required to file. This assumption gives us a measure of potential income.[22]

2. All filers take the standard deduction.[23]

3. When married, the couple files a joint return.[24]

4. When separated, the woman claims the children as dependents. Therefore, the husband files a single return and the wife files a head-of-household return.[25]

5. We divide earned and unearned income according to individuals' reported shares of each.

6. We ignore alimony and child support following a separation.[26]

7. There are no behavioral changes following a marriage or separation.

Within the transfer program modules—AFDC, food stamps, and SSI—the model tests for monthly categorical, asset, and income eligibility before determining benefits. Monthly benefits are

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[22]Scholz (1994) provides some insight into the potential error in this assumption. He finds that about 14 to 20 percent of those households eligible for the EITC do not file tax returns.

[23]This is a reasonable assumption for low-income families. More than 94 percent of taxpayers with AGI below $20,000 filed the standard deduction (Internal Revenue Service, 1993).

[24]Only 1.9 percent of all tax returns and 4.3 percent of all married tax returns in 1990 filed separate married returns (Internal Revenue Service, 1993). This option is beneficial primarily to families where one spouse has high deductible expenditures (such as medical expenses).

[25]We do this to remain consistent with our "transfer penalty" calculations described below. Another way to deal with this assumption would be to calculate the tax liabilities with variations in who claims the children and choose the variation that minimizes tax liability. For example, in a single-earner family, the person with earnings would claim the children as dependents. In other cases, the secondary wage earner may be better off claiming the children because he or she may be eligible for the EITC. In both cases, our assumption, if incorrect, overestimates the tax liability of the separated couple, and thus tends to overstate the absolute value of the tax penalty.

[26]Ignoring alimony and child support is likely to underestimate the size of the subsidy for separation. This is particularly important in light of recent provisions to increase compliance with child support decrees.

aggregated into an annual benefit amount for the couple. We then simulate a separation and recalculate transfer benefits for the two "new" families. Together with the previous assumptions, the following assumptions apply:

1. Participation is 100 percent in all transfer programs. Because participation in transfer programs is typically well below 100 percent, these calculated transfer penalties represent the change in *potential* income associated with cohabiting.[27]

2. We use the reported relationships from SIPP.[28]

Figure 1 shows the distributions of changes in transfer benefits, tax liability, and their combination when we simulate a separation for our sample of married couples. The figure shows the distributions for "poor families," those with reported incomes below the poverty line, "near poor families," with incomes between one and two times the poverty line, and "nonpoor families,"with incomes greater than two times the poverty line. Reported income (reported earned, unearned, and transfer income minus their simulated taxes) describes a family's income situation before simulating a change in family structure, and the poverty line accounts for family size.[29] For each family we divide the value of the change in transfer benefits, tax liability, and the combination by the family's potential income when married.[30] Potential income includes reported earned and unearned income and simulated transfer benefits net of simulated state and federal income taxes and payroll taxes. This measure does not reflect any transfer program or income tax participation decisions. We use *married* potential incomes as

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[27]According to Dickert, Houser and Scholz (1995), participation rates (number of participants divided by the number of eligibles) for AFDC is 76 percent for single parents and 25 percent for married couples. The food stamp participation rate is 67 percent for singles and 32 percent for married couples.

[28]This is especially important in calculating AFDC benefits. If, for example, a mother is married to the stepfather of the children, he is not in the AFDC unit in most states and his income is treated differently from members of the unit. Or, if a grandmother lives with her grandchildren and they are all in an AFDC unit, their benefits will not change when she marries because her husband is not related to the children.

[29]The official measure of income used to determine poverty does not include taxes or cash value of food stamps. Our measure of income includes both of these, as suggested by the 1995 report by the National Research Council (1995).

[30]All observations are weighted by the SIPP person weights.

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the normalizing factor because we are interested in the change in tax liability and transfer income relative to the family's initial status. Appendix Table 2 has means and standard deviations of selected variables for each of the income groups.

Poor Families

The top panel of Figure 1 confirms the presumption that the transfer system imposes on poor families large financial incentives for separating. The line in the box is the median change in transfer benefits and the box extends from the 25th to the 75th percentile, the so-called *interquartile range*.[31] A positive number indicates that available transfers are higher for couples when separated relative to married (i.e., a positive number represents a penalty for cohabiting). The median poor couple could increase its transfers by 28 percent of its income if separated. More than 25 percent of the poor face an increase in transfer benefits, if they separated that exceeds 40 percent of their income.[32] The top panel of Figure 1 also shows that total tax liabilities would increase for most poor married couples if they separated.[33] Ignoring the tax system, therefore, overstates the financial gains from separation facing some married couples. The median poor family faces an increase in tax liability equal to 9.2 percent of its income, and at least 25 percent face increases in tax liability that exceed 13 percent of income. In spite of the ability of the tax system to offset a portion of the transfer penalty, the net penalties are still quite large. The median net change in transfers and tax liability is still 17.9 percent, and at the 75th percentile it is 30.7 percent.

[31]The lines outside the box extend to the adjacent values, which are formally defined as the data point less than or equal to (in absolute value) three-halves the interquartile range. If there are observations outside the adjacent values, they are plotted individually.

[32]The increases in benefits arise primarily from a gain of food stamps and AFDC. Over 82 percent of the families would have higher food stamp benefits if they separated, with an average increase equal to 12 percent of their income. Almost 78 percent of the families face an increase in AFDC benefits if they separate, and the average increase is 36 percent of their income.

[33]Observations below the zero line represent an increase in tax liability associated with separation.

Tables 2A and 2B give more insight into the interaction of the tax and transfer programs. Table 2A shows that 94 percent of the poor married couples face higher transfer benefits if they separate and 80 percent face higher tax liability if they separate. In general, those families with the most to gain in terms of increased transfer benefits if they separate have the most to lose in terms of higher tax liability. Almost 76 percent of the sample face higher transfer benefits and higher taxes if separated. The average increase in transfers for these families is 32 percent of their income, but that increase is partially offset by an average increase in tax liability of 9 percent. Even with the partial offset, the average net benefit from separation for these couples is 22 percent of their income. Only 8 percent of the sample experience an increase in transfers that would be accompanied by a simultaneous decrease in tax liability. In addition, these families for whom the tax system exacerbates the marriage disincentives of the income transfer system have relatively small average increases in transfer benefits (6.4 percent) and declines in tax liability (1.2 percent). These are most likely to be two-earner families who might become eligible for a small amount of transfer benefits and the EITC if they separate. Almost 10 percent of the sample of poor married couples face no change in taxes, but an increase in transfers, if they separate. Most of these cases arise because the husband has no earnings and the family becomes eligible for AFDC if he is absent from the household. Among the 5 percent of the sample who face no change in transfer benefits if they separate, most are penalized by the tax system for separating, and the average penalty exceeds 10 percent of income.

Finally, the first set of bars in Figure 2 shows that the aggregate $5.5 billion increase in available transfer income if the poor couples lived apart is offset to some extent by an aggregate loss of $1.6 billion in the form of higher tax liability. The net gain is substantial, representing a 25 percent increase in these families' aggregate potential income.

TABLE 2
Simulation of the Effects of Separation in a Sample of Poor Married Couples
(N=322)

A. Percentage of Sample Affected by Interaction between Transfer and Tax Systems

		Change in Tax Liability			
		None	Increases if Separate	Decreases if Separate	All
Change in Transfer Benefits	None	0.62	4.04	0.62	5.28
	Decrease if Separate	0.93	0.0	0.0	0.93
	Increase if Separate	9.94	75.78	8.07	93.79
	All	11.49	79.81	8.70	100.00

B. Mean Changes in Tax Liability, Transfer Benefits and Net Change[a]

		Change in Tax Liability			
		None	Increases if Separate	Decreases if Separate	All
Change in Transfer Benefits	None	0.0 *0.0* **0.0**	-10.9 *0.0* **-10.9**	3.5 *0.0* **3.5**	-7.8 *0.0* **-7.8**
	Decrease if Separate	0.0 *-2.6* **-2.6**	. . **.**	. . **.**	0.0 *-2.6* **-2.6**
	Increase if Separate	0 *43.4* **43.4**	-9.4 *31.7* **22.2**	1.2 *6.4* **7.6**	-7.7 *32.4* **24.4**
	All	0 *43.3* **43.3**	-9.5 *30.3* **20.8**	1.4 *5.9* **7.3**	-7.6 *29.8* **22.2**

Note: Shaded areas indicate that the couple has incentive to separate.

[a]The top number in each cell is the change in tax liability, the middle, *italicized* number is the change in transfer benefits and the bottom, **bolded** number is the net change resulting from a separation. As in Figure 1, a positive number represents a gain from separation: transfer payments are higher when separated than married (penalty for being married) and tax liabilities are lower when separated. All changes are divided by potential income when married.

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Near-Poor Families

The middle panel of Figure 1 shows that many near-poor families also face a decline in transfers upon cohabitation, the median family facing a loss of 12.9 percent of income. The magnitude of the change is substantially lower for the near-poor compared to the poor, primarily because, by definition, the near-poor have higher incomes and are eligible for fewer benefits. However, 25 percent of near-poor families still face increases in transfer benefits in excess of 25 percent of their incomes. The median combined change in transfer benefits and tax liability, 10.9 percent of income, is slightly lower than the median change in transfer benefits, which suggests that taxes play little role in mitigating or exacerbating the decline in transfer benefits.

Tables 3A and 3B show that the aggregate numbers provide a misleading impression about the effects on individuals. In fact, 53 percent of the sample of near-poor married couples face an increase in transfer benefits if they separate, which would be offset to some extent by an increase in tax liability. As does the sample of poor families, these families have a great deal to gain in transfer benefits (an average of 25 percent of their income) if they separate, and the average increase in tax liability accompanying this gain is substantial (7.4 percent of income). However, compared to the poor families, the tax system is much more likely to exacerbate the transfer system's marriage disincentives. About 31 percent of the families in the sample face higher transfer benefits and lower tax liability if they separate. As a fraction of their income, the net changes are 11 percent of their income.

Not surprisingly, a higher portion of the near-poor families than poor families (15 percent versus 5 percent) are unaffected by the transfer system, primarily because their income renders them ineligible for transfer payments. The tax system penalizes separations for slightly more than half of those unaffected by the transfer system, with an average change of 7.7 percent of income. Slightly under half of the couples whose transfer benefits would not change if they separated would be subsidized by the tax system if they separated, although the mean change is only 3.5 percent of their income.

TABLE 3

Simulation of the Effects of Separation in a Sample of Near-Poor Married Couples (N=1265)

A. Percentage of Sample affected by Interaction between Transfer and Tax Systems

		Change in Tax Liability			
		None	Increases if Separate	Decreases if Separate	All
Change in Transfer Benefits	None	0.08	7.91	7.04	15.02
	Decrease if Separate	0.08	0.00	0.24	0.32
	Increase if Separate	1.03	52.73	30.91	84.66
	All	1.19	60.63	38.18	100.00

B. Mean Changes in Tax Liability, Transfer Benefits and Net Change[a]

		Change in Tax Liability			
		None	Increases if Separate	Decreases if Separate	All
Change in Transfer Benefits	None	0.0 *0.0* **0.0**	-7.7 *0.0* **-7.7**	3.5 *0.0* **3.5**	-2.8 *0.0* **-2.8**
	Decrease if Separate	0.0 *-41.1* **-41.1**	. . **.**	5.8 *-1.1* **4.7**	2.9 *-21.2* **-18.3**
	Increase if Separate	0.0 *17.4* **17.4**	-7.4 *25.4* **18.1**	3.6 *7.6* **11.1**	-3.4 *19.0* **15.6**
	All	0 *7.5* **7.5**	-7.4 *22.0* **14.6**	3.6 *6.2* **9.7**	-3.3 *16.0* **12.7**

Note: Shaded areas indicate that the couple has incentive to separate.

[a]The top number in each cell is the change in tax liability, the middle, *italicized* number is the change in transfer benefits and the bottom, **bolded** number is the net change resulting from a separation. As in Figure 1, a positive number represents a gain from separation: transfer payments are higher when separated than married (penalty for being married) and tax liabilities are lower when separated. All changes are divided by potential income when married.

Figure 2 shows that an aggregate loss of $4.1 billion in the form of higher tax liability (net gain equal to 12 percent of total income) mitigates the aggregate gain of $19.6 billion in transfer benefits available to near-poor married couples if they separate. Although these aggregate incentives seem large, they may be of less concern than the penalties facing poor families, because the family-level penalties are a smaller fraction of total income.

Nonpoor Families

Most nonpoor families face no change in transfer benefits when their marital or cohabiting status changes, because their individual incomes or assets exceed the program limits even if they were separated. In the bottom panel of Figure 1, no median line is visible in the distribution of the changes in transfer benefits for the nonpoor, because the median change is zero. Even at the 75th percentile, the change in transfers is only 3.5 percent of income.[34] The median nonpoor family is faces a decline in tax liability if separated, suggesting that the nonpoor are more likely to have similar incomes than poor or near-poor couples. The median change in tax liability is only 0.9 percent of income. It follows that net changes are also small for these families, with a median change of 2.5 percent of income.

Table 4B shows that the average changes in transfer benefits, tax liability, and their combination are also small relative to total income. Table 4A shows that although 42 percent of the sample of nonpoor families face increases in transfers if they separated the average increase in transfer benefits for these families is only 8 percent of income. Recall that the poor and near-poor families facing higher transfer benefits and higher tax liability often faced particularly high gains from separation. For 26 percent of the nonpoor sample, both transfer benefits and tax liabilities increase when married couples separate. The average increase in tax liability offsets more than half of the increase in transfers, reducing the average net gain from separation to 4.9 percent of income.

[34]In addition, these families are the least likely to participate in transfer programs, even if eligible.

TABLE 4

Simulation of the Effects of Separation in a Sample of Nonpoor Married Couples (N=2093)

A. Percentage of Sample affected by Interaction between Transfer and Tax Systems

		Change in Tax Liability			
		None	Increases if Separate	Decreases if Separate	All
Change in Transfer Benefits	None	0.14	15.86	41.71	57.72
	Decrease if Separate	0.00	0.00	0.10	0.10
	Increase if Separate	0.05	25.80	16.34	42.19
	All	0.19	41.66	58.15	100.00

B. Mean Changes in Tax Liability, Transfer Benefits and Net Change[a]

		Change in Tax Liability			
		None	Increases if Separate	Decreases if Separate	All
Change in Transfer Benefits	None	0.0 *0.0* **0.0**	-6.1 *0.0* **-6.1**	3.0 *0.0* **3.0**	0.4 *0.0* **0.4**
	Decrease if Separate	. . **.**	. . **.**	2.2 *-2.2* **-0.003**	2.2 *-2.2* **-0.003**
	Increase if Separate	0 *1.6* **1.6**	-7.0 *11.9* **4.9**	2.9 *2.4* **5.3**	-3.1 *8.1* **5.1**
	All	0 *0.4* **0.4**	-6.6 *7.3* **0.6**	2.9 *0.7* **3.6**	-1.1 *3.4* **2.4**

Note: Shaded areas indicated the couple has incentive to separate.

[a]The top number in each cell is the change in tax liability, the middle, *italicized* number is the change in transfer benefits and the bottom, **bolded** number is the net change resulting from a separation. As in Figure 1, a positive number represents a gain from separation: transfer payments are higher when separated than married (penalty for being married) and tax liabilities are lower when separated. All changes are divided by potential income when married.

In aggregate, tax liability would increase by $3.9 billion for married couples who separate, which substantially mitigates the $11 billion gain in transfer income available to these families (the net gain is equal to 2 percent of total income). Our results are consistent with other research that shows the change in tax liability for these families to be quite large in absolute terms (Feenberg and Rosen, 1995, and Rosen, 1987). However, relative to total income, the financial incentives for separating imposed by the tax or transfer system are low for nonpoor families.

VI. CALCULATING TRANSFER AND TAX PENALTIES FOR A SAMPLE OF UNMARRIED COUPLES

Feenberg and Rosen (1995) express concern that using a sample of married couples to characterize the distribution of penalties associated with family structure ignores the financial incentives facing unmarried persons. In this section, we examine the distribution of tax and transfer penalties faced by unmarried women. We focus on unmarried *women* because they are more likely to have custody of children than single men and, therefore, qualify for more transfer benefits. Conditioning on being between age 18 and 44 and the presence of children, we have a sample of 1,207 observations of unmarried women, representing 4.9 million families with the SIPP weights.

The obvious difficulty with calculating penalties faced by unmarried women is that the characteristics of their potential spouses are unknown. A few attempts have been made to address this difficulty. Feenberg and Rosen (1995) use a sample of unmarried cohabiting couples from the National Longitudinal Survey Mother-Child database to calculate tax penalties. They calculate tax liabilities of unmarried couples and subtract that from their simulated tax liability if they were married. Unfortunately, SIPP, the data set used in this paper, does not identify cohabiting couples. In addition, using a sample of cohabiting couples ignores the noncohabiting, single population. Assuming assortative mating across wages, Alm and Whittington (1994) determine income of potential mates by multiplying a person's

potential income by annual average male-to-female income ratios. In this case, the relationship of husband to wife's income varies only by a constant multiplicative factor. Cancian (1995) uses data from the National Longitudinal Survey of Young Women and the National Longitudinal Survey of Youth to predict husbands' earnings based on pre-marriage characteristics.[35] The coefficients from these estimates could be used to predict husband's earnings for unmarried women. However, the SIPP does not contain premarriage information on most women, because of its relatively short panels.

As acknowledged by Cancian (1995), women may be married because they are able to attract higher-earning men than unmarried women for some unobservable reason. Using the coefficients from a cross-sectional regression of the earnings of married women's husbands to predict the earnings of potential spouses for unmarried women may overestimate the potential spouse's earnings. Following Schultz (1994), we use a maximum likelihood, two-step selection procedure to predict the earnings of potential spouses. A probit equation predicts whether a woman has a wage-earning spouse and the second step predicts the natural log of the spouse's annual earnings. Appendix Table 3 shows the regression results using a sample of women from the 1990 SIPP.[36]

In the probit regression, education, age, living in an urban area, having a child, and having a child under age 6 are positively and statistically significantly related to the probability that a woman has a wage-earning husband. African American, disabled, and own property income are all negatively related to the probability that a woman has a husband. All else equal, a woman is more likely to have a husband in the Midwest and South, relative to the East. To identify the system of equations, we include variables in the probit equation that predict marital status but not the earnings of the husband. Like Schultz (1994)

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[35]Duncan and Hoffman (1990) use a PSID sample to predict expected earnings (including the earnings of potential spouses) for teenagers using a sample of women at age 26.

[36]These regressions do not include women under age 18 or over 65 (because of the low probability of their husbands participating in the labor force). In addition, this sample does not include women whose husbands are self-employed because of the difficulty of interpreting reported earnings of self-employed persons.

we include the sum of the maximum AFDC and food stamp benefits for a family of three in the woman's state. A woman may be less likely to marry someone with earnings if high welfare benefits are available. This variable has the expected negative sign, but is insignificant. In addition, we include the percentage of the state's population who report being a member of a fundamentalist religious organization (see Winkler, 1994) with the hypothesis that if many people belong to fundamentalist organizations, they may avoid "living in sin" by marrying. The coefficient on this variable has an unexpected negative sign but is statistically insignificant.

In the second stage of the regression, all else equal, education, age, and having a child under age 6 are positively correlated with the husband's earnings. Hispanic, African American, disabled, and own property income are negatively related to the husband's earnings. Husband's earnings in the Midwest, South, and West are lower than the earnings in the East. Figure 3 shows the distributions of predicted earnings relative to actual earnings for the sample of married couples and unmarried women. At the median, predicted values are very close to the actual values for married women. The predicted earnings for the husbands of unmarried women fall below the predicted earnings for married women, suggesting that the observed and unobserved characteristics of unmarried women are likely to attract spouses with earnings below their married counterparts.

Given these predicted earnings, we use the assumptions made in the previous section and the following assumptions about the potential husbands of single women to calculate their tax and transfer penalties:

1. The husband's predicted annual earnings are divided evenly over the year, assuming he works full time.

2. The husband has no assets or unearned income.[37]

[37]These could also be predicted for future versions of this research.

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3. If the woman is the natural mother of the children, the husband is the father of the children (or, legally adopts the children upon marriage).[38]

Figure 4 shows the distributions of changes in transfer benefits, tax liability, and their combination when we simulate marriage among our sample of unmarried women. Like the married sample, we classify families by the ratio of the woman's reported income to the poverty line. We divide the change in transfer benefits, tax liability, and their combination by the families' *potential income when separated*.[39] This income is the sum of the woman's potential income and her predicted husband's potential income. As in the married sample, we choose initial income as the normalizing factor because we are interested in the change in tax liability and transfer income relative to their initial status. Appendix Table 4 shows the means and standard deviations of selected variables for each of the income groups.

Poor Families

The top panel of Figure 4 shows that the median poor couple faces a decline in transfer payments equal to 22 percent of income if married. Over 25 percent of all poor families face a loss of transfers in excess of 30 percent.[40] The tax system partially offsets this loss for most families. The median family faces a decrease in tax liability equal to 7.1 percent of income, and the median net change is 15 percent of income. Still, even with the offset, 25 percent of the sample faces net losses in excess of 22 percent of income.

[38]The calculated transfer penalties could be smaller if we assumed the women married someone other than the father of the children, primarily because of AFDC's liberal treatment of unrelated cohabiting males.

[39]"Potential income" is after-tax, after-transfer income assuming that all families participate in all of transfer programs for which they are eligible.

[40]Almost 88 percent of the poor families face a loss of food stamps, with average penalties equal to 7 percent of their income, and about 83 percent face a loss of AFDC, with an average decline equal to 17 percent of income.

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Table 5A shows that, like the sample of married couples, most (95 percent) poor unmarried women and their potential spouses have higher joint transfer benefits if they are unmarried.[41] In addition, the hypothetical example given in Section IV appears to be quite typical for a poor family. About 81 percent of the families face a decline in transfers if they marry, a decline that is mitigated by a decline in tax liability. The average decline in transfer benefits for these families is 25 percent of income and the average decline in tax liability is 8 percent of income, making the average net loss 17 percent. The 15 percent of the sample whose loss of transfer benefits is exacerbated by an increase in tax liability if they married, on average, face relatively smaller losses. The average net loss for these families is 11 percent. As in the sample of married couples, the income tax highly subsidizes marriage for those facing the largest losses in transfer benefits.

Figure 5 shows that the $10.5 billion aggregate loss of transfer benefits if the women marry their potential spouses is partially offset by a $3 billion reduction in tax liability. This net penalty is a reduction equal to 15 percent of these families' aggregate income.

Near-Poor Families

Near-poor families in this sample face small declines in their transfers if they marry, and the tax system is likely to exacerbate the loss of transfer benefits. The median change in transfers 0.08 percent, is so small it is not visible on Figure 5 and even at the 75th percentile is only 2.3 percent of income. The median family is penalized by the tax system, but only at 2.6 percent of income. The median net change is 3.7 percent of income.

The most striking result in Table 6A is that the tax system penalizes marriage among 88 percent of the near-poor families. Over 80 percent of those facing losses in transfer benefits if they marry are also

[41]The income tax system is never marriage neutral in the sample of unmarried women, because of our assumption that all potential husbands have earnings. This assumption also results in the absence of families whose transfer benefits increase with marriage. If the spouse had no income, AFDC or food stamp benefits may increase when he is added to the unit.

TABLE 5

Simulation of the Effects of Marriage in a Sample of Poor Unmarried Women (N=561)

A. Percentage of Sample affected by Interaction between Transfer and Tax Systems

		Change in Tax Liability		
		Increases if Marry	Decreases if Marry	All
Change in Transfer Benefits	None	2.50	1.60	4.10
	Decrease if Marry	14.97	80.75	95.72
	Increase if Marry	0.00	0.18	0.18
	All	17.47	82.53	100.00

B. Mean Changes in Tax Liability, Transfer Benefits and Their Combination[a]

		Change in Tax Liability		
		Increases if Marry	Decreases if Marry	All
Change in Transfer Benefits	None	-3.3 *0* **-3.3**	6.7 *0* **6.7**	0.5 *0* **0.5**
	Decrease if Marry	-2.9 *-8.3* **-11.1**	7.9 *-25.2* **-17.3**	6.3 *-22.8* **-16.5**
	Increase if Marry	. . **.**	5.2 *5.9* **11.0**	5.2 *5.9* **11.0**
	All	-2.9 *-7.1* **-10.0**	7.8 *-24.7* **-16.9**	6.1 *-21.9* **-15.8**

Note: Shaded areas indicate that the couple has disincentive to marry.

[a]The top number in each cell is the change in tax liability, the middle, *italicized* number is the change in transfer benefits and the bottom, **bolded** number is the net change resulting from a marriage. As in Figure 2, a positive number represents a gain from marriage: transfer payments are higher when married than separated and tax liabilities are lower when married. All changes are divided by potential income when separated.

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TABLE 6
Simulation of the Effects of Marriage in a Sample of Near-Poor Unmarried Women
(N=441)

A. Percentage of Sample affected by Interaction between Transfer and Tax Systems

		Change in Tax Liability		
		Increases if Marry	Decreases if Marry	All
Change in Transfer Benefits	None	49.89	2.95	52.83
	Decrease if Marry	38.32	8.84	47.17
	Increase if Marry	-	-	-
	All	88.21	11.79	100.00

B. Mean Changes in Tax Liability, Transfer Benefits and Their Combination[a]

		Change in Tax Liability		
		Increases if Marry	Decreases if Marry	All
Change in Transfer Benefits	None	-2.8 *0* **-2.8**	2.0 *0* **2.0**	-2.5 *0* **-2.5**
	Decrease if Marry	-3.7 *-3.4* **-7.2**	4.9 *-14.4* **-9.5**	-2.0 *-5.6* **-7.6**
	Increase if Marry	. . **.**	. . **.**	. . **.**
	All	-3.2 *-1.6* **-4.8**	*4.3* *-11.4* **-7.1**	-2.3 *-2.8* **-5.1**

Note: Shaded areas indicate that the couple has disincentive to marry.

[a]The top number in each cell is the change in tax liability, the middle, *italicized* number is the change in transfer benefits and the bottom, **bolded** number is the net change resulting from a marriage. As in Figure 2, a positive number represents a gain from marriage: transfer payments are higher when married than separated and tax liabilities are lower when married. All changes are divided by potential income when separated.

facing an increase in tax liability. These results may not be too surprising, considering that we defined relative poverty based on the woman's income, and therefore most (95 percent) of the near-poor women work and are predicted to marry someone with income similar to theirs, leading to increases in joint tax liability. Although the tax system is likely to penalize marriage for most near-poor families, the average net change never exceeds 10 percent of income.

Figure 5 shows that the $1.3 million aggregate loss of transfer benefits facing unmarried women if they marry their potential spouse is compounded by an aggregate increase in tax liability of $1.1 billion. This net loss is equal to 5 percent of total income.

Nonpoor Families

The interaction of the tax and transfer programs provides little financial incentive or disincentive for unmarried, nonpoor women to marry, as shown in Tables 7A and 7B. Over 98 percent face no change in transfer benefits if they marry. The tax system penalizes marriage among 93 percent of the families in this sample, but fewer than 5 percent face a tax or marriage subsidy or penalty in excess of 5 percent of their income.

VII. CONCLUSIONS

Tax liability and transfer payments may constitute a large fraction of a low-income family's total income. Both have the potential to vary significantly with a change in marital status or living arrangements, creating substantial penalties or subsidies for marriage. Until now, no study has quantified the penalties imposed by the transfer system or the interaction of the tax and transfer systems. Using data from the SIPP and a microsimulation model, we characterize the marriage penalties and subsidies imposed by the tax and transfer systems for samples of married and unmarried women.

TABLE 7
Simulation Marriage in a Sample of Nonpoor Unmarried Women
(N=205)

A. Percentage of Sample affected by Interaction between Transfer and Tax Systems

		Change in Tax Liability		
		Increases if Marry	Decreases if Marry	All
Change in Transfer Benefits	None	92.68	1.46	98.05
	Decrease if Marry	5.37	0.49	1.95
	Increase if Marry	-	-	-
	All	94.15	5.85	100.00

B. Mean Changes in Tax Liability, Transfer Benefits and Their Combination[a]

		Change in Tax Liability		
		Increases if Marry	Decreases if Marry	All
Change in Transfer Benefits	None	-3.3 *0* **-3.3**	0.3 *0* **0.3**	-3.3 *0* **-3.3**
	Decrease if Marry	-2.9 *-2.0* **-5.0**	5.3 *-0.6* **4.7**	0.3 *-1.4* **-1.1**
	Increase if Marry	. . **.**	. . **.**	. . **.**
	All	-3.3 *-0.09* **-3.4**	3.9 *-0.4* **3.5**	-3.0 *-0.1* **-3.1**

Note: Shaded areas indicate that the couple has disincentive to marry.

[a]The top number in each cell is the change in tax liability, the middle, *italicized* number is the change in transfer benefits and the bottom, **bolded** number is the net change resulting from a marriage. As in Figure 2, a positive number represents a gain from marriage: transfer payments are higher when married than separated and tax liabilities are lower when married. All changes are divided by potential income when separated.

Our results suggest that the transfer system penalizes cohabitation and the tax system subsidizes marriage for most poor families. While the tax subsidy for marriage may mitigate the high penalties imposed by the transfer system, the remaining penalties are still large and create strong financial incentives for low-income families to avoid or conceal cohabitation. For many near-poor families, the tax system may exacerbate the transfer penalty by also penalizing marriage.

Policy changes since the time of our data suggest that there is a dissatisfaction with the marriage neutrality (or non-neutrality) in the transfer and income tax systems. After October 1990, all states were required to offer AFDC-UP programs. In addition, at least 32 states had welfare demonstrations that relaxed AFDC-UP's restrictions on past work history and maximum work hours allowed. This effort was intended to increase the number of married couples who were eligible for AFDC, especially the number of young couples who may not have had previous work experience. In addition, the EITC has been greatly expanded from its 1990 level, the maximum payment in 1996 being $3,400. Proponents of the EITC argue that this expansion will improve the ability of the EITC to mitigate the loss of transfer benefits associated with marriage. Although this is true for single-earner couples, the expanded EITC provides greater marriage disincentives for the near-poor or, more generally, for two-earner couples.

The passage of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 will further change how the tax and transfer systems interact. At least two of its changes have obvious implications. More single mothers will leave the welfare rolls and become eligible for the EITC. The non-neutrality of the EITC with respect to marriage may become more significant for these families. In addition, the legislation's provisions for enforcing child support potentially reduce the incentives for marriage and the need for welfare participation.

At least three obvious extensions emerge from this work. First, it is important to consider whether the size of the penalty has a behavioral effect on family structure decisions. There is a great deal of variation in the marriage penalty and, while other studies have considered how the tax system or the

transfer system might affect family structure, to our knowledge no one has considered how the interaction of the two might affect decisions to marry. Measuring changes in disposable income is the second obvious extension to this work. While this paper measures the financial changes imposed by government programs and taxes associated with a change in family structure, expenses, such as child care and housing expenses, are likely to change even without changes in labor supply. The final extension would be to incorporate labor supply choices into the family structure decision. In the current analysis, we assume that labor supply does not change with family structure and calculate the tax and transfer penalties that families face if they maintain their current labor force status. Allowing labor supply to change following a change in family structure would more fully define the financial choice before the family and allow family members to respond to the labor supply incentives that arise from marriage penalties.

APPENDIX 1
Microsimulation Model

The microsimulation model contains detailed modules for AFDC, food stamps, SSI, the federal income tax, state income taxes, and the payroll tax. All modules have a common structure: each defines the unit of analysis for tax and transfer programs, performs income and assets tests or determines adjusted gross income and taxable income, and determines benefits or taxes. The model uses monthly data from the 1990 SIPP Panel for the period January to December 1990. Transfer program eligibility and benefits are calculated on a monthly and state and federal taxes are calculated by adding incomes over the calendar year.

SSI

Categorically eligible SSI units must have countable assets and income below federal limits. Countable income is calculated by excluding $20 of monthly income from any source of income and $65 plus an additional one half of the remaining earnings from total income. The federal government sets a national SSI benefit standard for individuals and couples. Benefit levels depend on whether the unit is eligible as an individual, a couple, or an individual living with an ineligible spouse. The income of an ineligible spouse is *deemed* available to an eligible person. Some states supplement the national SSI benefit standard to cover daily expenses. The model, according to federal regulations, calculates benefits as the difference between the combined federal and state benefit standards and countable income. See Appendix Table 1A for the 1990 parameters of the transfer programs.

AFDC

The model captures the federal government's broad rules on filing units and calculating income and assets; the states in addition set many eligibility rules and benefit levels. Filing units include

deprived children and their natural or adoptive parents (regardless of parent's marital status) or guardian. The model identifies stepparents. Stepparents are included in the unit in seven states, and in other states a portion of the stepparent's income is deemed to the unit. In the model, we assume stepparents are included in the unit in the seven states that require their inclusion.

Families with two parents have additional restrictions. The unemployed parent must have previous labor force attachment and cannot work more than 100 hours per month to be considered unemployed. In addition, some states that adopted AFDC-UP programs following the 1988 Family Support Act limit benefits to 6 months.

AFDC units must have assets less than $1,000. In addition, each unit must pass two income tests. Total income must be below 185 percent of the *state's* determined need standard, based on family size, and countable income cannot exceed the *state's* payment standard. Countable income is total income minus $90 per month for work expenses, up to $175 per child per month for child care expenses, and, for the first four months of work, $30 plus an additional one-third of remaining earnings. After four months of working, earnings are taxed at 100 percent and the $30 deduction is available for only eight more months. Because SIPP does not identify how long a family has been receiving AFDC, the model assumes the tax rate on earnings is 100 percent for all months. States determine benefits in a variety of ways based on their payment standards and countable income. The model captures this variation.

Food Stamps

The food stamp program provides to low-income families coupons that are redeemable for food items. The food stamp unit is all members of a household that prepare food together, regardless of legal relationship. Because SIPP does not identify food preparation units, the model assumes families are the unit. Families composed entirely of AFDC or SSI recipients are automatically eligible for food stamps and therefore do not need to pass asset or gross income tests. All other units must have "countable" assets and monthly income below federal limits. That is, monthly gross income (which includes AFDC or

SSI) cannot exceed 130 percent of the federal poverty guidelines. Countable income (gross income less a standard deduction of $127 and 20 percent of earned income) may not exceed the federal poverty guidelines. The federal government sets national maximum food stamp allotments that increase with family size. A unit's benefit is determined by the appropriate maximum allotment less 30 percent of counted income.

Federal Income Tax

The model's federal tax module first determines the appropriate tax-filing unit. All subfamilies are treated as potentially separate (from the primary family) tax-filing units. Married couples are assumed to file joint tax returns.[42] Unmarried people without dependents file single tax returns, and unmarried people with dependents file head-of-household returns. After filing units are determined, the model generally follows the 1040 tax schedule. SIPP does not provide detail for calculating adjustments to total income, so adjusted gross income (AGI) is total income. Taxable income is calculated by subtracting from AGI the standard deduction (for all taxpayers) and exemptions.[43] Taxes before credits are calculated using the appropriate tax schedules for each filing unit. Tax liability is adjusted by nonrefundable credits for the elderly and disabled and the refundable EITC. See Table 1B for the 1990 tax parameters.

The EITC, in 1990, was available to filing units with children and positive AGI. The 1990 EITC is calculated at 14 percent of AGI up to AGI of $6,810 and a maximum EITC of $953. The EITC is phased out at a rate of 10 percent for AGI above $10,750, to a maximum AGI of $20,264. If a filing unit's tax liability is greater than tax liability, the difference is refunded.

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[42]Married persons may file married separate returns, but in 1990 only 4.5 percent (1.9 percent) of married couples (all filing units) filed married separate returns. Married separate returns are beneficial for families in which one spouse has very high deductions, such as medical expenditures.

[43]We cannot identify filers, itemizers, or the amount of itemizations without the tax topical modules. For this reason, tax liabilities will be overstated for those filing units that would itemize (particularly high-income households).

State Income Taxes

State tax liabilities are based on the tax laws of the family's state of residence in December 1990. The model assumes that the filing status for state income taxes is the same as for federal taxes. This assumption does not reflect the fact that 11 states allow couples to file combined separate returns to mitigate potential marriage penalties. The model reflects the fact that states have different definitions of taxable income, deductions, and exemptions. Tax liability is calculated using brackets and rates for each state and filing status. The model captures special joint rate schedules in ten states that substantially eliminate the marriage penalty.

Payroll Taxes

All workers in the United States are subject to a payroll tax to fund Social Security and Medicare expenditures. The tax is nominally paid by both the employee and the employer in equal shares. The model assumes that the payroll tax is borne entirely by the employee and, therefore, increases reported gross income by (1–0.765), then uses 0.0765 percent of the gross wage as the employer's share and 0.0765 of reported wage as the employee's share.

APPENDIX TABLE 1
Transfer and Tax Parameters

A. 1990 Transfer Program Parameters

Program	Unit	Standard Deduction	Earnings Deduction	Family Structure
AFDC	Deprived children and natural or adoptive parents	$175/mo/child for child care $90/mo for work expenses	$30 + 1/3 remaining earnings for 1st 4 months $30 for 8 additional months	Categorically eligible if at least 1 parent is absent, incapacitated, or unemployed
Food Stamps	Individuals who prepare food together (subfamilies in model)	$112	20%	Everyone who prepares food together
SSI	Disabled, elderly, or blind individual or couple	$20 any income	$65 minus half (remaining earnings)	Income of ineligible spouse is deemed

B. Tax Parameters for 1990

Marginal Tax Rate	Married Joint	Married Separate	Married Single	Head of Household
15%	$0–$32,450	$0–$16,225	$0–$19,450	$0–$26,050
28%	$32,450–$78,400	$16,225–$39,200	$19,450–$47,050	$26,050–$67,200
33%	$78,400–$162,770	$39,200–$123,570	$47,050–$97,620	$67,200–$134,930
28%	>$162,770	>$123,570	>$97,620	>$137,930
Standard Deduction	$5450	$2725	$3250	$4750

*The personal exemption is $2,050 per person regardless of filing status.

(table continues)

APPENDIX TABLE 1, continued

C. EITC Parameters

	Credit Rate	Phase-In Range	Max. Credit	Phase-out Rate	Phase-out Range
1990 EITC	14%	$0–$6,810	$953	10%	$10,750–$20,264
1996 EITC					
1 Child	34	$0–$6,000	$2,040	15.98	$11,000–$23,760
2 Children	40	$0–$8,425	$3,370	21.06	$11,000–$27,000
No Children	7.65	$0–$4,000	$306	7.65	$5,000–$9,000

APPENDIX TABLE 2
Means and Standard Deviations of Selected Variables in the Sample of Married Couples, by Income-to-Poverty Line Ratio

	Poor	Near Poor	Non-Poor	All
Reported income/poverty line	<1	1–2	>2	
Unweighted n	322	1265	2092	3679
Weighted n (millions)	1.38	6.04	9.72	17.1
Age of wife	32.5 (6.32)	33.1 (5.87)	35.4 (5.4)	34.4 (5.7)
Number of children	2.86 (1.37)	2.15 (0.94)	1.75 (0.75)	1.98 (0.94)
Reported income	9819 (18921)	21381 (4947)	39763 (13441)	30874 (15876)
Simulated married income	11224 (19031)	21547 (4910)	39801 (13444)	31067 (15714)
Simulated separated income	14076 (14076)	24094 (5222)	40571 (13413)	32621 (15254)
Change in transfer benefits if separate (>0 if increase)	4019 (3085)	3236 (688)	1182 (2247)	2136 (2810)
(Change/simulated married income)*100	39.3 (174.7)	16.0 (15.1)	3.4 (6.6)	10.8 (51.5)
Change in tax liability if separate (>0 if increase)	1167 (1731)	688 (1406)	403 (2356)	565 (2032)
(Change/simulated married income)*100	7.6 (6.7)	3.3 (6.5)	1.1 (5.8)	2.4 (6.4)
Combined change in transfer benefits and tax liability if separate (>0 if net increase)	2852 (2930)	2548 (2433)	780 (2154)	1571 (2496)
(Change/simulated married income)*100	31.7 (174.8)	12.7 (12.8)	2.4 (5.7)	8.38 (51.0)

Note: All income amounts are annual 1990 dollars.

APPENDIX TABLE 3
Selection Equations for Predicting Earnings of Potential Husbands

	Earnings Equation		Probit Equation	
	Dependent Variable = ln(husband's annual earnings)		Dependent Variable = 1 if wage-earning husband, 0 otherwise	
Independent Variable	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error
Grade completed	0.032	0.023	0.070**	0.031
Grade squared	0.0002	0.0007	-0.001	0.001
Age	0.185**	0.008	0.147**	0.010
Age squared	-0.002**	0.00008	-0.002**	0.0001
Age*grade	0.0007**	0.0003	-0.0004	0.0004
African American (yes=1)	-0.662**	0.033	-0.809**	0.039
Hispanic (yes=1)	-0.259**	0.038	-0.038	0.054
Urban (yes=1)	0.246**	0.023	0.005	0.033
Disabled (yes=1)	-0.303**	0.036	-0.287**	0.045
State unemployment rate	0.008	0.011	0.125**	0.043
Midwest (yes=1)	-0.048*	0.029	0.105*	0.056
South (yes=1)	-0.91**	0.027	0.037	0.044
West (yes=1)	-0.113**	0.030	-0.007	0.016
Children (yes = 1)	0.017	0.025	0.218**	0.034
Children < 6 year (yes=1)	0.194**	0.028	0.529**	0.043
Max. AFDC+food stamps			-0.0003	0.0002
Percentage fundamentalist			-0.0002	0.002
Own property	-0.0004**	0.0001	-0.002**	0.0002
Own property^2	5.78e-08**	2.45e-08	5.08e-07**	7.23e-08
Constant	5.404**	0.264	-0.309**	0.383
Lambda			0.289	0.024

** Significant at the 5 percent level. * Significant at the 10 percent level.

APPENDIX TABLE 4
Means and Standard Deviations of Selected Variables in Sample of Unmarried Women by Income-to-Poverty Line Ratio

	Poor	Near Poor	Nonpoor	All
Reported income/poverty line	<1	1–2	>2	
Unweighted n	561	441	205	1207
Weighted n (millions)	2.3	1.8	0.83	4.9
Age of wife	30.6 (6.7)	33.3 (6.1)	36.5 (5.7)	32.5 (6.7)
Number of children	2.1 (1.2)	1.5 (0.7)	1.4 (0.6)	1.8 (1.0)
Unmarried woman's reported income	7429 (3100)	13982 (3392)	25648 (7377)	12847 (7730)
Simulated married income	17622 (4883)	27912 (6432)	43442 (9393)	25660 (11250)
Simulated separated income (includes predicted husband's income)	20994 (5187)	29276 (5986)	44892 (9940)	27988 (10678)
Change in transfer benefits if separate (>0 if increase)	-4523 (2890)	-739 (1642)	-34 (214)	-2411 (2998)
(Change/simulated married income)*100	-21.9 (12.1)	-2.8 (6.3)	-0.1 (0.7)	-11.4 (13.6)
Change in tax liability if separate (>0 if increase)	1152 (996)	-624 (817)	-1415 (994)	82.7 (1405)
(Change/simulated married income)*100	6.1 (5.2)	-2.25 (3.12)	-3.0 (2.1)	1.6 (5.6)
Combined change in transfer benefits and tax liability if separate (>0 if net increase)	-3371 (2433)	-1364 (1402)	-1450 (999)	-2328 (2156)
(Change/simulated married income)*100	-15.8 (10.0)	-5.1 (5.4)	-3.1 (2.2)	-9.8 (9.6)

Note: All income amounts are annual 1990 dollars.

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