EFFECTS OF MARRIAGE PENALTY RELIEF TAX POLICY ON MARRIAGE TAXES AND MARGINAL TAX RATES OF COHABITING COUPLES[*]

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This paper examines how marriage penalty relief tax provisions affect potential marriage taxes and marginal tax rates of cohabiting couples. We find that while these policies improve horizontal equity between cohabiting and married couples, the effect varies substantially by income. For example, tax neutrality rates fall among low-income couples because EITC marriage penalty relief causes many to switch from a tax neutral to a marriage bonus position. In addition, most cohabiting individuals would face a different marginal tax rate upon marriage, and marriage penalty relief policies reduce the proportion of individuals in specific income groups who would experience an increase in marginal tax rates when filing joint instead of separate returns.

Keywords: taxes, marriage, cohabitation

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I. INTRODUCTION

This paper analyzes how marriage penalty relief tax provisions impact potential marriage taxes and marginal tax rates of cohabiting couples by examining their federal income tax returns. Even though both married and cohabiting couples may pool resources and have similar living arrangements, a couple may pay different amounts of income tax and face different marginal tax rates depending on whether they are married and file a joint return or if they are unmarried and file separate returns. Because the tax system is not neutral with respect to marriage, tax provisions aimed at providing marriage penalty relief will affect the outcome of horizontal equity between cohabiting couples and otherwise equivalent married individuals.[1]

A number of tax changes were enacted in the 2000s to reduce the marriage tax, which occurs when a couple has a higher tax liability if they are married and file jointly than if they are unmarried and file separate returns. The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) increased the standard deduction for married-filing-jointly couples to twice that for single filers, increased the lengths of the 10-percent and 15-percent rate brackets for married couples to twice those for single filers, and raised the starting point of the earned income tax credit (EITC) phase-out range for joint filers by $3,000. The American Recovery and Reinvestment Act of 2009 (ARRA) further expanded the EITC for married couples filing jointly by increasing the starting point of the phase-out range for joint filers to $5,000 greater than that for unmarried taxpayers.

In this study, we refer to marriage bonuses (or penalties) as the estimated decrease (or increase) in federal income tax liability for cohabiting couples if they were to file as married

[1] Beginning in 2013, same-sex couples who are legally married are treated as married under federal tax law. Currently, not all states recognize same-sex marriage, which prevents some same-sex couples from getting legally married. The disparate treatment of same-sex compared to opposite-sex couples is another area of policy interest.

filing jointly. We estimate the effect of marriage penalty relief policies enacted in the 2000s on marriage penalties and bonuses for cohabiting couples. In addition, we examine how marginal tax rates change among cohabiting couples if they were to file joint returns and analyze how this change is affected by marriage penalty relief policies. Recent data shows that cohabitation of unmarried, opposite-sex couples has grown dramatically, up 18 percent from 6.4 million couples in 2007 to 7.6 million in 2011.[2] Although the marriage penalty relief policies do not directly alter unmarried, cohabiting individuals' tax liabilities, the policies have tax equity implications and affect the tax incentives of this growing population.

We use administrative tax return data to identify couples who are cohabiting in the year prior to filing a joint return. For these couples, we estimate the tax consequence of marriage both with and without marriage penalty relief policies by comparing the income tax from their separately filed returns to the tax they would owe if they were married and filed jointly. Using administrative tax return data has the advantage of providing all the variables needed to estimate tax liability. Due to data limitations, researchers have to make assumptions about the allocations of dependents and various sources of income and expenses of married couples in order to estimate married couples' tax liability as unmarried persons, or impute spouses' incomes and expenses for single filers to estimate their potential joint tax liability (Feenberg and Rosen, 1995; Alm and Whittington, 1996; Bull et al., 1999; Eissa and Hoynes, 2000; Holtzblatt and Rebelein, 2000; Gillette et al., 2005; Gillette et al., 2006). Because couples in our study already shared a residence, the observed incomes and expenses should more accurately depict the arrangements of married couples than imputed data.

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[2] See United States Census Bureau *Table UC-1: Unmarried Partners of the Opposite Sex, by Presence of Children: 1960 to Present*, http://www.census.gov/hhes/families/data/cps2011.html. Due to a change in definition of cohabiting couples in 2007, data are not necessarily comparable pre- and post-2007.

This paper is one of a few studies that explicitly estimate taxes of cohabiting couples and only the second to our knowledge to investigate the effect of marriage penalty relief tax policies enacted in the 2000s. A study by Acs and Maag (2005) estimates potential marriage taxes of cohabiting couples using survey data and finds that marriage penalty relief tax policies enacted between 2003 and 2008 increased marriage bonus rates. However, they limit their analysis to lower income families and have to make a number of estimating assumptions for both unmarried and married taxes due to data limitations. Our paper also provides insight on how marriage penalty tax relief policies potentially impact cohabiting individuals' incentives to work upon marriage. Extensive literature has documented the elasticity of labor supply (See McClelland and Mok (2013) for a comprehensive literature review), and this paper adds to the literature by studying the incentive to work provided by the tax system for cohabiting couples in transition to marriage.

Based on tax return data for 2007, our results show that marriage penalty relief tax provisions substantially affect the predicted joint taxes of cohabiting couples. Under current law,[3] which includes marriage penalty relief policies, 39.0 percent of couples are predicted to have a marriage bonus and 46.4 percent are predicted to have a marriage penalty. Without marriage penalty relief policies, the percentage of couples in the bonus position would drop to 23.2 percent and the percentage in the penalty position would increase to 69.0 percent. Marriage penalty relief policies also reduce the average difference between predicted joint taxes and separately filed taxes, and increase the proportion of couples with no change in tax liability if filing a joint return. Although these results suggest that the policies improve the tax code's neutrality with respect to marriage, these changes are not uniform across income levels. Marriage

[3] Current law includes policies in existence in 2007 plus the additional 2009 expansion of earned income tax credit marriage penalty relief from $3,000 to $5,000 (deflated to 2007 dollars).

penalty relief policies increase the tax neutrality rate for those with adjusted gross income (AGI) between $30,000 and $200,000. In contrast, tax neutrality rates fall among couples with AGI below $30,000 because EITC marriage penalty relief policy causes many couples to switch from a tax neutral to a marriage bonus position.

Marriage tax relief policies also affect marginal tax rates faced by cohabiting individuals if they were to marry and file jointly. Splitting individuals within a couple into two groups, primary and secondary earners, we determine that marriage penalty tax relief increases the fraction of primary earners (up from 45.2 percent to 51.5 percent) and decreases the fraction of secondary earners (down from 82.9 percent to 77.3 percent) who would experience a change in marginal tax rates upon joint filing. Over 60 percent of secondary earners and less than 20 percent of primary earners would face higher marginal tax rates when filing jointly irrespective of the existence of marriage penalty relief policies, suggesting that a high proportion of secondary earners would face a work disincentive upon marriage. Further analysis shows that marriage penalty relief policies mitigate this work disincentive effect by reducing marginal tax rates of joint filers in specific income groups.

The paper is organized as follows. Section II reviews the literature. Section III describes the administrative data used in this study. Section IV provides analysis of the impact of marriage penalty relief policies on marriage bonuses and penalties as well as on marginal tax rates under joint filing. Section V concludes.

II. PREVIOUS LITERATURE

As discussed in Bull et al. (1999), studies typically estimate the tax change if married couples were to file separate instead of joint returns to calculate marriage tax penalties and bonuses.[4] Other studies examine the marriage tax for unmarried individuals and estimate the potential change in taxes and government transfers for single individuals or unmarried cohabiting couples if they were to get married. To estimate the marriage tax for unmarried individuals, researchers impute the potential spouse's income or focus on cohabiting couples, assuming that a cohabiting couple, if married, would maintain the same incomes and living arrangements. Alm, Whittington, and Fletcher (2002) determine that single individuals generally have a "singles tax," or pay more taxes than married couples with the same incomes. However, when taxes are adjusted for family size, they determine that the "singles tax" is generally reduced or even eliminated. Acs and Maag (2005) show that the proportion of low-income cohabiting parents subject to marriage penalties declines under 2008 tax law relative to 2003 tax law, and that cohabiting parents, regardless of whether they have a marriage penalty or bonus in the tax system, have lower TANF benefits if they get married. Lin and Tong (2012) use administrative tax data to identify cohabiting couples in the year prior to filing a joint return, and find that over 80 percent of cohabiting couples would experience a change in tax liability if they were to file as married couples. Our approach to estimating predicted marriage taxes of cohabiting couples is similar to Acs and Maag (2005) and the same as in Lin and Tong (2012).

Another dimension in which marriage tax policy could impact couples is by altering work incentives. This study contributes to the literature by estimating how marriage penalty relief policies alter the marginal tax rates faced by individuals within a cohabiting couple upon

[4] For example, Rosen (1987) and Feenberg and Rosen (1995) evaluate the effect of the Tax Reform Act of 1986 (TRA86) and the Omnibus Budget Reconciliation Act of 1993 (OBRA93) on the magnitudes of marriage penalties. Holtzblatt and Rebelein (2000) evaluate the effect of the EITC on marriage penalties. Alm and Whittington (2001) evaluate various tax proposals considered by the Bush Administration that would have had direct or indirect effects on marriage penalties and bonuses. Gillette, Holtzblatt, and Lin (2005) show that an unindexed alternative minimum tax would eliminate the marriage penalty relief provided in the EGTRRA and Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA).

marriage. Although recent studies find that the labor supply elasticity of married women has become more inelastic over time as female labor force participation has grown (Blau and Kahn, 2007; Heim, 2007), married women have been found historically to have relatively elastic labor supply compared to married men (Blundell and MaCurdy, 1999). Studies also show that married women alter labor supply in response to changes in tax policy. For example, Eissa (1995) exploits variation generated by the Tax Reform Act of 1986 (TRA86) to show that married women's labor supply is responsive to changes in the top marginal tax rate, particularly along the extensive margin. In contrast, Moffitt and Wilhelm (2000) use the TRA86 to show that the labor supply of high-income married men is unresponsive to changes in taxation using repeated cross-section data from the Survey of Consumer Finances. LaLumia (2008) uses cross-state variation in the presence of community property laws to show that changing from separate to joint taxation in 1948 reduced employment rates of married women and had no significant relationship with employment rates of married men. Eissa and Hoynes (2004) study how expansions of the EITC between 1985 and 1996 affected labor force participation of married couples, and demonstrate that EITC expansions caused labor force participation of married women to fall and had no significant impact on that of married men.

III. DATA

For this study, we use federal individual income tax return data from the Internal Revenue Service's Compliance Data Warehouse (CDW). CDW contains the population of tax returns, information returns generated by third parties such as the W-2 and Form 1099s, and date of birth and gender from Social Security Administration data. We start with a 10 percent random sample of married filing jointly tax returns for tax year 2008.[5] We identify which portion of this

[5] Random sampling was conducted based on the last three digits of the primary filer's social security number.

sample is newly married in 2008 and previously cohabiting based on the filing status and zip code reported on their 2006 and 2007 tax returns where either spouse is a primary filer.

Cohabiting couples in 2007 are identified in two ways. First, a couple is cohabiting if the following three conditions hold: 1) each person files as either single or head of household in tax years 2006 and 2007, 2) the 12 digit zip code on their 2006 returns matches, and 3) the 12 digit zip code on their 2007 returns matches. The 12 digit zip code is the U.S. Postal Service's delivery point bar code generated by algorithms using street, city and state address.[6] Because tax returns for a particular year are generally filed in the spring of the following year, the address on the 2007 tax return might not necessarily reflect the place of residence during 2007. As a result, we define couples as cohabiting if there is a two-year match in zip code—including tax year 2006 returns (filed in 2007) and tax year 2007 returns (filed in 2008)—to be more confident that we identify couples who were living together in 2007. The second group of cohabiting couples consists of couples of whom one person files as single or head of household and claims the future spouse as a dependent on their 2007 tax return. For a taxpayer to claim a non-relative as a dependent, the individual must live with the taxpayer for the entire year, the taxpayer must provide for at least half of the non-relative's total support, and the non-relative cannot have gross income greater than the dependent exemption amount, which was $3,400 for 2007.[7] A total of 41,981 cohabiting couples are identified.

Our sample consists of a particular segment of the cohabiting couple population, namely couples who marry and file tax returns in the following year.[8] To understand how our sample compares to the overall cohabiting couple population, we compare total income, relative income,

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[6] Documentation on how the 12 digit zip code is generated may be found at the following link: https://ribbs.usps.gov/cassmass/documents/tech_guides/TECHNICAL_GUIDES/.

[7] Additional conditions must be met to be claimed as a dependent. Details may be found in IRS Publication 17.

[8] This restriction ensures selection of cohabiting couples instead of roommates or relatives who share a residence.

presence of children and number of earners between our sample using tax data and cohabiting couples in the U.S. Census American Community Survey (ACS) data for 2007. We define income as the sum of earnings and investment income in the ACS data, where earnings include wages, business income and farm income, and investment income includes interest, dividends and rental income. We define total income in the tax data as the sum of wages, Schedule C income (business income), Schedule F income (farm income), taxable interest, taxable dividends, and Schedule E income (rental and partnership income).[9]

The characteristics listed in Table 1 look similar across the two samples with the following exceptions. First, the tax data sample has a higher share of couples with two earners at 77.0 percent compared with 74.5 percent in the ACS sample. Second, the tax data sample has a higher share of couples with relatively equal incomes. The share of secondary earners contributing 40-50 percent to total income is 31.0 percent in the tax data sample compared with 28.9 percent in the ACS sample. Third, the income distributions show that there is a higher share of couples with incomes above $50,000 in the tax data than in the ACS sample. These differences are likely driven by our sampling of couples, which requires at least one individual to have filed a tax return.[10] Since each of these characteristic differences suggests that the tax data should show higher marriage penalties than the representative sample of cohabiting couples in the ACS,[11] there is little evidence that limiting our analysis to cohabiting couples who eventually marry will cause our results to be biased toward marriage bonuses.

[9] Earnings and investment income are each bottom coded at -$9,999 in the ACS data. To make the tax data income comparable to that from the ACS data, the sum of wages, Schedule C, and Schedule F income and the sum of taxable interest, taxable dividends, and Schedule E income are each bottom coded at -$9,999.
[10] Our tax sample therefore does not include couples where neither filed a tax return in 2007, potentially due to having incomes below the filing threshold.
[11] See Table 4 and the related discussion for characteristics associated with marriage penalties.

Table 2 contains summary statistics of the cohabiting couples' separately filed tax returns for tax year 2007. Half of the sample consists of couples where both individuals filed as single in 2007. Twenty-three percent of the couples have one single filer and one head of household filer, and 7 percent have two head of household filers. The remaining 19 percent of the sample consists of one-filer couples where one person filed as single or head of household and claimed the future spouse as a dependent. The median adjusted gross income (AGI) among secondary earners is $18,708 and among primary earners is $40,387.[12] The median fraction of income from secondary earners is 32 percent.[13] While 22 percent of the couples have one person making less than 5 percent of the family's total AGI, 31 percent of the couples have relatively equal incomes between the two partners, with the secondary earner contributing 40 to 50 percent to the family's total AGI. In addition, 77 percent of the couples are dual-earner couples and 21 percent are one-earner couples. The remaining 2 percent of the couples do not have earned income. Forty-five percent of the couples report having dependent children. Nine percent of the sample consists of couples where both individuals report having dependent children. The average age of the primary taxpayers is 35 and the average age of the secondary taxpayers is 33.[14]

We use the tax calculator developed by Bakija (2009) to compute tax liability on the individuals' separately filed returns for tax year 2007 and the couples' potential taxes under joint filing. Table 2 contains means of cohabiting couples' combined tax variables under separate filing. On average, the combined income tax liability of the cohabiting couples is $8,063. The average tax before credits is $9,389. The average total child tax credit claimed is $468, which

[12] To preserve the confidentiality of taxpayer data, medians in this paper are computed as the average value over the middle 10 observations.
[13] Couples of whom one or both individuals report having negative AGI on their separately filed returns and couples with zero AGI are excluded from the calculation.
[14] Individuals with missing ages or ages calculated to be less than 15 or greater than 100 were coded as having the median age of the remaining sample.

includes the non-refundable and refundable portions. On average, cohabiting couples claim an EITC of $808.

IV. ANALYSIS

In this study, we estimate the impact of marriage penalty relief policies enacted between 2001 and 2009 on potential marriage taxes and marginal tax rates of cohabiting couples by examining the following policies:

1. Tax Bracket Marriage Penalty Relief expanded the lengths of the 10-percent and 15-percent brackets of married-filing-jointly couples from 167 percent to 200 percent of the lengths of those for single filers. For tax year 2007, repealing this provision would have reduced the 10-percent and 15-percent bracket end points for joint filers from $15,650 to $13,068 and from $63,700 to $53,190, respectively. Because changes to head of household tax brackets are not part of marriage penalty relief, we assume that the head of household tax brackets remain unchanged if tax bracket marriage penalty relief is repealed.[15]
2. Standard Deduction Marriage Penalty Relief expanded the married filing jointly standard deduction from 167 percent to 200 percent of that for single filers. Repealing this provision in 2007 would have reduced the joint standard deduction from $10,700 to $8,900.
3. EITC Marriage Penalty Relief extended the maximum amount of income at which married-filing-jointly filers are eligible for the maximum EITC by $5,000 (in 2009 dollars) greater than that for unmarried filers. Starting the EITC phase-out at higher

[15] The 10-percent bracket did not exist before tax year 2002. From 2003 onward, the 10-percent and 15-percent joint bracket lengths equaled twice of those for single filers, and the 10-percent and 15-percent bracket lengths for head of household filers equaled 143 percent and 134 percent of those for single filers, respectively. In 2001, the 15-percent bracket length for head of household filers equaled 134 percent of that for single filers.

income levels allows married filers with earned income in the original phase-out range to claim a larger credit and extends EITC eligibility to higher earnings levels.

Under EGTRRA, these expansions were to phase-in over time between 2002 and 2009. The Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) fully phased-in the expansions of the 10-percent bracket, 15-percent bracket, and the joint standard deduction in tax year 2003. EGTRRA also expanded the maximum amount of income at which married-filing-jointly filers are eligible for the maximum EITC by $3,000 greater than that of unmarried filers. EITC marriage penalty relief was further expanded to $5,000 and indexed to inflation by ARRA beginning in tax year 2009.

We first estimate the potential taxes facing the couples if they were married and filed joint returns in 2007 in the fully phased-in marriage penalty relief regime (i.e., 2009 law in 2007 levels), otherwise referred to as current law. Next, we compare those taxes to the combined separately-filed taxes for each couple, under the same law, to determine whether the couple incurs a marriage bonus or penalty. We define federal income tax liability as tax before credits minus the sum of non-refundable credits (including the non-refundable child tax credit), the refundable child tax credit, and the EITC. The potential bonus or penalty is the difference between the estimated tax liability if the couple files as married filing jointly and the sum of the estimated tax liabilities when the couple files separate returns. Couples who would experience a tax liability decrease of five dollars or more when filing jointly are categorized as having a marriage bonus, while couples who would experience a tax liability increase of five dollars or more when filing jointly are categorized as having a marriage penalty. Couples with less than a five dollar change in tax liability are considered to have no change in tax liability.

Table 3 shows the marriage bonus and penalty results under different policy regimes. Column 1 presents the results with fully phased-in marriage penalty relief policies. The vast majority, or 85.4 percent, of cohabiting couples would experience a change in tax liability had they filed as married filing jointly instead of filing separately, including 39.0 percent with a marriage bonus and 46.4 percent with a marriage penalty, leaving 14.5 percent with no change in tax liability. On average, cohabiting couples in the sample would experience a marriage penalty of $343, which is the additional amount of taxes they would pay if they were married and filed jointly.

Researchers have documented that couples with children and couples with more equal incomes are more likely to experience a marriage penalty (Eissa and Hoynes, 2000; Alm and Whittington, 2001; Lin and Tong, 2012). The statistics in Table 4 support these findings. The higher penalty rate among couples with children is caused by the head-of-household filing status and the EITC. Head-of-household filers, which include single parents who maintain their own households, have a tax advantage over single filers because the lengths of their lower tax brackets are longer and their standard deduction is greater. Because a high percentage of cohabiting couples with children have at least one head of household filer (64 percent), they are more likely to incur a marriage penalty upon joint filing than cohabiting couples who file as two singles. In addition, the EITC gives rise to marriage penalties because added income from the spouse often results in a reduction in the credit. Couples with more equal incomes are more likely to have a marriage penalty because the lengths of the joint tax brackets for higher statutory tax rates are less than twice the lengths of those for singles. Consequently, dual-earner couples with similar incomes might be in a higher tax bracket when filing jointly.

A. Effects of Individual Marriage Penalty Relief Policies on Marriage Penalties and Bonuses

This section examines the effects of each marriage penalty relief provision on marriage penalties and bonuses of cohabiting couples. Specifically, we compare couples' penalties and bonuses under current law with penalties and bonuses in regimes where one of the provisions is eliminated. Column 2 of Table 3 shows the effects of increasing the lengths of the 10-percent and 15-percent tax brackets under joint filing. The calculation shows that this marriage penalty relief policy, on average, reduces the potential tax liability of joint filing by $404 for cohabiting couples. Without this policy, 17 percent of couples initially in the 10-percent bracket would move to the 15-percent bracket, 18 percent of couples initially in the joint 15-percent bracket would move to the 25-percent tax bracket (numbers not shown in the Table) and, for couples with even higher incomes, a larger fraction of their income would be taxed at a rate above 15 percent. Consequently, the tax bracket marriage penalty relief reduces the marriage penalty rate from 63.6 percent to 46.4 percent under current law, and increases the bonus rate and no-tax-change rate from 30.9 percent and 5.4 percent, respectively, to 39.0 percent and 14.5 percent. On average, the provision reduces cohabiting couples' marriage penalty from $747 to $343. This reduction is entirely explained by a lower tax before credits under joint filing, with no change in joint tax credits.

Column 3 of Table 3 presents the effects of an increase in the standard deduction for joint filers from 167 percent to 200 percent of that for single filers, assuming the other marriage penalty relief policies remain in place. A higher joint standard deduction reduces couples' joint taxable income and thus tax before credits. Without the policy, the proportion of cohabiting couples facing a marriage penalty would increase to 59.8 percent and the proportion with bonus would decrease to 33.5 percent from current law’s 46.4 percent penalty rate and 39.0 percent bonus rate. On average, the standard deduction policy decreases cohabiting couples’ marriage penalty from $482 to $343, with the change driven by a reduction in tax before credits.

Column 4 of Table 3 reports the effects of the EITC marriage penalty relief, assuming the other marriage penalty relief policies remain in place. This policy increases the amount of EITC claimed among couples whose joint income falls in the extended plateau and new phase-out range. Because this tax provision affects a more narrowly targeted population than the other two marriage penalty relief provisions, the overall proportions of couples with marriage penalties and bonuses are little changed from those under current law. Without the policy, 47.8 percent of cohabiting couples would have a marriage penalty and 34.9 percent would have a marriage bonus, compared to 46.4 percent and 39.0 percent, respectively, under current law. On average, the EITC marriage penalty relief policy reduces cohabiting couples’ marriage penalty from $447 to $343. This effect is driven entirely by an increase in the EITC.

B. Effects of All Marriage Penalty Relief Provisions on Marriage Penalties and Bonuses

As suggested by the analysis above, each marriage penalty relief policy shifts additional cohabiting couples into the marriage bonus position and away from the marriage penalty position. Next, we consider the combined effect of all of the marriage penalty relief policies enacted since 2001. As shown in the last column of Table 3, without these marriage penalty relief policies, 69.0 percent of cohabiting couples would have a marriage penalty, which is 1.5 times the marriage penalty rate under current law. Without the policies, only 23.2 percent of couples would have a marriage bonus and 7.8 percent would have no change in tax liability, down from 39.0 percent and 14.5 percent, respectively, under current law. The average marriage penalty would rise to $999 in the absence of these policies, $656 higher than the average penalty under current law. Differentiating the policies' effect between taxes and credits, we find that about 85 percent of this change in joint tax liability, or $554, comes from a reduction in tax before credits, and 15 percent, or $104, comes from an increase in EITC.[16]

The analysis reveals that, in aggregate, marriage penalty relief policies result in more equal taxes between separate filing and the potential joint filing for cohabiting couples. In particular, the percentage of couples who would experience no tax change if they filed joint instead of separate returns increases by 6.7 percentage points, and the average tax differential between separate and joint filing across all couples declines by $656. While marriage penalty relief policies improve overall tax neutrality with respect to marriage for cohabiting couples, the impact of these policies varies by a couple's total income. Table 5 shows penalty and bonus positions with and without the marriage penalty relief polices by the couple's joint AGI, with key results highlighted in Figures 1 and 2.

Figure 1 presents no-tax-change rates by couples' joint AGI, both with and without marriage penalty relief policies. For couples with joint AGI between $30,000 and $200,000, marriage penalty relief policies increase the proportion of couples who pay the same tax between separate and joint filing (i.e., couples in a tax neutral position). Without marriage penalty relief, a very small percentage of these cohabiting couples, in the range of 0-3.8 percent depending on AGI, face the same tax when filing joint instead of separate returns. The policies increase the percentage to 3 percent to 18 percent, depending on joint AGI, by reducing joint taxes and therefore shifting couples from the marriage penalty position to the tax neutral position. In contrast to this increase in the share of couples with tax neutrality, marriage penalty relief

[16] When marriage penalty relief policies are repealed, there is a small increase in amount of child tax credit claimed, causing the sum of the changes in tax before credits and EITC to not equal the change in tax liability.

policies *reduce* the percentage of lower-income (below $30,000) couples who pay the same tax between separate and joint filing. For example, for couples with income in the range between $10,000 and $20,000, the policies lower the no-tax-change rate from 48.7 percent to 28 percent. This result occurs because many low-income couples switch from the tax neutral position into the marriage bonus position in the presence of the EITC marriage penalty relief policy.

Figure 2 shows marriage bonus rates both with and without marriage penalty relief policies by AGI class. Marriage bonus rates are the highest for couples with joint AGI between $10,000 and $40,000, both with and without marriage penalty relief policies. For these couples, marriage penalty relief policies result in a large increase in the share of couples incurring a marriage bonus, an increase by more than 20 percentage points to over 60 percent. As mentioned above, this outcome arises because the EITC marriage penalty relief policy increases the EITC of low-income couples under joint filing, thereby increasing the marriage bonus rate (See Table A.1 for details).

Another income group that experiences a large increase in marriage bonus rates in the presence of marriage penalty relief policies consists of couples with income between $75,000 and $100,000, rising from 14.5 percent to 38.1 percent. This large increase in marriage bonus rates is a result of another marriage penalty relief policy—the tax bracket relief policy. Couples with joint AGI in the $75,000 to $100,000 category would begin to experience the full benefit from the tax bracket marriage penalty relief if they were married and filed jointly. Couples with joint AGI between $75,000 and $100,000 have taxable income ranging between $58,700 and $83,700 if they take the standard deduction and have no dependents. A couple with one dependent would have taxable income between $55,000 and $80,000 and a couple with two dependents would have taxable income between $51,300 and $76,300 assuming they take the standard deduction. With the tax bracket marriage penalty relief policy, the endpoint of the 15-percent bracket rises from $53,190 to 63,700, allowing couples in this joint AGI range to incur the full benefit from the higher endpoint of the 15-percent bracket. Couples with higher incomes also benefit, but this full effect represents a larger share of income for those with AGI ranging between $75,000 and $100,000 than for higher-income couples.

C. Effects of All Marriage Penalty Relief Provisions on Marginal Tax Rates

While labor supply responses of cohabiting couples to marriage taxes and marriage penalty relief policies are beyond the scope of this paper, we estimate the effects of joint filing and marriage penalty relief policies on the effective marginal tax rate faced by cohabiting persons to investigate tax incentives to work.[17] This analysis answers the following questions: (1) if a cohabiting couple were to get married and file a joint return, what would be the change in the marginal tax rates for each individual, and (2) how would this change in marginal tax rates be affected by marriage penalty relief policies? To compute the marginal tax rates under joint filing, we hold individual earnings constant at the level observed from the data and compute the marginal tax rates with and without marriage penalty relief policies. We then compare these rates to the marginal tax rate calculated from the person's separately filed return.[18]

Table 6 presents the shares of primary and secondary earners who would experience a change in marginal tax rates if they were to switch from separate to joint filing. In both regimes with and without marriage penalty tax relief policies, the proportion of individuals who would experience a marginal tax rate change is quite large.[19] Under a regime without marriage penalty

[17] The marginal tax rate is calculated using Bakija's calculator (2009) and is the marginal tax rate with respect to wages.
[18] Individuals who are claimed as a dependent on their cohabitating partners' separately filed tax returns are assumed to have zero income under separate filing.
[19] There is a marginal tax rate change if the difference between the two rates is greater than 0.1 percentage point.

relief, 45.2 (100-54.8) percent of primary earners and 82.9 (100-17.1) percent of secondary earners would experience a marginal tax rate change upon marriage. Marriage penalty relief policies increase this percentage to 51.5 percent, or by 14 percent, for primary earners but reduce the percentage to 77.3 percent, or by 7 percent, for secondary earners.

Among those with a marginal tax rate change, some have a rate increase while others have a rate decrease, and the direction of rate change is related to an individual's relative income position. Secondary earners are significantly more likely to experience a marginal tax rate increase than a decrease if filing a joint return whereas primary earners, with a lesser degree of differential, are more likely to experience a marginal tax rate decrease than an increase. As shown in Table 6, over 60 percent of secondary earners would experience a marginal tax rate increase regardless of the presence of marriage penalty relief policies, compared to about 13-15 percent with a marginal tax rate decrease. In contrast, about one-quarter or over one-third of primary earners, depending on the regime, would experience a marginal tax rate decrease, compared to below 20 percent of primary earners with a rate increase. In aggregate, marriage penalty relief policies reduce the share of cohabiting individuals who would face a higher marginal tax rate and increase the proportion who would face a lower marginal tax rate if they were to file jointly. Among secondary earners, the percentage with a higher marginal tax rate falls from 69.7 to 61.9 percent while the percentage with a lower marginal tax rate increases slightly from 13.2 to 15.4 percent. Among primary earners, the percentage with a higher marginal tax rate falls slightly from 19.8 to 16.4 percent while the percentage with a lower marginal tax rate rises from 25.4 to 35.1 percent.

Figures 3 and 4 break down the results by the couple's joint income separately by primary and secondary earner. Although, in aggregate, secondary earners tend to experience a marginal tax rate increase, rather than a decrease, if filing a joint return, the outcomes vary by income. As shown Figure 3(a), over 80 percent of secondary earners with joint AGI between $20,000 and $40,000 or above $150,000 would experience a marginal tax rate increase if filing jointly regardless of whether marriage penalty relief policies exist. In contrast, marriage penalty relief policies have a large impact on reducing the share of secondary earners with a marginal rate increase if the couple's joint AGI is between $10,000 and $20,000 or between $50,000 and $100,000. For couples with joint AGI between $10,000 and $20,000, the reduction in secondary earners' marginal tax rate is a result of the expanded plateau region of the married EITC schedule. These secondary earners generally have a low marginal tax rate under separate filing because they either do not claim or claim a small amount of the EITC. Without EITC marriage penalty relief, they would have an increase in marginal tax rates upon joint filing because the couples' incomes would be in the EITC phase-out region, where marginal tax rates are high. For couples with joint AGI between $50,000 and $100,000, fewer secondary earners experience a marginal tax rate increase in the presence of marriage penalty relief policies because fewer of them move up a tax bracket under joint filing (the percentage changed from 88 to 62 percent).

Figure 4 presents the results for primary earners. Figure 4(a) shows that marriage penalty relief policies *increase* the share of primary earners with a marginal tax rate increase upon joint filing if the couple's joint AGI falls between $30,000 and $50,000. This increase in marginal tax rates occurs because some of the couples who are initially ineligible for the EITC move to the EITC phase-out range, thereby increasing their marginal tax rate. Without the marriage penalty relief policies, these individuals would have no change in their marginal tax rate when switching from separate to joint filing. Similar to secondary earners, the presence of marriage penalty relief policies causes primary earners to be more likely to experience a marginal tax rate decrease and less likely to experience a marginal tax rate increase, if the couple's joint AGI is between $50,000 and $100,000 because fewer move up a tax bracket under joint filing.

Figure 4(b) shows that, for couples with joint AGI between $10,000 and $20,000, marriage penalty relief policies significantly increase the proportion of primary earners who would experience a marginal tax rate decrease upon joint filing, rising from 21.3 percent to 49.7 percent. These individuals generally claim the EITC and contribute an average of over 90 percent to joint AGI. As a consequence, without EITC marriage penalty relief, these primary earners end up in the phase-out range of the EITC regardless of whether they file separately or jointly, causing them to experience no change in marginal tax rate. However, their marginal tax rate is lowered by the EITC marriage penalty relief policy as their income now falls in the expanded plateau region.

V. CONCLUSION

From a policy perspective, it is important to understand how tax policy affects equity across similarly situated households. The marriage tax is of particular interest due to concerns about horizontal equity between married and unmarried, cohabiting couples. In addition to improving horizontal equity, a policy could aim at reducing marriage penalties by targeting tax relief to married couples and consequently impact cohabiting couples' marriage decisions.[20] Such policies are also of interest from budgetary and economic perspectives as they affect tax revenues and change marginal tax rates and work incentives of couples in transition to marriage.

Our analysis shows that marriage penalty relief policies change the amount of marriage taxes and marginal tax rates that cohabiting couples would face if they were to file joint instead

[20] Alm and Whittington (1995a, 1995b, 1997a, 1997b, and 1999) and Sjoquist and Walker (1995) find that marriage taxes have a small effect on the marriage rate or the timing of marriage. Eissa and Hoynes (2000) find a modest effect of the tax and transfer systems on the propensity to be married relative to cohabiting.

of separate returns. Marriage penalty relief policies reduce the average difference between jointly-filed and separately-filed taxes, suggesting that these policies, on average, improve tax neutrality with respect to marriage for cohabiting couples. However, this result is not uniform across income groups. The targeted marriage bonus created by EITC marriage penalty relief causes a smaller share of couples with joint AGI below $30,000 to experience no tax change and a larger share to experience marriage bonuses when switching to joint filing.

Our analysis also shows that most cohabiting individuals—about one-half of primary earners and three-quarters of secondary earners—would face a different marginal tax rate when switching from separate to joint filing under current law. A majority of secondary earners would face a higher marginal tax rate and thus a work disincentive if they were married and filed a joint return. This adverse effect, however, is mitigated by marriage penalty relief policies for certain income groups through the expanded EITC and bracket lengths for joint filers. For primary earners, we find that about 25.4 percent of these individuals would face a lower, rather than higher, marginal tax rate if they filed jointly, and marriage penalty relief policies reinforce this outcome by increasing the rate to 35.1 percent.

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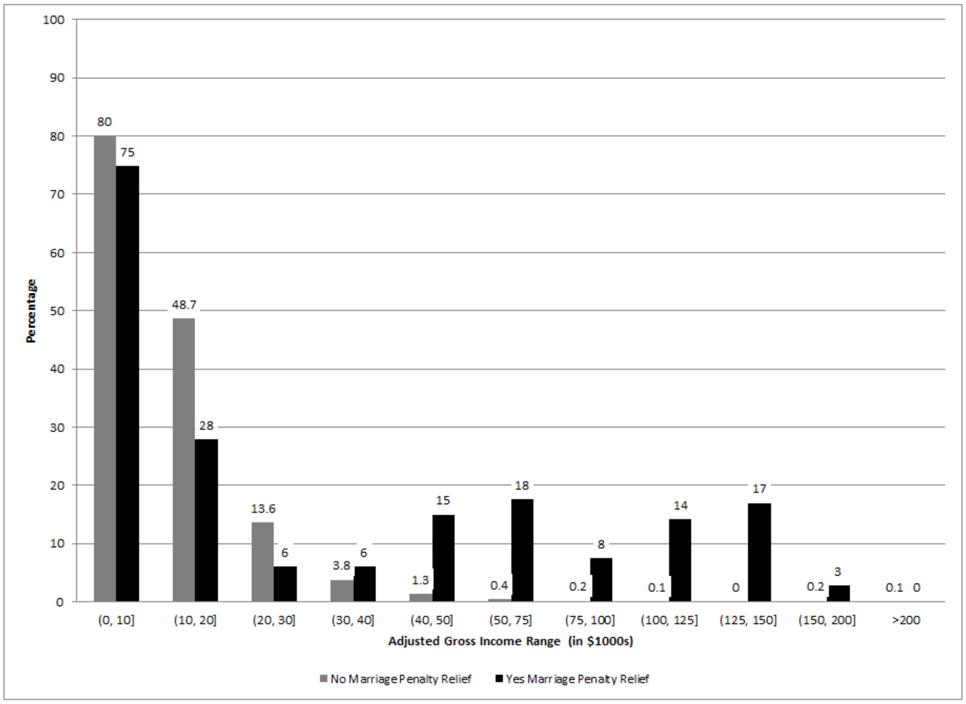


Figure 1: No Tax Change Rates

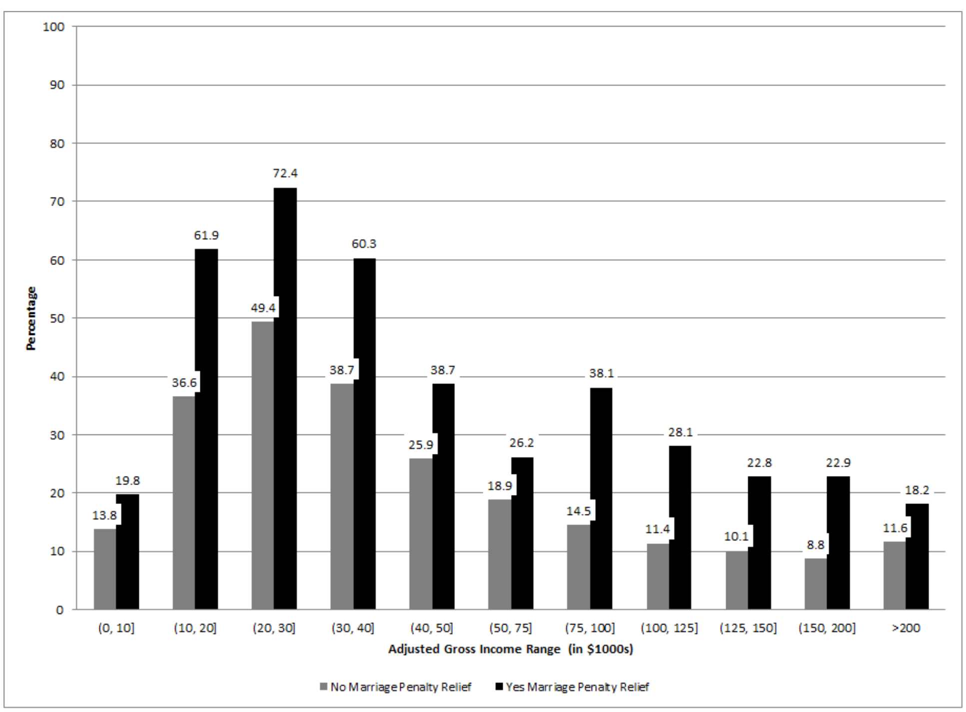
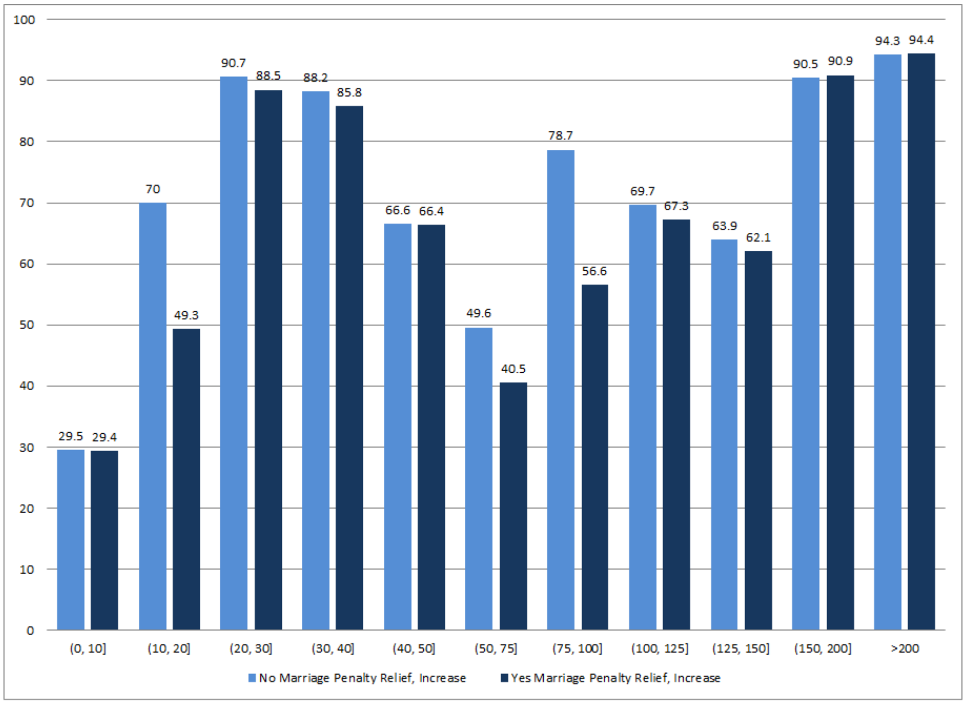
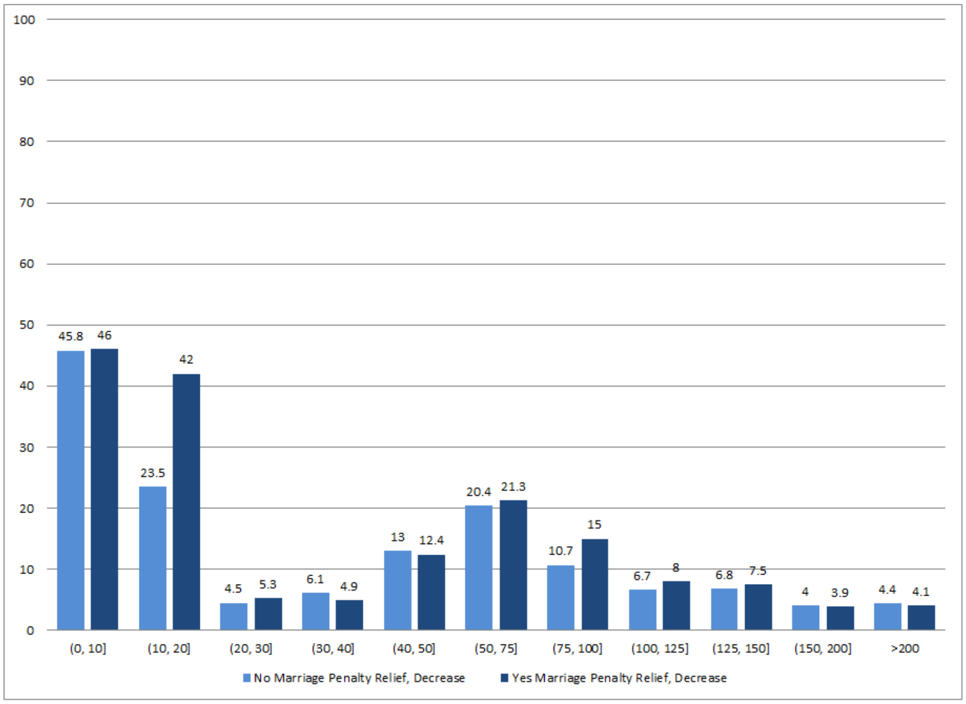


Figure 2: Marriage Bonus Rates

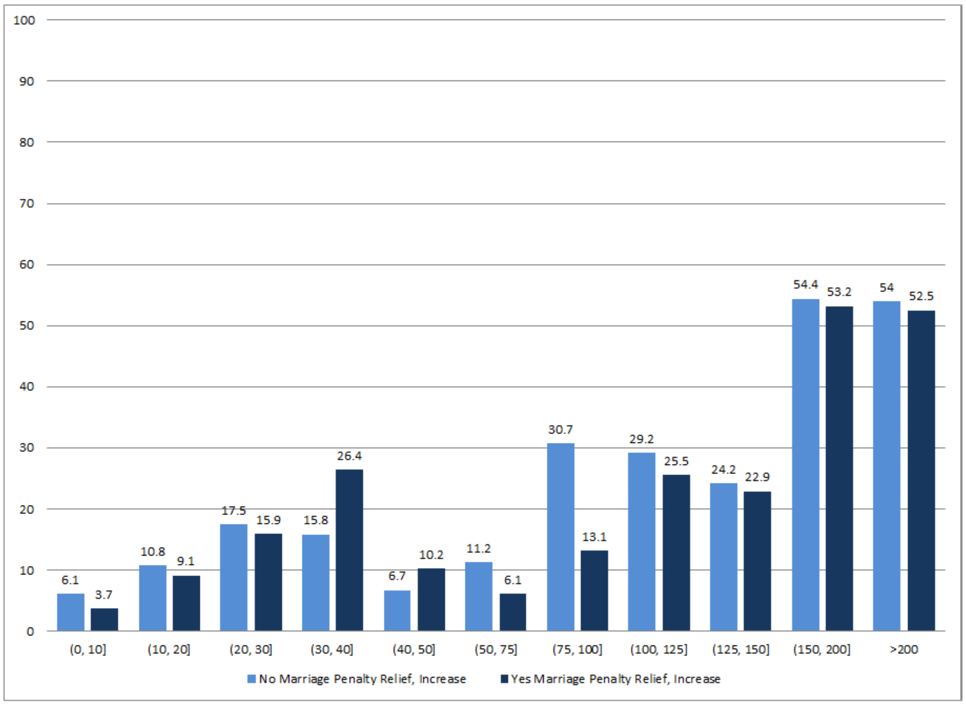


(a) Marginal Tax Rate Increase

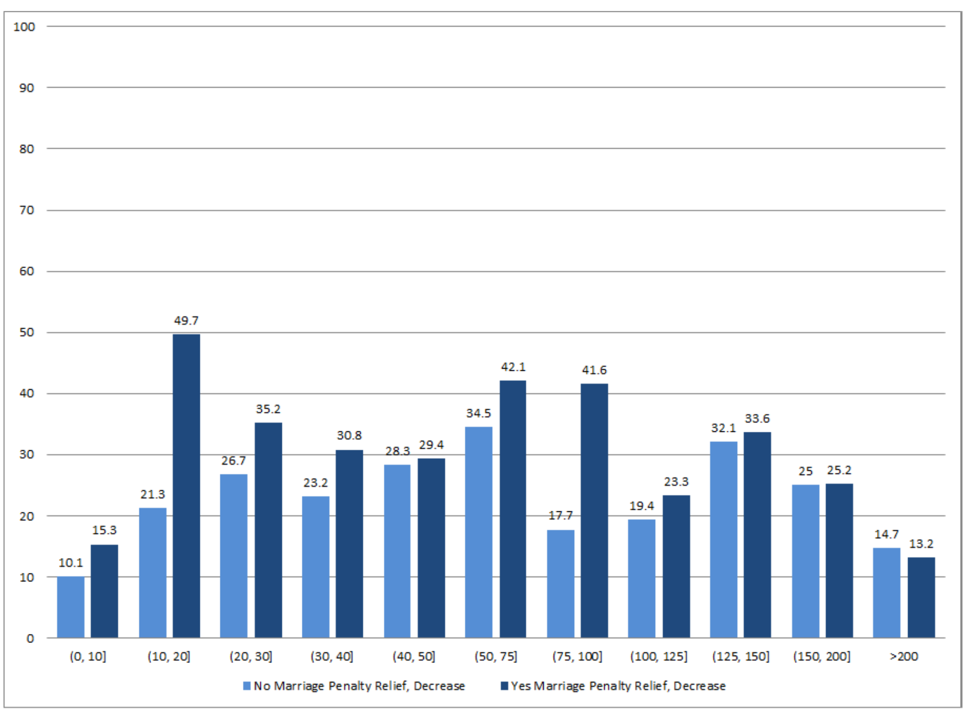


(b) Marginal Tax Rate Decrease

Figure 3: Marginal Tax Rate Changes for Secondary Earners



(a) Marginal Tax Rate Increase



(b) Marginal Tax Rate Decrease

Figure 4: Marginal Tax Rate Changes for Primary Earners

TABLES

Table 1

Cohabiting Couple Sample Comparison

	Tax Data Sample		American Community Survey (ACS)	
	Mean	Std Dev	Mean	Std Dev
Any Children	0.448	(0.497)	0.437	(0.496)
One Earner	0.211	(0.408)	0.204	(0.403)
Two Earners	0.770	(0.421)	0.745	(0.436)
Secondary Earner Income <= .05 of Total	0.225	(0.417)	0.246	(0.431)
Secondary Earner Income .05-.10 of Total	0.027	(0.161)	0.038	(0.191)
Secondary Earner Income .10-.20 of Total	0.080	(0.272)	0.093	(0.291)
Secondary Earner Income .20-.30 of Total	0.138	(0.345)	0.131	(0.337)
Secondary Earner Income .30-.40 of Total	0.221	(0.415)	0.204	(0.403)
Secondary Earner Income .40-.50 of Total	0.310	(0.462)	0.289	(0.453)
Total Income < 0	0.003	(0.053)	0.001	(0.023)
Total Income 0-10000	0.034	(0.181)	0.098	(0.298)
Total Income 10001-20000	0.065	(0.247)	0.097	(0.296)
Total Income 20001-30000	0.095	(0.294)	0.124	(0.329)
Total Income 30001-40000	0.105	(0.306)	0.122	(0.327)
Total Income 40001-50000	0.104	(0.306)	0.115	(0.319)
Total Income 50001-75000	0.241	(0.428)	0.207	(0.405)
Total Income 75001-100000	0.157	(0.364)	0.114	(0.318)
Total Income 100001-125000	0.083	(0.276)	0.053	(0.224)
Total Income 125001-150000	0.043	(0.203)	0.027	(0.161)
Total Income 150001-200000	0.037	(0.188)	0.022	(0.148)
Total Income 200001+	0.033	(0.178)	0.021	(0.142)

Notes: ACS data are weighted by household sampling weight. Distribution of couples by ratio of secondary earner income relative to total excludes couples where one or both individuals have negative total income and excludes couples with zero total income.

Table 2

Summary Statistics of Separately Filed Tax Returns under Current Law

	Mean	Std Dev
Both Single	0.50	(0.50)
One Single, One Head of Household	0.23	(0.42)
Both Head of HH	0.07	(0.26)
One-Filer	0.19	(0.39)
Secondary Earner AGI*	$18,708	(0.00)
Primary Earner AGI*	$40,387	(0.00)
Fraction of AGI from Secondary Earner*	0.32	(0.00)
Secondary Earner AGI ≤ .05 of Total	0.22	(0.41)
Secondary Earner AGI .05-.10 of Total	0.03	(0.16)
Secondary Earner AGI .10-.20 of Total	0.08	(0.27)
Secondary Earner AGI .20-.30 of Total	0.14	(0.34)
Secondary Earner AGI .30-.40 of Total	0.22	(0.41)
Secondary Earner AGI .40-.50 of Total	0.31	(0.46)
One Earner	0.21	(0.41)
Two Earners	0.77	(0.42)
Any Children	0.45	(0.50)
Both Have Children	0.09	(0.29)
Age of Primary	35.23	(11.09)
Age of Secondary	32.98	(9.50)
Tax Liability	$8,063	(69,759)
Tax Before Credit	$9,389	(69,614)
Total Child Tax Credit	$468	(802)
Earned Income Tax Credit	$808	(1,453)
Observations	41,981	

Notes: *Calculated using the average of the 10 middle observations. Income tax variables are total of individually filed tax returns within a couple. Distribution of couples by ratio of secondary earner AGI relative to total excludes couples where one or both individuals negative AGI and excludes couples with zero total AGI.

Table 3

Effects of Marriage Penalty Relief Policies on Marriage Penalties and Bonuses

	(1) Current Law		Eliminate Marriage Penalty Relief: (2) Tax Brackets		(3) Standard Deduction		(4) EITC		(5) All	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Marriage Bonus Rate	0.390	(0.488)	0.309	(0.462)	0.335	(0.472)	0.349	(0.477)	0.232	(0.422)
No Tax Change Rate	0.145	(0.352)	0.054	(0.227)	0.066	(0.249)	0.174	(0.379)	0.078	(0.268)
Marriage Penalty Rate	0.464	(0.499)	0.636	(0.481)	0.598	(0.490)	0.478	(0.500)	0.690	(0.463)
Penalty (+) or Bonus (-) Amount	343	(1791)	747	(1898)	482	(1780)	447	(1782)	999	(1854)
Relative to Joint Taxes under Current Law										
Tax Liability	0	(0)	404	(490)	140	(148)	104	(279)	656	(505)
Tax Before Credits	0	(0)	404	(490)	140	(148)	0.00	(0.00)	554	(516)
EITC	0	(0)	0	(0)	0	(0)	-104	(279)	-104	(279)

Notes: Current Law refers to 2007 law with fully phased-in 2009 law marriage penalty relief policies. EITC is the Earned Income Tax Credit. When marriage penalty relief policies are repealed, there is a small increase in amount of child tax credit claimed causing the sum of the changes in tax before credits and EITC not equal the change in tax liability.

Table 4
Marriage Penalty and Bonus Rates by Demographic Characteristics

	Bonus	No Change	Penalty
By Presence of Children			
Yes Children	.342	.080	.578
No Children	.430	.198	.372
By Filing Status			
Both Single	.377	.201	.422
One Single, One Head of HH	.190	.008	.802
Both Head of HH	.106	.006	.888
One Non-Filer	.773	.216	.011
By Fraction of AGI from Secondary Earner			
≤0.05	.787	.196	.016
0.05-0.10	.799	.005	.196
0.10-0.20	.570	.007	.423
0.20-0.30	.376	.008	.616
0.30-0.40	.268	.092	.640
0.40-0.50	.110	.258	.631

Notes: * Distribution of couples by ratio of secondary earner AGI relative to total excludes couples where one or both individuals negative AGI and excludes couples with zero total AGI.

Table 5

Marriage Penalty and Bonus Rates by Joint Adjusted Gross Income

Share of Couples

Joint Adjusted Gross Income, in $1000s	With Marriage Penalty Relief Policies			Without Marriage Penalty Relief Policies			Change			N
	No Change	Marriage Bonus	Marriage Penalty	No Change	Marriage Bonus	Marriage Penalty	No Change	Marriage Bonus	Marriage Penalty	
0-10	.750	.198	.052	.800	.138	.062	-.050	.060	-.010	128
10-20	.280	.619	.101	.487	.366	.147	-.207	.253	-.046	284
20-30	.060	.724	.216	.136	.494	.370	-.076	.230	-.154	391
30-40	.060	.603	.337	.038	.387	.575	.022	.216	-.238	423
40-50	.150	.387	.463	.013	.259	.728	.137	.128	-.265	438
50-75	.180	.262	.558	.004	.189	.807	.176	.073	-.249	101
75-100	.080	.381	.539	.002	.145	.853	.078	.236	-.314	664
100-125	.140	.281	.579	.001	.114	.885	.139	.167	-.306	354
125-150	.170	.228	.602	0.0	.101	.899	.170	.127	-.297	182
150-200	.030	.229	.741	.002	.088	.910	.028	.141	-.169	158
>200	0	.182	.818	0	.116	.884	0	.066	-.066	139
All*	.145	.390	.464	.078	.232	.690	.067	.158	-.226	419

Notes: *Couples with negative joint adjusted gross income included in All, but not in separate joint AGI categories. AGI categories exclude the lower end point and include the upper end point.

Table 6
Individual Marginal Tax Rate (MTR) Changes for Primary and Secondary Earners
Share of Individuals

	With Marriage Penalty Relief Polices	Without Marriage Penalty Relief Policies	Change
Primary Earner			
Increase in MTR	.164	.198	-.034
No Change in MTR	.485	.548	-.063
Decrease in MTR	.351	.254	.097
Secondary Earner			
Increase in MTR	.619	.697	-.078
No Change in MTR	.227	.171	.056
Decrease in MTR	.154	.132	.022

APPENDIX

Table A.1

Effects of Marriage Penalty Relief Polices on Joint Tax Variables by Joint Adjusted Gross Income

Joint Adjusted Gross Income, in $1000s	Tax Liability		Tax Before Credits		Earned Income Tax Credit		N
0-10	-21	(81)	0	(0)	21	(81)	1,287
10-20	-211	(258)	-29	(61)	184	(260)	2,845
20-30	-670	(428)	-136	(79)	543	(450)	3,919
30-40	-635	(391)	-260	(133)	379	(440)	4,238
40-50	-340	(148)	-323	(130)	18	(80)	4,380
50-75	-325	(171)	-325	(171)	0	(0)	10,197
75-100	-980	(547)	-980	(547)	0	(0)	6,642
100-125	-1,232	(339)	-1,232	(339)	0	(0)	3,546
125-150	-1,247	(238)	-1,247	(238)	0	(0)	1,826
150-200	-1,235	(192)	-1,235	(192)	0	(0)	1,582
>200	-1,211	(140)	-1,211	(140)	0	(0)	1,399

Notes: Changes are the difference in joint taxes under current law less joint taxes in a regime without marriage penalty relief policies. AGI categories exclude the lower end point and include the upper end point.