Office of Tax Analysis
Working Paper 124
January 2024

Marriage Penalties and Bonuses by Race and Ethnicity: An Application of Race and Ethnicity Imputation

Rachel Costello, Portia DeFilippes, Robin Fisher,
Ben Klemens, and Emily Y. Lin

Marriage Penalties and Bonuses by Race and Ethnicity: An Application of Race and Ethnicity Imputation

Rachel Costello, Portia DeFilippes, Robin Fisher, Ben Klemens, and Emily Y. Lin*

January 2024

Abstract

The Office of Tax Analysis imputes race and ethnicity information to its tax microsimulation model to facilitate equity analysis in taxation. Applying the imputed race and ethnicity information to the calculation of marriage penalties and bonuses for married couples filing joint returns, this paper finds differences in the probability that such couples face a penalty or bonus, and the amount of the penalty or bonus, among couples of different races and ethnic backgrounds. Moreover, these group differences vary by income. White couples are more likely to face a marriage penalty than Black and Hispanic couples in several income classes below $100,000, but Black and Hispanic couples are more likely to face a penalty than White couples in higher-income classes. These findings differ from other recent studies using different data sources. The estimated Black-White differences in penalty rates by income are consistent with the patterns of spousal income splits in the underlying data sources, suggesting that examination of the differences in these splits in different data sources is an important avenue for further research.

I.   Introduction

Tax law can have different impacts on individuals in different racial and ethnic groups because individuals' tax return characteristics—e.g., marital status, number of children, the level and sources of income, household expenses, etc.—vary across groups. While no tax rule depends on race or ethnicity, group differences in characteristics and choices can result in favorable tax consequences for some groups while disadvantaging others. However, because tax forms do not collect information about individual race or ethnicity, it has been challenging to use administrative tax data to analyze tax differentials across race and ethnicity groups. To facilitate a better understanding of tax outcomes by race and ethnicity, the Office of Tax Analysis (OTA) imputes information about race and Hispanic origin to a stratified random sample of taxpayers on its individual tax microsimulation model. In this paper, we use the imputed information to estimate marriage penalties and bonuses in the federal individual income tax by race and ethnicity.

Marriage penalties and bonuses measure the tax consequence of filing a joint return upon marriage, by comparing the couple's tax liability on the joint return to the combined liability of the two partners if they were to file separate returns as unmarried individuals using single or head-of-household status. Married couples generally file jointly, where the couple pools their income and deducts combined allowable expenses. Joint filing causes some married couples to pay more federal income tax than they would if they were unmarried and filed separate returns.

These couples face a marriage penalty. However, for married couples who pay less federal income tax by filing jointly, the couples have a marriage bonus. Two married couples who have the same family income and pay the same amount of federal income tax could have different marriage penalty or bonus outcomes, depending on the taxes they would face on the separate returns. The estimation results show that marriage bonuses are more common than marriage penalties under 2023 tax law and population: 37 percent of married-filing-jointly couples face a marriage penalty and 53 percent face a marriage bonus.

One key factor for a couple's marriage penalty or bonus is the income division between the two spouses. In general, couples with one working spouse are likely to have marriage bonuses whereas dual-earner couples with similar incomes are likely to face marriage penalties. Under a progressive tax system, when the partners have similar incomes, joint filing may push the couple's combined income into a higher rate bracket than the bracket each spouse would face on the separately filed return if unmarried. In contrast, when one spouse earns all, or almost all, the family's income, the couple may enjoy a lower tax rate by filing jointly because the bracket widths for married-filing-jointly status are longer than those for single or head-of-household status. Similarly, depending on the couple's division of income, phaseouts of tax benefits may cause a marriage bonus or penalty when the benefit phases out over a higher income range for joint filers than for unmarried filers but the income levels of the phaseout schedule for joint filers are less than twice the levels for unmarried filers. Tables A-1 and A-2 of the Appendix show the rate brackets and the phase-out schedule of the Earned Income Tax Credit (EITC) for tax year 2023. In fact, marriage penalties and bonuses are unavoidable under a progressive tax system that treats married couples with equal income equally regardless of how similar or disparate the two spouses' incomes are.

A consequence of this marriage non-neutrality is that it may distort the marriage and labor supply decisions. Many studies, including Alm and Whittington (1995, 1997, and 1999) and Sjoquist and Walker (1995), find a small effect of the marriage penalty on the marriage rate or the timing of marriage. LaLumia (2008) finds that changing the unit of taxation from individuals to families in 1948 reduced married women's labor supply among highly educated taxpayers but did not affect married men's labor supply. Lin and Tong (2014) estimate the change in the marginal tax rate faced by cohabiting individuals if they were to get married and file joint returns. The authors show that over 60 percent of secondary earners would face an increase in the marginal tax rate under joint filing. In addition, when certain groups have characteristics that result in marriage penalties, married couples in these groups are treated unfavorably by the joint-filing system relative to individual-based filing. This paper focuses on group differences in the marriage penalty and bonus outcomes in the context of race and ethnicity.

To facilitate the analysis of marriage penalties and bonuses by race and ethnic background, OTA imputes race and Hispanic origin to the population represented in its microsimulation model. Built on a Bayesian inference model, this imputation uses family income, filing status, age, number of dependents, gender,[1] first name and last name of the primary taxpayer, and the ZIP Code Tabulation Area (ZCTA) based on the taxpayer's address shown on the return as the explanatory variables to make inferences about the race and Hispanic origin category of the primary taxpayer on a tax return. Cronin et al. (2023) and Fisher (2023) describe the methodology and estimation of this imputation in detail.

Using this race and Hispanic origin (RH) information, the marriage penalty and bonus outcomes are estimated for the four groups of married-filing-jointly couples—White, Black,

---

[1] This information is the individual's gender assigned at birth recorded in the Social Security Administration's database.

Asian and Pacific Islander (API), and Hispanic—for tax year 2023.[2] The results show that 38 percent of White married-filing-jointly couples have a marriage penalty. The penalty rate is 35 percent for API couples, 34 percent for Hispanic couples, and 32 percent for Black couples. Of couples with penalties, the average penalty amount ranges from $1,633 for Black joint filers to $2,191 for API joint filers. For context, the penalties represent 17 percent of the tax liability for Hispanic couples, 11 percent for Black couples, 8 percent for White couples, and 7 percent for API couples. For the bonus outcomes, 56 percent of Hispanic married-filing-jointly couples have a marriage bonus, compared to 53 percent for White and API couples and 52 percent for Black couples. Of couples with marriage bonuses, the average bonus amount is much higher for White and API joint filers, over $5,000, compared to $3,628 for Black joint filers and $3,050 for Hispanic joint filers. However, in terms of the share of tax liability, the bonus represents only 14 and 16 percent of the tax liability for, respectively, White and API couples, relative to 24 percent for Black couples and 28 percent for Hispanic couples.

When comparing the estimated results between Black and White couples and between Hispanic and White couples by income, we find positive and negative differences between the groups' penalty and bonus rates and amounts over the entire range of the income distribution. For example, for joint filers with income above $100,000, Black couples and Hispanic couples generally face a marriage penalty at higher rates, and a marriage bonus at lower rates, than White couples in the same income category. In contrast, the opposite results are shown for several lower income categories, for which White couples have a higher marriage penalty rate. For the penalty and bonus amounts, Hispanic couples have a higher penalty amount compared to White couples

---

[2] The imputation results in six mutually exclusive race and ethnicity categories—White, Black, American Indian or Alaska Native (AIAN), Asian or Pacific Islander (API), multiple-race, and Hispanic. Estimates of marriage penalties and bonuses for AIAN and multiracial married couples are imprecise due to large sampling and estimation errors.

for most income classes, but the directions of the other comparisons generally do not follow any notable pattern over the income distribution.

Studies by legal scholars, including Moran and Whitford (1996) and Brown (1997, 2021), suggest that Black couples likely face the marriage penalty at higher rates than White couples because survey data show that dual income is more common for Black families than White families. In contrast, this paper shows that whether marriage penalties are more prevalent among Black couples depends on the family's income. Further analysis reveals that the finding in this paper is consistent with the spousal income splits by race for joint filers in the tax data, which, in turn, differ from the income split patterns estimated based on the survey data from the Current Population Survey (CPS) Annual Social and Economic (ASEC) Supplement. As discussed in greater detail below, income data in the tax model likely provides higher quality information than survey data, but the reliance on imputation of race and Hispanic origin has limitations unique to the tax model.

The paper is organized as follows. Section II provides a review of the literature. Section III introduces the marriage penalty and bonus calculator in the Treasury's individual tax microsimulation model and presents the penalty and bonus consequences for all joint filers in 2023. The section also shows the effects of family income and non-income factors, including the spousal income split and the presence of dependents. Section IV presents the distribution of joint filers by income, spousal income splits, and the presence of dependents for each RH group, and compares the marriage penalty and bonus between Black and White couples and between Hispanic and White couples. Section V contains additional analysis on the spousal division of income and discusses differences between the tax data and survey data that could affect estimation results. Section VI concludes.

II.   Literature Review

A marriage penalty or bonus measures the tax consequence of filing a joint return upon marriage based on the couple's combined income and total expenses. There are different ways to define and measure this tax consequence. Many studies estimate the potential change in tax liability if a married couple filed two separate returns as unmarried persons. A married couple incurs a marriage penalty (or bonus) if they pay more (or less) tax on the joint return than if they were unmarried and filed separate returns. Bull et al. (1999) discuss methodologies and assumptions that can be adopted concerning the allocations of dependents, joint income, and total family expenses between the two spouses for estimating the tax liability on the separate returns. Alm and Whittington (1996) demonstrate that the outcomes of marriage penalties and bonuses are sensitive to the methodologies and assumptions. Other studies estimate the marriage penalty or bonus between alternative laws, given chosen methodologies and assumptions. These include Holtzblatt and Rebelein (2000), Alm and Whittington (2001) and Gillette et al. (2005, 2006).

Researchers also take the approach of "marrying" single individuals and estimating their additional taxes or tax savings resulting from marriage. These studies focus on the marriage penalty facing low- and moderate-income single mothers. The challenge for this approach is to impute the income of a potential spouse. For example, Dickert-Conlin and Houser (1998) estimate the tax cost of marriage for low-income single women, where the potential spouse's income is predicted based on the spouse's income of comparable married women. In contrast, some studies, including Maag (2005) and Lin and Tong (2012), examine the marriage cost for cohabiting couples, taking advantage of the known income of the potential spouse, i.e., the income of the cohabitant.

The marriage penalty was first discussed in the context of race in Moran and Whitford (1996) and Brown (1997). Both present this syllogism: married Black couples are more likely to live in households where both spouses work, joint filers with similar incomes from the spouses are more likely to face a marriage penalty, and therefore Black families face a greater marriage penalty. When confronting the question of what constitutes a fair comparison, both works focus on horizontal equity, meaning that households with comparable incomes and relevant factors should be treated equally.

Using the 2010 Census data, Brown (2021) shows that, relative to White married couples, Black married couples are less likely to have only one primary earner in the family and more likely to have two spouses earning similar incomes, and such racial difference in spousal income splits persists over a wide range of income levels. Following this finding, Brown (2021) draws the conclusion that, other things equal, Black couples are less likely than White couples to have the marriage bonus and more likely to have the marriage penalty. Quantifying this racial difference, Alm et al. (2023) use data from the Current Population Survey for years 1992 to 2019 and find that Black married couples face a higher average marriage penalty compared to White married couples, with the difference ranging approximately from $200 to $800 by year. Using data from the Survey of Consumer Finances, Holtzblatt et al. (2023) find that marriage penalties are more frequent and larger for Black couples than for White couples when the analysis controls for income.

III.   Marriage Penalties and Bonuses in 2023

This paper uses the individual tax microsimulation model developed by the Office of Tax Analysis (OTA) of the Treasury Department, referred to as the Individual Tax Model (ITM), to

estimate marriage penalties and bonuses for couples filing married-filing-jointly returns. Specifically, it uses the 2019-based tax model and macroeconomic forecasts that underlie the Fiscal Year 2024 Budget to estimate marriage penalties and bonuses for joint filers for tax year 2023. A couple incurs a marriage penalty (bonus) if they pay more (less) federal income tax filing jointly than they would if they were unmarried and each filed a single or head-of-household return. The calculator employs a $5 threshold, and therefore a couple whose combined tax liability changes by no more than $5 if filing individually incurs neither a marriage penalty nor a marriage bonus.

For the spouse's income, the Treasury's marriage penalty calculator uses information on Form(s) W2 to assign individual wages and salaries, Schedule(s) SE to assign non-farm and farming sole proprietorship income, Schedule(s) K-1 for Form 1120-S and Form 1065 to allocate Schedule E income, Form(s) 1099-G to assign unemployment compensation, and Form(s) 1099-SSA to assign Social Security income. The sum of individual wages, self-employment earnings, Social Security income, and unemployment compensation is then computed to construct initial spousal income shares to proportionately allocate the couple's other sources of income, including interest income, capital gains, pension, retirement account distributions, etc. If neither spouse receives any earned income, Social Security income, or unemployment compensation, then income from the other sources is assigned to the primary taxpayer. Alimony is assigned to the lower earner and state tax refunds are allocated in proportion to the spousal shares of total income. To allocate deductions, the calculator uses individual information reports and schedules, where available, such as those for the deductible retirement account contributions and deductible self-employment taxes. It then allocates other deductions in proportion to the couple's earned, unearned, or total income shares, depending on the nature of the expenses.

To determine the filing status on individual returns, the calculator assigns the dependents, if any, to the spouse with the higher income. Hence, the higher-income spouse would claim head-of-household filing status, and the lower-income spouse would claim single filing status. This treatment is consistent with the tiebreaker rules for dependent-related tax credits where a dependent meets all of the qualifying child tests with respect to both parents.[3] Credits associated with dependents, if the taxpayer is eligible, will therefore go to the higher-income spouse. These credits include the Earned Income Tax Credit (EITC) with qualifying children, the Child Tax Credit, the Credit for Other Dependents, and the American Opportunity Tax Credit (AOTC). The lower-income spouse may claim the EITC for childless workers, if eligible. For a couple that claims the premium tax credit (PTC) on the joint return, the calculator splits the total premium payment in proportion to the spouses' earned income and allows both spouses to claim the PTC on individual returns. This treatment is consistent with the PTC rules for divorced couples.

Table 1 shows that 37 percent of joint filers in 2023 are estimated to have a marriage penalty with an average amount of $1,820, representing 8 percent of these filers' joint tax liability. Fifty-three percent of joint filers in 2023 are estimated to have a marriage bonus with an average amount of $4,911, representing 15 percent of these filers' joint tax liability. Only 10 percent of joint filers would face the same federal income tax if they were unmarried and filed returns claiming the single or head-of-household status. The last three columns show results for all joint filers, regardless of the filer's penalty or bonus status. For all joint filers, on average, the marriage bonus is $1,942, representing 8 percent of the tax liability.

---

[3] Under the tiebreaker rules, if the parents do not file a joint return but live with the child for the same amount of time and longer than six months during a year, a child is treated as a qualifying child of the parent with the highest adjusted gross income (AGI).

The penalty and bonus results vary by income. The penalty rate increases with income initially, rising above the average level for the income class of $40,000-$50,000 and reaching a maximum of 49 percent for the income class of $75,000-$100,000. The penalty rate then declines as income rises, decreasing to the below-average level as income exceeds $500,000. Conversely, the bonus rate is higher than average for the income ranges $15,000 to $60,000 and $100,000 or above, with it being the highest for the top two groups.

	Table 1: Marriage Penalties and Marriage Bonuses for 2023									
	Joint Filers with Marriage Penalties (MP)			Neutral	Joint Filers with Marriage Bonuses (MB)			All Joint Filers		
Adjusted Gross Income ($)	Share of Filers (%)	Ave. MP ($)	MP as Share of Tax (%)	Share of Filers (%)	Share of Filers (%)	Ave. MB ($)	MB as Share of Tax (%)	Ave. MP(-) or MB(+) ($)	MP or MB as Share of Tax (%)	Ave. Joint Tax ($)
<0	7	-979	13	75	18	20,204	-537	3,521	-124	-2,845
0 < 15000	6	-761	10	78	16	1,252	-24	155	-6	-2,599
15000 < 30000	11	-1,036	14	35	54	979	-18	417	-9	-4,706
30000 < 40000	26	-724	16	6	68	1,355	-30	728	-17	-4,383
40000 < 50000	39	-1,151	40	3	58	1,650	-58	517	-19	-2,795
50000 < 60000	42	-1,592	160	3	56	1,561	-133	211	-20	-1,047
60000 < 75000	45	-1,587	-217	5	50	1,613	2,959	88	18	491
75000 < 100000	49	-1,352	-38	7	43	2,450	62	393	10	3,859
100000 < 200000	39	-1,573	-12	4	57	3,540	28	1,384	11	12,751
200000 < 500000	42	-2,462	-6	1	56	9,325	19	4,215	9	44,677
500000 <1000000	27	-5,123	-3	0	73	20,607	14	13,592	9	154,014
>=1000000	29	-14,335	-2	0	71	34,821	4	20,726	2	888,182
Total	37	-1,820	-8	10	53	4,911	15	1,942	8	25,798

The average marriage penalty amount, for those with a penalty, ranges from below $1,000 in low-income groups to just below $15,000 in the top income group. In terms of the share of tax liability, however, the penalty amount is relatively high in the middle-income classes due to the low tax liability for these groups. In contrast, while the penalty amount is higher in dollar terms in

the top two income groups, it represents only 2 or 3 percent of the groups' tax. Among those with a bonus, there is a wide range of the average bonus amount by income, from $1,000 to $35,000. Measured as a share of tax, the bonus is particularly high for those with negative AGI and with income $40,000 to $100,000 due to the low tax liability for these groups. Finally, considering all couples in the same income class without regard to the penalty or bonus status, joint filers in all income groups show an average marriage bonus ranging from $88 to $20,726. Except for those with negative income, the bonus represents up to 20 percent of the joint filers' tax liability.

In summary, our model adopts an intuitive way to establish the spouses' tax liability on their returns if they filed as unmarried individuals. Other assumptions exist that can be used to split the couple's joint income and assign dependents to the spouse(s). For reference, Table B-1 of the Appendix shows results under an alternative assignment of dependents, in which dependents are assigned to the lower-income spouse with earnings (including wages, salaries, and self-employment income). Accordingly, this spouse would claim the head-of-household status and child-related credits on the individual return. This assumption is consistent with the credit-maximization approach but inconsistent with the tie-breaker rules. Using this assumption decreases the marriage penalty rate, and increases the marriage bonus rate, for joint filers with income $15,000 to $60,000, but has a modest effect on the total. It also does not affect the paper's conclusions about marriage penalties and bonuses by race and ethnicity.

In addition to income, family characteristics affect a couple's marriage penalty and bonus outcomes. Table 2 presents results by the number of earners, defined as those who report wages and salaries or self-employment income. As expected, dual-earner couples, especially those where spouses earn similar incomes, are much more likely to incur the marriage penalty, whereas one-earner couples are much more likely to have the bonus. For this analysis, a couple is defined as

having two equal earners if both spouses are earners and the higher-earning spouse receives no more than 60 percent of the couple's income.[4]

Breaking down the results by the presence of dependents, Table 2 shows that couples who claim dependents are much more likely to face the marriage penalty than couples without dependents. Certain designs of dependent-related tax benefits, such as the head-of-household status and the phase-out schedule of a credit, cause married couples with children to have a higher tax liability and receive a smaller tax benefit than they would if they were to claim single or head-of-household status on separately filed returns. Studying the marriage tax cost for cohabiting couples, Lin and Tong (2012) explore the specific designs of dependent-related tax provisions that lead to the marriage penalty.

Table 2 Marriage Penalties (MP) and Bonuses (MB) by Family Characteristics						
Family Characteristics	Joint Filers with MP		Neutral	Joint Filers with MB		All Joint Filers
	Share (%)	Average ($)	Share (%)	Share (%)	Average ($)	Average ($)
No Earner	34	-1,353	34	32	3,467	657
One Earner	3	-2,864	11	86	3,524	2,952
Two Earners	50	-1,725	7	43	2,496	212
Equal Earners	68	-2,169	13	19	1,680	-1,142
No Dependent	21	-1,144	16	63	3,019	1,659
Have Dependent(s)	41	-1,903	7	52	3,072	821

IV.   Marriage Penalties and Bonuses by Race and Ethnicity

In this section, we present the marriage penalty results using the race and Hispanic origin (RH) weights imputed to the tax model (Fisher (2023)). We assign couples the RH category of the

---

[4] Spousal income shares are calculated based on information of individual-level income. As described above, we use these ratios to allocate the couple's other sources of income for which individual-level information is not available.

primary filer and tabulate couples' marriage penalty and bonus outcomes based on the imputed RH weights of the primary filer.[5]

A. Averages Across All Members in a Race or Ethnicity Category

Table 3 shows the results for the total as well as by income for four RH categories—White, Black, API, and Hispanic couples. In this sub-section, we focus on the averages across all members in an RH category, leaving the discussion of within-income differences in sub-section *C*. The total rows in Table 3 show that 38 percent of White married-filing-jointly couples have a marriage penalty, compared to 35 percent for API couples, 34 percent for Hispanic couples, and 32 percent for Black couples. Of those with penalties, API joint filers have the highest average penalty amount of $2,191 whereas Black joint filers have the lowest average penalty amount of $1,633. However, measured as the share of tax liability, the penalty is relatively large for Hispanic couples (17 percent of tax) and Black couples (11 percent of tax), compared to White couples (8 percent of tax) and API couples (7 percent of tax).

On the bonus results, 56 percent of Hispanic couples have a marriage bonus whereas the other three RH groups have relatively similar fractions of joint filers with a marriage bonus, 53 percent for White and API couples and 52 percent for Black couples. For those with bonuses, the average bonus amount is much higher for White and API joint filers, over $5,000, than for Black joint filers ($3,628) and Hispanic joint filers ($3,050). However, in terms of the share of tax liability, the bonus is relatively large for Black and Hispanic couples, representing about one quarter of the tax, compared to White and API couples, for whom the bonus represents about 15 percent of the tax.

---

[5] One potential extension of the current work is to estimate the RH weights for both primary and secondary filers on a joint return and tabulate the marriage penalty and bonus results, taking account of both spouses' race and ethnicity. Clark et al. (2023) define the race and ethnicity of a tax unit based on the race and ethnicity of both the primary and secondary filers when studying the demographics of the recipients of the first Economic Impact Payments (EIPs).

Table 3 Marriage Penalties (MP) and Marriage Bonuses (MB) by Race and Ethnicity for 2023									
White Couples									
Adjusted Gross Income ($)	Joint Filers with Marriage Penalties (MP)			Neutral	Joint Filers with Marriage Bonuses (MB)			All Joint Filers		
	Share of Filers (%)	Ave. MP ($)	MP as share of Tax (%)	Share of Filers (%)	Share of Filers (%)	Ave. MB ($)	MB as Share of Tax (%)	Average MP (-) or MB (+) ($)	MP or MB as Share of Tax (%)	Ave. Joint Tax ($)
<0	7	-1,039	13	75	18	22,060	-638	3,915	-142	-2,753
0 < 15000	6	-823	10	79	14	1,459	-25	161	-6	-2,494
15000 < 30000	9	-901	12	39	52	946	-18	409	-10	-4,075
30000 < 40000	27	-619	19	7	67	1,287	-31	693	-18	-3,755
40000 < 50000	40	-1,063	52	3	57	1,660	-78	519	-25	-2,042
50000 < 60000	44	-1,481	339	3	54	1,617	-158	216	-30	-718
60000 < 75000	47	-1,533	-127	5	48	1,670	-1350	88	14	642
75000 < 100000	51	-1,348	-36	8	42	2,495	62	362	9	4,006
100000 < 200000	39	-1,563	-12	4	57	3,475	27	1,348	10	12,908
200000 < 500000	42	-2,423	-6	1	57	9,251	19	4,231	9	44,604
500000 <1000000	26	-5,148	-3	0	74	20,710	14	13,883	9	153,754
>=1000000	27	-14,689	-2	0	72	34,524	4	20,945	2	900,081
Total	38	-1,819	-8	9	53	5,224	14	2,073	7	28,664
Black Couples									
Adjusted Gross Income ($)	Joint Filers with Marriage Penalties (MP)			Neutral	Joint Filers with Marriage Bonuses (MB)			All Joint Filers		
	Share of Filers (%)	Ave. MP ($)	MP as share of Tax (%)	Share of Filers (%)	Share of Filers (%)	Ave. MB ($)	MB as Share of Tax (%)	Average MP (-) or MB (+) ($)	MP or MB as Share of Tax (%)	Ave. Joint Tax ($)
<0	2	-840	17	83	15	13,477	-231	1,964	-58	-3,366
0 < 15000	4	-188	3	80	16	1,068	-22	162	-6	-2,891
15000 < 30000	12	-732	8	37	51	1,056	-24	455	-10	-4,628
30000 < 40000	22	-682	16	5	73	1,463	-45	924	-27	-3,394
40000 < 50000	41	-959	55	2	57	1,665	-72	552	-27	-2,026
50000 < 60000	39	-1,543	116	2	59	1,489	425	267	-92	-291
60000 < 75000	42	-1,612	-167	4	54	1,811	90	314	20	1,592
75000 < 100000	46	-1,293	-35	7	47	2,867	62	766	18	4,259
100000 < 200000	39	-1,643	-13	3	58	3,765	30	1,529	12	12,855
200000 < 500000	45	-2,576	-6	2	53	9,030	19	3,614	8	43,356
500000 <1000000	28	-4,925	-3	0	72	21,099	15	13,847	10	144,540
>=1000000	34	-14,588	-2	0	66	42,344	5	22,783	3	837,268
Total	32	-1,633	-11	16	52	3,628	24	1,362	11	12,470

API Couples

Adjusted Gross Income ($)	Joint Filers with Marriage Penalties (MP)			Neutral	Joint Filers with Marriage Bonuses (MB)			All Joint Filers		
	Share of Filers (%)	Ave. MP ($)	MP as share of Tax (%)	Share of Filers (%)	Share of Filers (%)	Ave. MB ($)	MB as Share of Tax (%)	Average MP (-) or MB (+) ($)	MP or MB as Share of Tax (%)	Ave. Joint Tax ($)
<0	8	-858	19	74	18	15,638	-384	2,723	-102	-2,677
0 < 15000	4	-1,321	21	82	14	1,043	-42	82	-4	-1,961
15000 < 30000	17	-898	12	24	59	1,037	-15	459	-7	-6,324
30000 < 40000	33	-971	11	5	63	1,505	-24	627	-9	-6,852
40000 < 50000	49	-1,494	29	2	49	1,668	-43	95	-2	-4,704
50000 < 60000	43	-2,167	58	3	54	1,551	-80	-97	4	-2,628
60000 < 75000	42	-1,943	103	4	54	1,658	210	72	-23	-313
75000 < 100000	40	-1,314	-56	6	54	2,534	60	841	24	3,529
100000 < 200000	36	-1,677	-13	2	61	4,427	37	2,101	17	12,402
200000 < 500000	45	-2,750	-6	1	53	10,398	21	4,316	9	47,917
500000 <1000000	36	-5,008	-3	0	64	19,357	12	10,497	7	159,940
>=1000000	39	-11,976	-2	0	61	36,214	4	17,217	2	765,450
Total	35	-2,191	-7	12	53	5,628	16	2,228	8	29,368

Hispanic Couples

Adjusted Gross Income ($)	Joint Filers with Marriage Penalties (MP)			Neutral	Joint Filers with Marriage Bonuses (MB)			All Joint Filers		
	Share of Filers (%)	Ave. MP ($)	MP as share of Tax (%)	Share of Filers (%)	Share of Filers (%)	Ave. MB ($)	MB as Share of Tax (%)	Average MP (-) or MB (+) ($)	MP or MB as Share of Tax (%)	Ave Joint Tax ($)
<0	8	-716	15	76	16	10,231	-186	1,628	-51	-3,189
0 < 15000	7	-492	9	69	24	826	-19	166	-5	-3,372
15000 < 30000	13	-1,507	20	28	59	1,018	-16	409	-7	-6,084
30000 < 40000	23	-1,001	15	6	71	1,480	-25	815	-14	-5,875
40000 < 50000	33	-1,412	26	1	66	1,613	-35	594	-12	-4,878
50000 < 60000	33	-1,950	71	2	65	1,404	-76	275	-13	-2,073
60000 < 75000	40	-1,772	160	5	55	1,348	1187	39	-16	-241
75000 < 100000	45	-1,402	-58	5	49	2,084	65	386	13	2,961
100000 < 200000	41	-1,625	-15	3	55	3,770	33	1,418	13	11,278
200000 < 500000	44	-2,714	-7	1	55	9,603	21	4,086	9	43,090
500000 <1000000	27	-5,023	-3	1	72	20,217	13	13,255	9	152,565
>=1000000	33	-12,200	-2	0	67	37,046	4	20,580	2	837,820
Total	34	-1,729	-17	10	56	3,050	28	1,134	12	9,477

B. Distribution of Joint Filers by Family Income, Spousal Income Split, and Dependents

To shed light on the group differences in the marriage penalty and bonus outcomes, Figures 1, 2, 3, and 4 show the distribution of White, Black, API, and Hispanic joint filers by AGI, spouses' income split, and the presence of dependents in the family. In these figures, the AGI breakdowns for the 12 income classes are those listed in Tables 1 and 3. The five income-split categories are defined based on the share of the family's income received by the higher-income spouse, 50-60 percent for category 1, 60-70 percent for category 2, 70-80 percent for category 3, 80-90 percent for category 4, and 90-100 percent for category 5. Hence, couples with two similar earners are in category 1, couples with one dominant earner are in category 5, and other dual-income couples are in categories 2, 3 and 4.[6] These figures point to the various income and non-income influences on the marriage penalty and bonus for couples in each RH category. While many noticeable differences emerge across the distributions, these differences do not uniformly suggest a higher or lower marriage penalty rate or amount for couples in a particular RH group relative to others.

A considerably large fraction of White joint filers are in income categories 8 through 10, corresponding to $75,000 to $500,000 in AGI. Joint filers in these income classes, as shown in Table 1, have a relatively high marriage penalty rate. In contrast, Black and Hispanic couples are more likely than White couples to be present in the lower- and middle-income categories, for which, according to Table 1, the marriage penalty rate is either low or high. API couples with dependents have a large presence in high-income categories 9 through 11, but the fraction of API couples without dependents in low-income categories 2 and 3 are nontrivial, comparable to the fraction for Black families.

---

[6] We loosely refer to an income recipient as an earner.

For spouse income splits, White couples in income categories 8 through 10 are distributed across all income-split categories. That is, although families with one dominant earner are prevalent among these families, most families have two earners and a significant proportion have two similar earners.[7] For the other income classes, White couples with dependents generally have one dominant earner in the family. In comparison, Black, API, and Hispanic families with dependents are more broadly distributed across the five income-split categories. However, a significant proportion of Black, API, and Hispanic couples, with or without dependents and over a wide range of income, are in category 5 with one dominant earner. Finally, Hispanic and API couples are much more likely than White and Black couples to have dependents and live in families with one dominant earner.
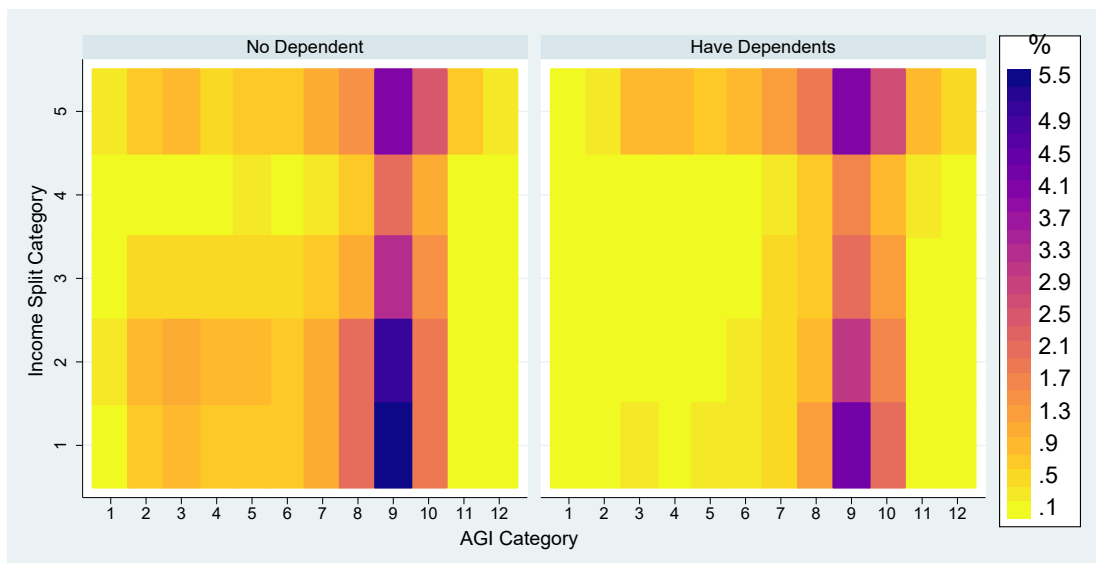

Figure 1. Distribution of White Joint Filers by Income, Spousal Income Split, and Dependent Status

Notes: The AGI thresholds are below $0 for category 1, $0-$15,000 for category 2, $15,000-$30,000 for category 3, $30,000-$40,000 for category 4, $40,000-$50,000 for category 5, $50,000-$60,000 for category 6, $60,000-$75,000 for category 7, $75,000-$100,000 for category 8, $100,000-$200,000 for category 9, $200,000-$500,000 for category 10, $500,000-$1,000,000 for category 11, and above $1,000,000 for category 12. The spousal income split categories are defined by the fraction of joint income received by the higher-income spouse, where 50-60% is for category 1, 60-70% is for category 2, 70-80% for category 3, 80-90% for category 4, and 90-100% for category 5.

---

[7] Of White couples with income $75,000-$500,000, the fraction with one dominant earner is roughly equal to the fraction with two similar earners, both at around 17 percent.
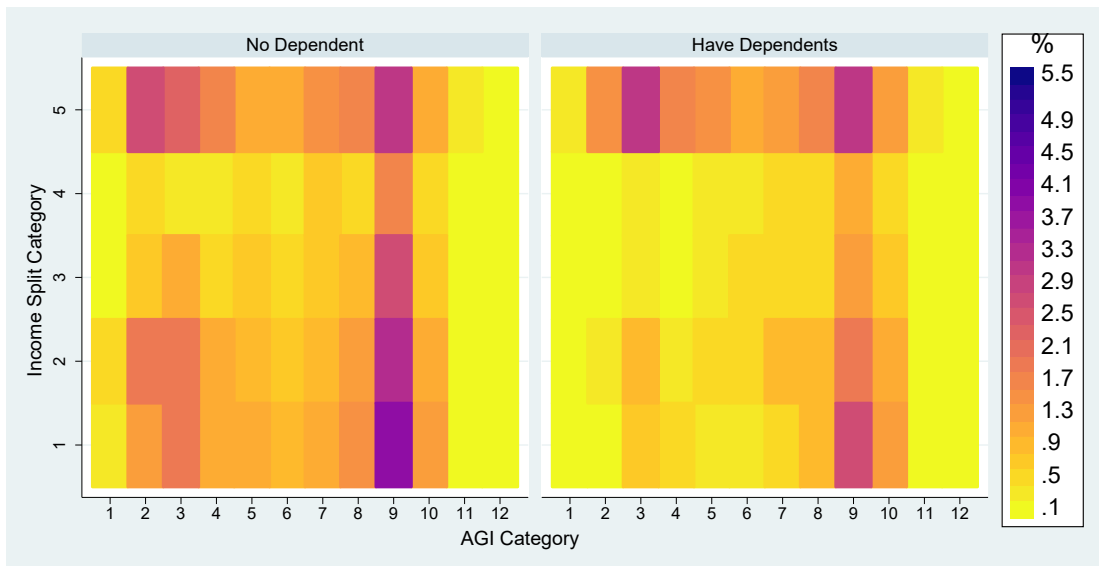
Figure 2. Distribution of Black Joint Filers by Income, Spousal Income Split, and the Dependent Status

Notes: The AGI thresholds are below $0 for category 1, $0-$15,000 for category 2, $15,000-$30,000 for category 3, $30,000-$40,000 for category 4, $40,000-$50,000 for category 5, $50,000-$60,000 for category 6, $60,000-$75,000 for category 7, $75,000-$100,000 for category 8, $100,000-$200,000 for category 9, $200,000-$500,000 for category 10, $500,000-$1,000,000 for category 11, and above $1,000,000 for category 12. The spousal income split categories are defined by the fraction of joint income received by the higher-income spouse, where 50-60% is for category 1, 60-70% is for category 2, 70-80% for category 3, 80-90% for category 4, and 90-100% for category 5.

Figure 3. Distribution of API Joint Filers by Income, Spousal Income Split, and the Dependent Status

Notes: The AGI thresholds are below $0 for category 1, $0-$15,000 for category 2, $15,000-$30,000 for category 3, $30,000-$40,000 for category 4, $40,000-$50,000 for category 5, $50,000-$60,000 for category 6, $60,000-$75,000 for category 7, $75,000-$100,000 for category 8, $100,000-$200,000 for category 9, $200,000-$500,000 for category 10, $500,000-$1,000,000 for category 11, and above $1,000,000 for category 12. The spousal income split categories are defined by the fraction of joint income received by the higher-income spouse, where 50-60% is for category 1, 60-70% is for category 2, 70-80% for category 3, 80-90% for category 4, and 90-100% for category 5.
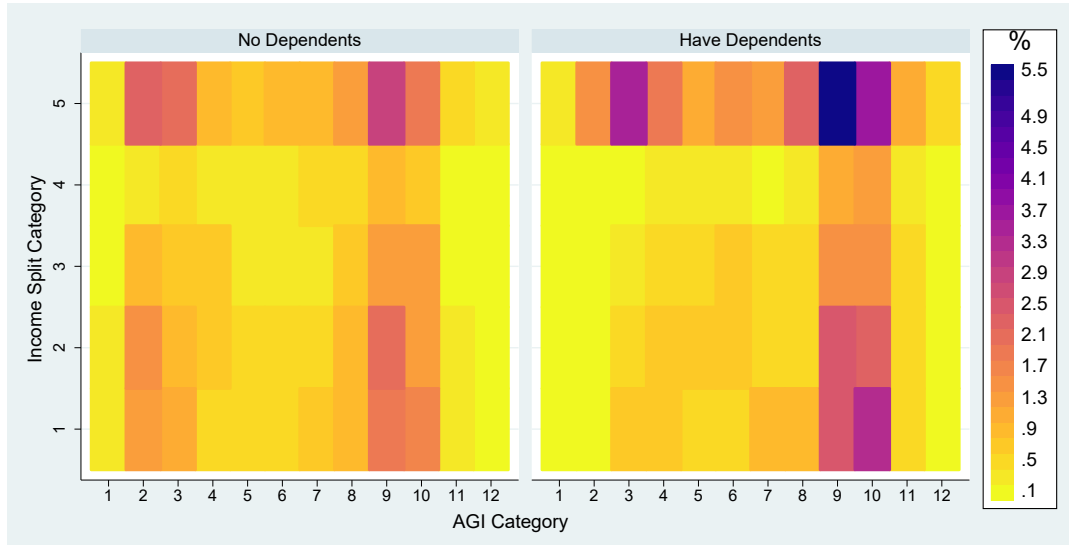
Figure 4. Distribution of Hispanic Joint Filers by Income, Spousal Income Split, and the Dependent Status

Notes: The AGI thresholds are below $0 for category 1, $0-$15,000 for category 2, $15,000-$30,000 for category 3, $30,000-$40,000 for category 4, $40,000-$50,000 for category 5, $50,000-$60,000 for category 6, $60,000-$75,000 for category 7, $75,000-$100,000 for category 8, $100,000-$200,000 for category 9, $200,000-$500,000 for category 10, $500,000-$1,000,000 for category 11, and above $1,000,000 for category 12. The spousal income split categories are defined by the fraction of joint income received by the higher-income spouse, where 50-60% is for category 1, 60-70% is for category 2, 70-80% for category 3, 80-90% for category 4, and 90-100% for category 5.
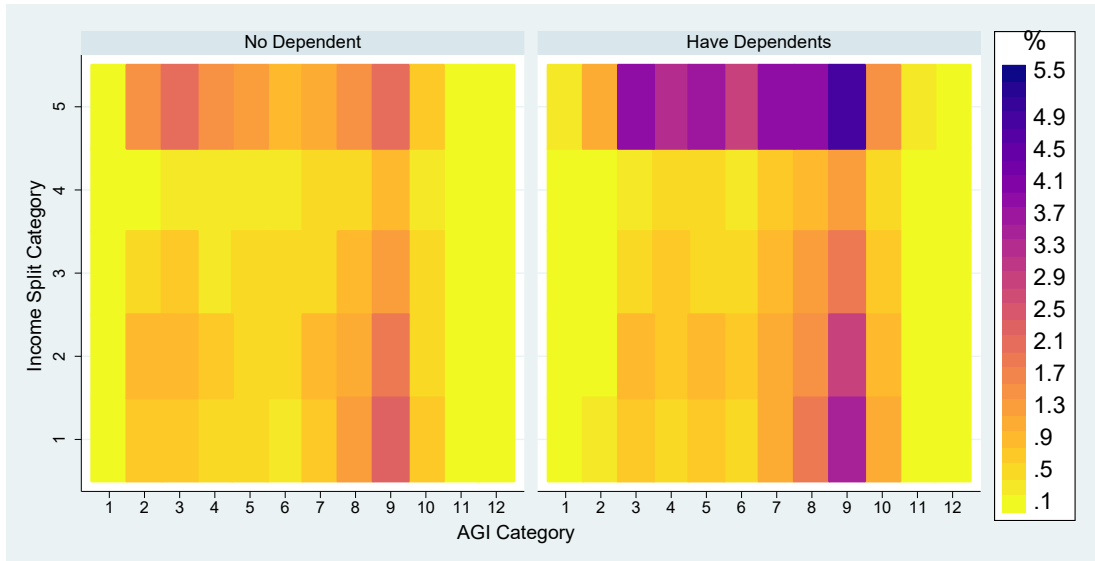
C. Within-Income Differences Between Race and Ethnicity Categories

In addition to the group average differences, Table 3 reveals differences in the marriage penalty and bonus across RH groups within an income class. To see this, Table 4 presents the within-income differences in the results between Black and White joint filers and between Hispanic and White joint files. The differences are calculated as

$x(outcome|income, RH = minority) - x(outcome|income, RH = White)$, where x indicates either the share of filers having the penalty or bonus, or the conditional mean of the penalty or bonus. For probabilities, positive (negative) values indicate that the minority RH group has a higher (lower) likelihood of incurring the penalty or bonus compared to White couples. For the penalty amount, because penalties are expressed in negative values, a larger penalty for the

19

minority RH group than for White couples is shown as a negative figure whereas a smaller penalty for the minority group is shown as a positive figure. For the bonus amount, a larger bonus for the minority group is shown as a positive value and vice versa.

Table 4 Relative Marriage Penalties and Bonuses by Income				
	Marriage Penalty		Marriage Bonus	
Adjusted Gross Income ($)	Rate Difference (ppt)	Ave. Amount Difference ($)	Rate Difference (ppt)	Ave. Amount Difference ($)
Black Couples Relative to White Couples				
0 < 15000	-2	634	1	-391
15000 < 30000	3	169	-1	109
30000 < 40000	-5	-63	7	176
40000 < 50000	1	104	0	6
50000 < 60000	-4	-62	5	-128
60000 < 75000	-5	-79	6	141
75000 < 100000	-5	54	6	373
100000 < 200000	0	-80	1	289
200000 < 500000	3	-153	-4	-220
500000 < 1000000	2	223	-1	389
>=1000000	7	101	-7	7,820
Total	-6	186	-1	-1,596
Hispanic Couples Relative to White Couples				
0 < 15000	1	331	10	-633
15000 < 30000	4	-606	7	72
30000 < 40000	-3	-382	4	193
40000 < 50000	-7	-348	9	-47
50000 < 60000	-11	-469	11	-213
60000 < 75000	-7	-239	7	-322
75000 < 100000	-5	-55	7	-411
100000 < 200000	2	-62	-1	295
200000 < 500000	2	-291	-2	352
500000 < 1000000	1	124	-1	-492
>=1000000	6	2,489	-6	2,522
Total	-4	91	3	-2,174

For any of the eight comparisons in the penalty or bonus rate or amount in Table 4, whether the within-income group difference is positive or negative depends on income. That is, the direction of the difference is not uniform over the full range of the income distribution. Looking at the Black-White comparisons, we find that Black joint filers in several low- and middle-income classes, such as $30,000-$40,000 and $50,000-$100,000, face a marriage penalty at lower rates, and a marriage bonus at higher rates, than White joint filers. In contrast, for income above $200,000, the marriage penalty is more prevalent among Black joint filers than White joint filers. For the average penalty or bonus amount, there is no clear positive or negative pattern over the 12 income classes.

Looking at the Hispanic-White comparisons, we find that Hispanic joint filers are generally less likely to have a penalty and more likely to have a bonus over the low- and middle-income range relative to White joint filers. In contrast, Hispanic joint filers are more likely to incur a penalty and less likely to have a bonus for income levels above $100,000. As for the dollar amount of the penalty, Hispanic couples with a penalty incur a larger penalty relative to White couples over a wide range of income levels. Because Hispanic couples have a lower tax liability relative to White couples with comparable income, the higher penalty for Hispanic couples may represent a smaller or greater share of their tax, depending on whether the tax liability is positive or negative for the income class, as indicated in Table 3. Finally, the series on the bonus amount generally shows a smaller bonus for Hispanic joint filers in the income classes between $40,000 and $100,000.

V.   Spousal Income Splits and Data Source

The results reported in Section IV show a lower penalty rate and higher bonus rate for Black joint filers relative to White joint filers for several income categories below $100,000. This result differs from the findings in several recent studies based on survey data. In this section, we explore the estimates of spousal income splits and discuss the differences between the tax data and survey data that can lead to disparate estimation results.

Using the 2010 Census data, Brown (2021) shows that, compared to White married couples in the same income class, Black married couples are less likely to have only one primary earner in the family and more likely to have two spouses earning similar incomes. Hence, the marriage penalty is expected to be more prevalent among Black families than White families. Using micro-level data from household surveys to estimate marriage penalties, two recent studies by Alm et al. (2023) and Holtzblatt et al. (2023) also show that spouses' earnings are more equal for Black couples than White couples, and this difference is associated with the higher estimated marriage penalty rate and penalty amount for Black families.

We examine the spousal income splits in the tax model and find that the patterns of income splits in the tax data differ from those in survey data. Following Brown (2021), for couples of each race within each income class, we compute the proportion where one spouse receives almost all the couple's total income and the proportion where spouses receive similar incomes. We then compute two income-split ratios for Black couples relative to Whites couples within each income class. The first ratio measures the relative share of couples having one dominant earner in the family, defined as $\frac{P(share>0.9|income,RH=Black)}{P(share>0.9|income,RH=White)}$, and the second ratio measures the relative share of couples having two equal or similar earners, defined as $\frac{P(share \in [0.5,0.6]|income,RH=Black)}{P(share \in [0.5,0.6]|income,RH=White)}$, where *share* is the share of the couple's total income received by the higher-income spouse or 0.5 if the spouses have the same amount of income.

Table 5 shows the results for the base year of the microsimulation model, 2019. As indicated in Table 5, the Black-White relative ratios on spousal income splits are generally compatible with the tax microsimulation results. Columns (1) and (2) presents the ratios in the baseline RH imputation. Black joint filers are more likely to have two similar earners than White joint filers for those families with income above $200,000. Black joint filers in income classes below $200,000 are more likely to live in families with one dominant earner relative to White joint filers in the same income class and, for all but one of these income classes, are less likely to live in families with two similar earners.

Because the relative ratios in columns (1) and (2) depend on the race and Hispanic origin imputation, a question arises of whether the relative ratio estimates are robust with respect to different approaches to the imputation. The baseline imputation is an extended BIFSG model, which uses total income, filing status, age, number of dependents, sex, first name, last name, and the ZIP Code Tabulation Area (ZCTA) as the explanatory variables to make inferences about the race and Hispanic origin category of the primary taxpayer of a filing unit or family (Fisher, 2023). We conduct a sensitivity check by re-calculating the relative ratios based on alternative imputations. Two models are considered. One is BIFSG described in Fisher (2023), which is a model free from the effects of additional tax variables on the predicted RH probabilities, and the other is the baseline model expanded by the primary taxpayer's income share. Note that, in the baseline RH imputation, spousal income shares do not enter the model directly. The purpose of this omission is to avoid overfitting, given our expectation that the couple's income shares can be reasonably predicted based on the selected tax variables and the BIFSG variables on names and geographic locations. As shown in columns (1) through (6), while the relative ratios differ

quantitatively across the three RH imputations, the qualitative results regarding the patterns of the

spousal income division over the income distribution are generally unchanged.

Adjusted Gross Income ($)	Baseline RH Imputation: Extended BIFSG Estimation		BIFSG Estimation		Baseline RH Estimation Expanded by Spousal Income Shares	
	One Dominant Earner (1)	Two Similar Earners (2)	One Dominant Earner (3)	Two Similar Earners (4)	One Dominant Earner (5)	Two Similar Earners (6)
<= 0	1.108	0.474	1.219	0.362	1.110	0.331
0 < 15000	1.506	0.841	1.576	0.783	1.541	0.659
15000 < 30000	1.165	0.909	1.235	0.854	1.113	0.949
30000 < 40000	1.220	1.117	1.277	1.005	1.138	0.839
40000 < 50000	1.116	0.581	1.173	0.595	1.131	0.842
50000 < 60000	1.086	0.787	1.143	0.783	0.992	0.854
60000 < 75000	1.095	0.951	1.172	0.923	1.017	0.863
75000 < 100000	1.203	0.889	1.246	0.923	1.201	0.855
100000 < 200000	1.053	0.973	1.086	0.977	0.945	0.988
200000 < 500000	0.914	1.251	0.921	1.247	0.827	1.414
500000 < 1000000	0.792	1.630	0.857	1.429	0.654	1.973
>=1000000	0.871	1.462	0.901	1.350	0.800	1.591

Table 5 Shares of Black Couples Relative to White Couples for Two Types of Spousal Division of Income, 2019

Notes: The relative ratios for one dominant earner are calculated as $\frac{P(share>0.9|income,RH=Black)}{P(share>0.9|income,RH=White)}$, and the relative

ratios for two similar earners are calculated as $\frac{P(share \in[0.5,0.6]|income,RH=Black)}{P(share \in[0.5,0.6]|income,RH=White)}$, where *share* is the share of the couple's total income received by the higher-income spouse or 0.5 if the spouses have the same amount of income. In this analysis, the term "earner" is used interchangeably with an income recipient.

Income and marital status recorded in the survey data can differ from the income and

filing status reported on tax returns, consequently affecting the estimates of spousal income splits.

Unlike survey data in which respondents' income is recorded on a questionnaire or else imputed,

the tax model relies on tax forms and third-party information returns, supplemented with allocation assumptions, to split a married couple's joint income and arrive at individual-level income. We conduct a simple check on the difference in the estimates of spousal income shares between the tax data and the 2020 Current Population Survey (CPS) Annual Social and Economic (ASEC) Supplement. Table 6 shows the relative proportions between Black and White married couples who derive equal or similar incomes from the sources for which the tax model has definite individual-level information from tax forms or third-party reports. These relative ratios, defined in the similar fashion to those for Table 5, are equal to $\frac{P(share \in [0.5,0.6]|income,RH=Black)}{P(share \in [0.5,0.6]|income,RH=White)}$, where *share* is the share of the specific sources of income received by the spouse who has more of this income or 0.5 if the spouses have the same amount of income.

Data and Adjusted Gross Income ($)	Wages and Salaries (1)	(1) + Self-Employment Income (2)	(2) + Social Security Income (3)
2020 ASEC			
0<= 50000	1.93	1.82	1.06
50000<= 100000	1.67	1.59	1.38
100000<= 200000	1.35	1.29	1.24
>200000	1.37	1.35	1.31
2023 Tax Model			
0<= 50000	0.90	0.98	0.94
50000<= 75000	1.06	1.01	0.90
75000<= 100000	0.84	0.80	0.84
100000<= 200000	0.83	0.82	0.96
200000<= 500000	1.15	1.18	1.23
>500000	1.07	1.13	1.28

Table 6 Share of Black Married Couples Relative to White Married Couples with Similar Incomes by Sources of Income

Notes: The ratios for the ASEC data are calculated based on person-level income for married couples, and the race is that of the reference person. The ratios for the tax model are calculated based on income reported on joint returns filed by married couples and income reported on third-party information returns with respect to these taxpayers. Negative self-employment income for a spouse is treated as zero.

The results confirm that substantial differences exist in spousal income splits between the ASEC and tax data. For low-, middle-, and middle-high-income families, the relative Black-to-White ratios for the proportion of married couples with similar incomes are considerably higher in the Census data than those calculated based on tax data. For the income sources shown in Table 6, no assumption is made in our analysis about the income split between spouses. Individual-level self-employment income is assigned based on the taxpayer's Schedule SE and individual-level wages and Social Security income come from third-party information reports. Given that wages and Social Security income are not subject to self-reporting errors, and they represent a substantial share, approximately 70 percent, of the aggregate total income for joint filers in our model, income data in the tax model should provide a higher quality information than income in survey data for estimating marriage penalties and bonuses.

There are known differences in filing status and the assignment of children between tax return data and tax units constructed with CPS data. Using linked tax return and Census data, Mok (2017) finds that about 13 percent of married tax units constructed with the CPS data, or 8 million out of the total 62.1 million units, claimed single or head-of-household status on the tax returns in tax year 2006. These persons would be included in the assessment of marriage penalties based on the CPS data but not in the tax data analysis on joint filers. Using the CPS data, Jones and O'Hara (2016) and Splinter et al. (2017) show evidence that taxpayers engage in tax minimization strategies to assign children among taxpayers within the same household when more than one taxpayer in the household is eligible to claim child-related credits. Consequently, estimates about tax units with dependent children will differ between the two data files.

In addition to income, filing status, and the allocation of children, tax data and survey data differ in how information about race and ethnicity is recorded. The use of imputed race and

ethnicity information in the current analysis is a distinct approach from self-reporting of race and ethnicity in survey data. To what extent this data difference affects the analysis results is an area of ongoing research.

VI.   Conclusion

In this paper, we use the race and Hispanic origin (RH) information imputed to the Treasury's tax model to estimate marriage penalties and bonuses for married-filing-jointly couples in four RH categories. The microsimulation results show that, for married couples in higher income categories, the marriage penalty rate is higher, and the marriage bonus rate is lower, for Black and Hispanic couples than for White couples. In contrast, White couples in several lower income categories face a higher penalty rate and a lower bonus rate. Further analysis shows that differences in the distribution of income and differences in non-income characteristics across groups contribute to these results. In addition, the Black-White differences in penalty rates are consistent with the patterns of spousal income splits in the underlying data. Unlike survey data, the tax model does not suggest a higher prevalence of two equal-earning spouses among Black families throughout the entire range of the income distribution. Because the conclusions about group differences in the marriage penalty and bonus outcomes for certain income categories depend on whether tax data or survey data is used for the analysis, further investigation regarding the data differences should be pursued.

References

Alm, James, and Leslie A. Whittington, 1995. Does the Income Tax Affect Marital Decision? *National Tax Journal* 48(4), 565-572.

Alm, James, and Leslie A. Whittington, 1996. The Rise and Fall and Rise…of the Marriage Tax. *National Tax Journal* 49(4), 571-589.

Alm, James, and Leslie A. Whittington, 1997. Income Taxes and the Timing of Marital Decisions. *Journal of Public Economics* 64(2), 219-240.

Alm, James, and Leslie A. Whittington, 1999. For Love or Money? The Impact of Income Taxes on Marriage. *Economica* 66(263), 297-316.

Alm, James, and Leslie A. Whittington, 2001. Tax Reduction, Tax Change, and the Marriage Penalty. *National Tax Journal* 54(3), 455-472.

Alm, James J., Sebastian Leguizamon, and Susane Leguizamon, 2023. Race, Ethnicity, and Taxation of the Faily: The Many Shades of the Marriage Penalty/Bonus. *National Tax Journal* 76(3), 525-560.

Brown, Dorothy A., 1997. The Marriage Bonus/Penalty in Black and White. *University of Cincinnati Law Review* 65, 787-798.

Brown, Dorothy A., 2021. *The Whiteness of Wealth*. Crown Publishing Group.

Bull, Nicholas, Janet Holtzblatt, James R. Nunns, and Robert Rebelein, 1999. *Defining and Measuring Penalties and Bonuses*. Treasury Department Office of Tax Analysis Working Paper 82.

Clark, Leah R., Adam J. Cole, Amanda Eng, Ben S. Meiselman, Nikolas Pharris-Ciurej, Kevin Pierce, and John Voorheis, 2023. *The Demographics of the Recipients of the First Economic Impact Payment*. U.S. Census Bureau working paper.

Cronin, Julie-Anne, Portia DeFilippes, and Robin Fisher, 2023. Tax Expenditures by Race and Hispanic Ethnicity: An Application of the U.S. Treasury Department's Race and Hispanic Ethnicity Imputation. Treasury Department Office of Tax Analysis Working Paper 122.

Dickert-Conlin, Stacy, and Scott Houser, 1998. Taxes and Transfers: A New Look at the Marriage Penalty, 1998. *National Tax Journal* 51(2), 175-217.

Fisher, Robin, 2023. *Estimation of Race and Ethnicity by Re-Weighting Tax Data*. Treasury Department Office of Tax Analysis Technical Paper 11.

Gillette, Robert, Janet Holtzblatt, and Emily Y. Lin, 2005. Marriage Penalties and Bonuses: A Longer Term Perspective. *Proceedings of 97th Annual Conference on Taxatio*n. Washington, D.C.: National Tax Association, 468-478.

Gillette, Robert, Janet Holtzblatt, and Emily Y. Lin, 2006. What Gives Rise to Changes in Marriage Penalties and Bonuses: A Panel Model Approach. *Proceedings of 98th Annual Conference on Taxation.* Washington, D.C.: National Tax Association, 452-463.

Holtzblatt, Janet, and Robert Rebelein, 2000. Measuring the Effect of the EITC on Marriage Penalties and Bonuses. *National Tax Journal*, Part 2, 53(4), 1107-1133.

Holtzblatt, Janet, Swati Joshi, Nora Cahill, and William G. Gale, 2023. *Racial Disparities in the Income Tax Treatment of Marriage*. NBER Working Paper 31805.

Jones, Maggie R., and Amy B. O'Hara, 2016. "Do Double-Up Families Minimize Household-Level Tax Burden?" *National Tax Journal* 69(3), 613-640.

LaLumia, Sara, 2008. The Effects of Joint Taxation of Married Couples on Labor Supply and Non-Wage Income. *Journal of Public Economics*, Vol. 92, 1698-1719.

Lin, Emily Y., and Patricia K. Tong, 2012. Marriage and Taxes: What Can We Learn from Tax Returns Filed by Cohabiting Couples? *National Tax Journal* 65(4), 807-826.

Lin, Emily Y., and Patricia K. Tong, 2014. Effects of Marriage Penalty Relief Tax Policy on Marriage Taxes and Marginal Tax Rates of Cohabiting Couples. *Proceedings of 107th Annual Conference on Taxation. Washington*. DC: National Tax Association.

Maag, Elaine, 2005. Taxes and Marriage for Cohabiting Parents. *Tax Note*s. May 23, 2005: 1031.

Mok, Shannon, 2007. An Evaluation of Using Linked Survey and Administrative Data to Impute Nonfilers to the Population of Tax Return Filers. Congressional Budget Office Working Paper 2017-06.

Moran, Beverly I. and William Whitford, 1996. A Black Critique of the Internal Revenue Code. *Wisconsin Law Review* 1996, 751-820.

Sjoquist, David L., and Mary Beth Walker, 1995. The Marriage Tax and the Rate and Timing of Marriage. *National Tax Journal* 48(4), 547-558.

Splinter, David, Jeff Larrimore, and Jacob Mortenson, 2017. "Whose Child Is This? Shifting of Dependents Among EITC Claimants Within the Same Household." *National Tax Journal* 70(4), 737-758.

Appendix A: Tax Parameters for Tax Year 2023

Table A-1 Rate Brackets by Filing Status

Tax Rate	Taxable Income							
	Married-Filing-Jointly and Surviving Spouse		Married-Filing-Separately		Head-of-Household		Single	
	over	not over	over	not over	over	not over	over	not over
10%	$0	$22,000	$0	$11,000	$0	$15,750	$0	$11,000
12%	$22,000	$89,450	$11,000	$44,725	$15,750	$59,850	$11,000	$44,725
22%	$89,450	$190,750	$44,725	$95,375	$59,850	$95,350	$44,725	$95,375
24%	$190,750	$364,200	$95,375	$182,100	$95,350	$182,100	$95,375	$182,100
32%	$364,200	$462,500	$182,100	$231,250	$182,100	$231,250	$182,100	$231,250
35%	$462,500	$693,750	$231,250	$346,875	$231,250	$578,100	$231,250	$578,125
37%	$693,750	-	$346,875	-	$578,100	-	$578,125	-

Data source: IRS Revenue Procedure 2022-38.

Table A-2 Earned Income Tax Credit

Item	Number of Qualifying Children			
	Zero	One	Two	Three or More
Maximum earned income amount for maximum credit	$7,840	$11,750	$16,510	$16,510
Credit rate (%)	7.65	34	40	45
Maximum amount of credit	$600	$3,995	$6,604	$7,430
Phaseout rate (%)	7.65	15.98	21.06	21.06
Income range over which credit phases out for single, head-of-household, surviving spouse, and married-filing-separately*:				
Beginning amount	$9,800	$21,560	$21,560	$21,560
Completed amount	$17,640	$46,560	$52,918	$56,838
Income range over which credit phases out for married-filing-jointly:				
Beginning amount	$16,370	$28,120	$28,120	$28,120
Completed amount	$24,210	$53,120	$59,478	$63,398

*For married taxpayers who claim married-filing-separately status and satisfy special rules.

Data source: IRS Revenue Procedure 2022-38.

Appendix B: Lower-Income Spouse Claims Dependents on the Individual Return

Table B-1 Marriage Penalties (MP) and Marriage Bonuses (MB) in 2023

Adjusted Gross Income ($)	Joint Filers with Marriage Penalties (MP)			Neutral	Joint Filers with Marriage Bonuses (MB)			All Joint Filers		
	Share of Filers (%)	Ave. MP ($)	MP as Share of Tax (%)	Share of Filers (%)	Share of Filers (%)	Ave. MB ($)	MB as Share of Tax (%)	Ave. MP(-) or MB(+) ($)	MP or MB as Share of Tax (%)	Ave. Joint Tax ($)
<0	7	-1,751	29	75	18	19,838	-459	3,527	-124	-2,845
0 < 15000	6	-809	11	78	16	1,712	-33	231	-9	-2,599
15000 < 30000	8	-1,331	18	34	58	1,851	-32	977	-21	-4,706
30000 < 40000	19	-676	25	6	75	2,000	-40	1,370	-31	-4,383
40000 < 50000	33	-1,136	53	3	65	2,236	-70	1,078	-39	-2,795
50000 < 60000	37	-1,838	295	2	60	2,023	-145	529	-51	-1,047
60000 < 75000	43	-2,271	-254	5	53	2,012	-4,651	97	20	491
75000 < 100000	48	-2,277	-63	7	45	2,875	76	197	5	3,859
100000 < 200000	40	-1,593	-12	4	56	3,848	31	1,539	12	12,751
200000 < 500000	44	-2,600	-6	1	55	9,257	20	3,958	9	44,677
500000 <1000000	30	-5,644	-4	0	70	20,757	14	12,723	8	154,014
>=1000000	30	-14,470	-2	0	70	34,883	4	20,163	2	888,182
Total	36	-2,149	-9	10	54	5,110	17	2,011	8	25,798