Explaining the Fall and Rise in the Tax Cost of Marriage: The Effect of Tax Laws and Demographic Trends, 1984–97

Abstract - *This paper documents changes in the tax consequence of marriage over the period 1984 to 1997. Reversing the impact of the 1986 Tax Reform Act, tax acts in 1990 and 1993 are found to increasingly tax marriage. Our decomposition of different components show that, altogether, tax laws explain most (55–60 percent) of the change in the tax cost of marriage between 1984 and 1997. Our decompositions also show that the non–tax changes are almost exclusively driven by the changing labor market attachment of married women (as measured by their share of family earnings) and not by family size or total family income.*

INTRODUCTION

Notions of vertical and horizontal equity are central to the design of income tax code. There is general agreement that the tax code should be progressive, although disagreement exists on the degree of progressivity. There is also general agreement that the tax code should treat equals equally, defined on the basis of *family* income. A further desirable feature of the tax code is that it be marriage neutral. By marriage neutrality, it is meant that the total tax burden for a couple with the same total income should not change upon marriage. It has been shown, however, that any tax system will violate at least one of these principles (Rosen, 1977). In the United States, the federal income tax code is progressive, and maintains horizontal equity based on family income, and therefore is not marriage neutral. It is interesting to note that the tax treatment of the family in the United States is quite different from that in other industrialized nations. Most other countries base their tax on the individual and not on the family, and thus maintain progressivity and marriage neutrality but not horizontal equity across families (Pechman and Engelhardt, 1990; Congressional Budget Office [CBO], 1997).

The appropriate tax treatment of the family has been a topic of discussion in the United States since the adoption of joint filing in 1948.[1] Interest in the topic has increased in recent

Nada Eissa & Hilary Williamson Hoynes

University of California, Berkeley, CA 94720-3880, and NBER, Cambridge, MA 02138

---

[1] In fact, joint filing was adopted to equalize the treatment of married couples in community property and non–community property states.

years both among policymakers and researchers. Both Houses of Congress recently passed bills that include provisions to reduce or eliminate the marriage penalty in the tax code. In this paper, we examine the impact of changes in the United States federal income tax code on marriage incentives.

This work contributes to a large body of work on the marriage non–neutrality of the tax code.[2] While the bulk has examined the cross–sectional distribution across families, a few studies have examined the impact of tax reforms. An important concern in the literature has been the measurement of the marriage tax. While the definition of marriage non–neutrality is straightforward, its measurement is somewhat complicated. The problem with measuring the marriage tax is that it requires calculating tax liability in a state of the world that is never observed. As such, assumptions regarding the allocation of asset income and custody of children are required. A focus of the research has therefore been to estimate the marriage tax under different assumptions.

Our analysis is based on data from the Current Population Survey covering tax years 1984–97, and is composed of three parts. We first calculate and document changes to the tax cost of marriage over the period 1984–97, during which two major tax acts were passed. In this context, we pay particular attention to differences in the level and change in the tax cost of marriage across families in different demographic and income groups. We also highlight the importance of various features of the tax code. Recent expansions to the Earned Income Tax Credit (EITC) in the tax acts of 1986 (TRA86) and 1990 and 1993 (OBRA90 and OBRA93) have dramatically changed the progressivity of

the tax schedule at the lower–end of the income distribution. As a consequence these expansions have had a substantial impact on the tax cost of marriage. An important contribution therefore is to examine the role of the EITC versus other features of the tax code in analyzing the cross–sectional and over time variation in the tax cost of marriage. To accomplish this, we must extend previous work by examining the data through tax year 1997. Second, we decompose the changes in the marriage penalty into their components to distinguish the impact of changing family demographics (such as income, the distribution of earnings in the family, and number of children) from changing tax law. We extend previous work on such decompositions by isolating the role of each of the demographic characteristics.

Our results show that the tax consequence of marriage in the United States varies significantly in the cross section and over time. In the cross section, the tax consequences of marriage vary by a number of family characteristics, including income, the distribution of earnings with the family, as well as family size (the presence and number of children). These observations are well known. We also find, however, that the EITC leads to marriage subsidies for very low–income taxpayers but marriage penalties for middle–income taxpayers. Over time, the data suggest two noteworthy patterns. First, the likelihood of facing a marriage tax penalty (subsidy) is rising (falling) over time so that marriage is more likely to be taxed in 1997 than it was in 1984. Second, we find substantial differences in the *change* in the tax consequence of marriage by income class. The marriage tax is increasing most substantially for taxpayers with incomes between $30,000 and $50,000, but declining

---

[2] For example, see the studies by Alm and Whittington (1996), Congressional Budget Office (1997), Dickert–Conlin and Houser (1998), Feenberg (1983), Feenberg and Rosen (1995), and Rosen (1987). Most recently, the U.S. Department of the Treasury conducted a comprehensive study of the marriage penalty in federal tax codes (Bull, Holtzblatt, Nunns, and Rebelein, 1999).

for taxpayers with incomes below $20,000 (1997$). The substantial time variation in the overall tax consequences for families with children, as well as along the income distribution, are shown to be driven largely by expansions to the EITC.

Our decompositions of these changes suggest three important conclusions. First, with the exception of the TRA86 period, we find that taxes and demographics reinforced each other to raise the marriage tax cost. Between 1984 and 1987, TRA86 provisions reduced the tax cost of marriage by $338 (1997$) on average, while changing demographic characteristics raised it by $120. Nonetheless, we find the expected result that changes in tax laws explain more than half the changes to the marriage tax cost over this period. About 55–60 percent of the change in the marriage tax is due to changing the tax laws. Third, we also find that the non–tax changes in the marriage tax cost over time are almost exclusively driven by the changing labor market attachment of married women (as measured by their share of family earnings) and not by family size or total family income. This finding is new, but it is not surprising. The degree of labor market attachment of wives interacts in important ways with the progressivity of the tax code. *Ceteris paribus*, a progressive schedule imposes a higher tax rate on secondary earnings upon marriage (creating a marriage tax). In 1997, the additional marginal rate on secondary earnings could have been as high as 25 percentage points. Earning just $1000 more per year could raise the marriage tax substantially.

To a large extent, the marriage tax is an "unintended" consequence of other choices regarding the tax code, namely taxing the family using a progressive schedule. Given disagreement about both how progressive the tax schedule should be and about whether to tax the individual or the family, evaluating and understanding the implications of these choices for the marriage tax becomes important.[3] Note that the marriage tax would be substantially reduced if we choose a proportional tax, and eliminated if we tax individual income. In this context, this paper contributes in an important way by showing that the rising labor market attachment of married women exacerbates these consequences.[4]

This paper is organized as follows. The next section presents a brief overview and discussion of tax schemes and the implications of marriage. The third section summarizes existing studies on the marriage penalty. The fourth section describes the data. The fifth section presents the basic results on marriage taxes across families and over time. The results of decomposing the changes into demographics and tax reform is presented in the sixth section. The seventh section presents some sensitivity tests; the conclusion follows.

TAXES AND MARRIAGE

Tax Treatment of the Family

Notions of vertical and horizontal equity are central to the design of income tax code. There is general agreement that the tax code should be progressive, although disagreement exists on the degree of progressivity. There is also general agreement that the tax code should treat equals equally, defined on the basis of *family* income. Together, however, these two principles of taxation imply that the tax code will not be marriage neutral (Rosen, 1977).[5] By marriage non–neutrality, it is

---

[3] At a more basic level, there is also disagreement about the notion of horizontal equity (Kaplow, 2000).

[4] An interesting question is to what extent has the rising labor market participation of married women rendered a windfall on the government (because these couples are paying more in taxes than if they remain single)?

[5] Marriage neutrality is attainable if horizontal equity is defined on the basis of individual instead of family income.

meant that taxes for a married couple differs from that for two unmarried individuals with the same total income and family size.

Although marriage neutrality of the tax code has been espoused by some, it is not at all clear that the tax system should treat marriage neutrally. On the one hand, married couples benefit from economies of scale deriving from sharing resources. On these grounds, marriage should be taxed because it raises ability to pay.[6] The benefits of economies of scale accrue to any group of individuals residing together, however, but are not taxed generally if they accrue to cohabiting couples, adult children living with parents, or group–home residents. Taking this view seriously requires taxing these other arrangements. On the other hand, marriage may confer social benefits in the form of child well–being. To the extent that the relationship between marriage and child well–being is causal, and to the extent that individual marriage decisions ignore the social benefits, a strong argument for government intervention emerges. Here, the tax code should subsidize marriage. In addition, the strong correlation between poverty and single–parent families suggests that marriage may be viewed as a cost–effective poverty alleviation policy.

The Federal Income Tax

While 59 provisions of the federal income tax code alter tax liability by marital status (GAO, 1996), it is primarily the combination of a progressive income tax schedule and taxation on the basis of total family income that generates marriage non–neutrality. Features of the tax code most often discussed include the different statutory federal income tax schedules and standard deductions depending on family (i.e., filing) status.

The Earned Income Tax Credit (EITC) also plays an important role in generating marriage non–neutrality. A taxpayer's eligibility for the EITC depends on the taxpayer's earned income (or in some cases adjusted gross income), and the number of qualifying children who meet certain age, relationship, and residency tests. There are three regions in the credit schedule. The initial phase–in region transfers an amount equal to the subsidy rate times their earnings. In the flat region, the family receives the maximum credit. In the phase–out region, the credit is phased out at a some phase–out rate. Because the EITC is based on *family income* and because the same credit schedule applies to all taxpayers with children regardless of marital status, the EITC is not neutral with respect to marriage. Other, less–prominent, provisions in the tax code that generate marriage non–neutrality include those related to the child–care tax credit and the taxation of social security benefits.

Together these features operate to tax marriage in some cases and subsidize it in other cases. In tax year 1999, approximately 48 percent of couples filing a joint federal tax return faced a marriage penalty averaging $1,141, while 41 percent received a marriage bonus averaging $1,274 (Bull et al., 1999). These modest overall penalties mask substantial heterogeneity in the population. Penalized married taxpayers with less than $20,000 earned income face an average marriage penalty of 8 percent of income. A significant share of marriage penalties and subsidies incurred by lower income families is caused by the loss of the EITC (CBO, 1997). In tax year 1998, the maximum credit amount is $3,756 for a family with two or more children, and $2,271 for a family with one child. In the extreme case of a married couple with 4 children and $24,700 of

---

[6] Other benefits that accrue to married couples include family coverage in employer–provided health insurance. Such benefits create additional justifications for taxing marriage.

earnings, the maximum EITC marriage penalty for tax year 1998 is $6,517 (26.4 percent of income).

Table 1 presents calculations to illustrate the potential size of the EITC and income tax marriage penalty using 1997 tax law (the most recent tax year used in the paper). Each panel represents calculations for hypothetical couples differing by the number of children and the distribution of earnings within the couple. We present the taxpayers' gross federal income tax liability, their EITC, and net federal tax liability. The last column of the table presents the marriage tax consequence, calculated as the difference between the couple's joint tax liability and the sum of their individual tax liabilities if not mar-

ried.[7] A positive value in column 5 corresponds to a tax penalty while a negative value corresponds to a tax subsidy.

The calculations highlight several important determinants of the tax consequence of marriage. Most notable is that the employment status of the secondary earner implies very different tax consequences: whereas two–earner couples face marriage tax penalties, single–earner married couples receive marriage tax bonuses [Panel 1 vs Panel 2]. In fact, a married couple's tax penalty (subsidy) is increasing (decreasing) with the share of 'secondary–earnings' in the family (Table 2). In either case (penalty vs subsidy), the EITC exacerbates the marriage–tax consequences. In addition, marriage tax penal-

TABLE 1
FEDERAL INCOME TAX AND EITC CONSEQUENCES OF MARRIAGE
HYPOTHETICAL FAMILIES, 1997 TAX YEAR

		Earnings (1)	Gross Federal Tax Liability (2)	EITC (3)	Net Federal Tax Liability (4)	Marriage Tax– Consequence (5)
Panel 1: Two children, Female Custodial Parent, Female Employed						
Married		$24,000	$975	$1,109	–$134	
Single	Male	$12,000	$780	$0	$780	+$2,733 (+11.4%)
	Female	$12,000	$0	$3,647	–$3,647	
Panel 2: Two children, Female Custodial Parent, Female Not Employed						
Married		$24,000	$975	$1,109	–$134	
Single	Male	$24,000	$2,584	$0	$2,584	–$2,718 (–11.3%)
	Female	$0	$0	$0	$0	
Panel 3: Two children, Split Between Parents, Female Employed						
Married		$24,000	$975	$1,109	–$134	
Single	Male	$12,000	$98	$2,203	–$2,105	+$4,076 (+17.0%)
	Female	$12,000	$98	$2,203	–$2,105	
Panel 4: No Children, Female Not Employed						
Married		$24,000	$1,770	$0	$1,770	
Single	Male	$24,000	$2,584	$0	$2,584	–$814 (–3.4%)
	Female	$0	$0	$0	$0	
Panel 5: No Children, Female Employed						
Married		$24,000	$1,770	$0	$1,770	
Single	Male	$12,000	$780	$0	$780	+$210 (+0.9%)
	Female	$12,000	$780	$0	$780	

Notes: All monetary values are in 1997 dollars. For all simulations we assume that the family has no non–labor income. A positive value represents a marriage penalty (loss in net income by being married), while a negative figure represents a marriage subsidy (gain in net income by being married).

---

[7] These calculations assume the couple cohabits upon separation. This assumption allows us to ignore other costs, such as housing and the loss associated with separate housing (lost economies of scale).

TABLE 2
MARRIAGE TAX CONSEQUENCES BY LEVEL AND COMPOSITION OF FAMILY EARNINGS
HYPOTHETICAL FAMILIES, 1997 TAX YEAR

| Family Earnings: | *Scenario: Two children, Wife Custodial Parent* | | | |
| | Wife Share of Total Family Earnings | | | |
	0	0.25	0.50	1.0
10,000	–4,136	–2587	–1324	0
	–41.4%	–25.9%	–13.2%	0.0%
20,000	–3,561	–811	1595	–525
	–17.8%	–4.1%	8.0%	–2.6%
30,000	–1,605	2520	3504	–525
	-5.4%	8.4%	11.7%	–1.8%
40,000	–2,717	3551	2451	–525
	–6.8%	8.9%	6.1%	–1.3%

Notes: For all simulations we assume that the family has two children which both reside with the mother, and no non–labor income. A positive value represents a marriage penalty (loss in net income by being married), while a negative figure represents a marriage surplus (gain in net income by being married).

ties increase with family size (number of children) among EITC–eligible couples. Panel 1 shows that a dual–earning couple with two children faces a sizeable marriage tax penalty of $2,733 (11.4 percent of income). A similar childless couple, on the other hand, faces a tax penalty of $210 (1 percent of income).

Changes in the Federal Income Tax

Starting with the Tax Reform Act of 1986 (TRA86), several tax acts between 1984 and 1997 dramatically changed the income tax code in the United States. TRA86 collapsed the income tax schedule from 11 to 2 nominal brackets, reduced the highest marginal tax rate from 50 to 28 percent, increased exemption amounts and the standard deduction, and indexed tax brackets. By reducing the progressivity of the income tax, TRA86 reduced the overall marriage penalty (Rosen, 1987). Table 3 presents federal income tax parameters for 1984–97. It shows the changes in the tax schedule over the period at the very bottom and top of the income distribution. Along with the number of tax brackets, these numbers suggest a decline in the statutory progressivity from 1984

to 1988, followed by an increase that is substantial especially after OBRA93. The most notable feature of the 1993 tax law for our purposes is the expansion of the EITC, which dramatically altered the tax schedule at the bottom of the income distribution. The EITC expansions through tax acts in 1986, 1990, and 1993 were such that the associated marriage tax cost (including federal taxes) could be as high as $2,733 for a working couple with two children. This occurs because of the increase in the size of the maximum credit, the introduction and sharp increase in additional benefits for a second child, and the expansion of eligibility to individuals earning nearly $30,000 (see Table 3 for EITC parameters). As a result, EITC expansions over this period have affected an increasing proportion of the population, so that more than three times as many married couples are eligible in 1997 than in 1984.

LITERATURE REVIEW

An important line of research on the marriage tax cost estimates the magnitude of penalties and subsidies among married couples at a point in time (see Bull et al.

TABLE 3
FEDERAL INCOME TAX AND EITC PARAMETERS
1984–96

	Federal Income Tax Parameters		EITC Parameters		
Year	[lowest, highest marginal tax rate-%)] (number of brackets)	Personal Exemption, Standard Deduction [1]	Phase-In Rate (%)	Maximum Credit	Maximum Earnings
1984 [2]	[0, 50] (15)	$1000, 0/0/0	10.0	$500	$10,000
1985 [2]	[0, 50] (15)	$1040, 0/0/0	11.0	$550	$11,000
1986 [2]	[0, 50] (15)	$1080, 0/0/0	11.0	$550	$11,000
TRA86					
1987	[11,39] (5)	$1900, 2540/2540/3760	14.0	$851	$15,432
1988	[15,28] (2)	$1950, 3000/4400/5000	14.0	$874	$18,576
1989	[15,28] (2)	$2000, 3100/4550/5200	14.0	$910	$19,340
1990	[15,28] (2)	$2050, 3250/4750/5450	14.0	$953	$20,264
OBRA90					
1991 [3]	[15,31] (3)	$2150, 3400/5000/5700	16.7 [4]	$1,192	$21,250
			17.3 [5]	$1,235	
1992 [3]	[15,31] (3)	$2300, 3600/5250/6000	17.6 [4]	$1,324	$22,370
			18.4 [5]	$1,384	
1993 [3]	[15,39.6] (5)	$2350, 3700/5450/6200	18.5 [4]	$1,434	$23,050
			19.5 [5]	$1,511	
OBRA93					
1994	[15,39.6] (5)	$2450, 3800/5600/6350	26.3 [4]	$2,038	$23,755
			30.0 [5]	$2,528	$25,296
			7.65 [6]	$306	$9,000
1995	[15,39.6] (5)	$2500, 3900/5750/6550	34.0 [4]	$2,094	$24,396
			36.0 [5]	$3,110	$26,673
			7.65 [6]	$314	$9,230
1996	[15,39.6] (5)	$2550, 4000/5900/6700	34.0 [4]	$2,152	$25,078
			40.0 [5]	$3,556	$28,495
			7.65 [6]	$323	$9,500
1997	[15,39.6] (5)	$2650, 4150/6050/6900	34.0 [4]	$2,210	$25,750
			40.0 [5]	$3,656	$29,290
			7.65 [6]	$332	$9,770

[1] The standard deductions are given for single/head of household/married filing joint.
[2] In 1984–6, there were no standard deductions because of the zero bracket. The 15 brackets include the zero bracket.
[3] Basic EITC only. Does not include supplemental young child credit or health insurance credit.
[4] Families with one qualifying child.
[5] Families with two or more qualifying children.
[6] Taxpayers with no qualifying children.

Source: The Green Book and authors' calculations from OBRA93.

(1999), CBO (1997), and Dickert-Conlin and Houser (1998) for recent studies). These studies examine the marriage tax cost along the income distribution, by family size (number of children), and the distribution of family earnings within the couple. Further, CBO and Bulls et al. examine the effects of specific changes in tax policy on marriage penalties.

Another line of research has examined the impact of tax reforms (in particular 1981, 1986, and 1993) on the tax implica-

tions of marriage. Feenberg (1983) examines the 1981 tax act and shows that they reduce marriage penalties. Rosen (1987) examines the TRA86 and its impact on marriage penalties. He finds that the sharp reductions in marginal tax rates among higher–income families reduced dramatically the marriage penalties, while expansions to the EITC slightly raised marriage penalties among lower–income families. Feenberg and Rosen (1995) examine the 1993 changes as part of the Omnibus Bud-

get Reconciliation Act (OBRA) and found that, on average, the increases in marginal tax rates increased penalties for higher income couples and the expansion of the EITC led to increases in penalties for low income couples.

The work of Alm and Whittington (1996) is closest to ours. They examine changes in marriage penalties over the period 1967 and 1994 by various family characteristics. They find that families with two earners and those with children experienced larger increases in penalties while those with a single earner and with no children experienced less dramatic increases. Furthermore, they explore the impact of changes in tax law and changes in demographics on the average penalty over time and find that while both are important, changes in demographics (especially the rise in employment and earnings of married women) has contributed to these trends. This work does not attempt to quantify the tax versus non–tax changes in the tax cost of marriage or to isolate the demographics that matter.

While the definition of the marriage tax is fairly clear, its calculation is not straightforward. The universal approach in the literature is to use samples of married couples and define the marriage tax cost as the difference between the tax liability of married individuals filing joint tax returns and the sum of their individual tax liabilities if they file the appropriate tax returns as unmarried individuals (single return if childless, and head–of–household return if parent). The difficulty is that the tax liability outside of marriage is never observed and must be imputed (using assumptions about the allocation of income and children). Different assumptions about the couple's objectives include tax minimization strategies implying, for example, that the higher–earning spouse

takes custody of any children (e.g., Rosen, 1987; Feenberg and Rosen, 1995; CBO, 1997). A common alternative is to use assumptions that more closely match observed behavior, for example, assuming that the children would reside with the wife (e.g., Dickert–Conlin and Houser, 1998). Calculations of marriage tax consequences are shown to be sensitive to different assumptions about the allocation of children, as well as assets and labor supply behavior upon separation (Alm and Whittington, 1996; CBO, 1997, Bull et al., 1999; Sjoquist and Walker, 1995). While most studies assume no change in behavior with marriage and tax reform, several (Feldstein and Feenberg (1996) and Feenberg and Rosen (1983)) simulate changes in the secondary earner's labor supply in response to tax reform. In addition to these differences, studies differ in the choice of the type of data (more commonly tax data—Bull et al., 1999; CBO, 1997; Feenberg, 1983; Feenberg and Rosen, 1995; Feldstein and Feenberg, 1996; and Rosen, 1987—but also household survey data—Dickert–Conlin and Houser, 1998 and Alm and Whittington, 1996).

DATA

The data used in this paper come from the 1985–98 March Current Population Survey (CPS), covering tax years 1984 to 1997. We create tax–filing units (the relevant unit for the federal tax and the EITC) by separating related subfamilies from primary families.[8] The sample includes all married tax filing units where the adults are age 18 and over. We classify observations as married if the individual reports being married and residing with their spouse (and as unmarried if the individual reports being never married, separated, divorced, married spouse absent, or

---

[8] Individuals under 24 residing with their parents and attending school are considered dependents for the federal tax and qualifying children for the purpose of the EITC. This coding removes these individuals from the pool of unmarried persons in our sample.

widowed). Eliminating observations with incomplete information and pooling over 14 years generates 447,731 married couple observations.

The CPS is a household survey data set and, accordingly, does not have information on tax liabilities, itemized deductions, and EITC receipt. Also, household surveys topcode earnings and income, and survey data may under–report income (especially unearned income). The alternative is to use tax data, consisting of a random sample of tax filers.[9] The advantage of using tax data is that one is able to observe "true" taxable income, itemized deductions, credits, etc. However, an important set of disadvantages lead us to the CPS data. First, tax return data miss non–taxfilers. Nonfilers may either earn no taxable income, avoid or evade taxes. In addition, they may change status and file a tax return upon marriage or separation. Also, while in practice the marriage tax cost affects only taxfilers, conceptually it affects all couples. On those grounds, survey data capturing the population characteristics better represents the variable of interest. Second, tax data do not contain the demographic characteristics of the tax filing unit. Most relevant for this paper, tax data do not include the distribution of earnings in the family, with the exception of 1982–6, when eligible couples could receive the secondary earner tax deduction. Even during that period, however, secondary earnings were censored at $30,000.[10] CPS data have the advantage of large samples, and cover an extensive time period.

Our tax model calculates federal income, and payroll taxes from tax year 1984 to 1997,[11] using total family income (earned and taxable unearned income), and assuming that all couples file a mar-ried joint tax return and take the standard deduction. We do not model state income taxes and therefore do not account for state supplements to the EITC (available in nine states in 1998). While state EITC's are growing in importance, they continue to be small relative to the federal credit. Over the entire sample period, we find married couples to be subsidized by the tax system, with an average marriage tax-cost of –$313. On average, however, the EITC is penalizing with an average penalty of $154.

TRENDS IN TAX CONSEQUENCES OF MARRIAGE, 1984–97

This section presents a detailed summary of the marriage tax cost over time and across groups for married couples in our CPS sample. The marriage tax cost T is defined as:

$$[1] \quad T = L(E_m + E_f, U_m + U_f, K, S_m)$$
$$- [L(E_m, (U_m + U_f)/2, 0, S_s)$$
$$+ L(E_f, (U_m + U_f)/2, K, S_{hh})]$$

where L is the tax unit's federal income tax liability as a function of earnings (E), unearned income (U), number of children (K), and the relevant tax schedule (S). The subscripts m and f refer to male and female. The total tax liability of the couple when married (the first term) is calculated assuming the couple files a married joint income tax return (S_m). To calculate individual tax liabilities, we simulate a separation. Because this separation is never observed for currently married couples, assumptions regarding the subsequent allocation of children and unearned income, as well as labor supply behavior,

---

[9] Tax data were used by Bull et al., 1999; CBO, 1997; Feenberg, 1983; Feenberg and Rosen, 1995; Feldstein and Feenberg, 1996; and Rosen, 1987.

[10] Holtzblatt and Rebelein (1999) suggest secondary earnings are separately identified in 1997 tax return data.

[11] See Eissa and Hoynes (1998) for more details on the tax calculator.

are required. Our first assumption is that the wife receives custody of the children , so that she faces the head–of–household schedule (S_{hh}) when single. Without the children, the husband faces the single filer tax schedule (S_s). Our second assumption, somewhat simplistic but useful as a starting point, is that unearned income is equally split between the husband and wife.[12] Finally, we assume marital status has no effect on labor supply, and use observed earnings when married as earnings upon separation.

Calculating the tax–cost of marriage for single individuals requires simulating marriage. The problem that arises here is that spouses are not observed for single individuals; in fact no partner exists for unattached singles. Applying equation [1] to calculate the marriage cost then requires imputing a spouse (characterized by their earnings and children).[13] Because of the difficulties associated with this procedure, we exclude single individuals in characterizing the tax cost of marriage. Conceptually, of course, all persons could face marriage taxes regardless of whether they are currently married. In fact, if people respond to marriage tax incentives in making marriage decisions, then the sample of married individuals may be biased toward finding lower marriage penalties (or higher marriage subsidies).[14] While this exclusion misrepresents the overall distribution of marriage tax costs, it is not clear that imputing spouses would provide a more accurate representation. In related work (Eissa and Hoynes, 1999), we found the simulated partner earnings distribution did not match well with the

actual earnings distribution for potential partners.

Our simulations suggest that the implied tax cost of marriage over the period 1984 to 1997 averages around –$313 (1997$), representing an overall tax subsidy to marriage. Figure 1 presents the time trend in the average tax–cost of marriage (first 3 panels) and in the percent of married couples affected by the federal tax code (last panel). Two observations are immediately seen in the first panel. First, the federal income tax cost of marriage is negative (i.e., in the subsidy range) for almost the entire period of the analysis. Second, the tax cost of marriage is rising steadily (with the exception of the fall over the TRA86 period). The composition of this rise in the tax subsidy is highlighted in the remaining 3 panels, which show that the tax cost of marriage is also rising *conditional* on being positive (tax) or negative (subsidy). The exception again is the period immediately surrounding TRA86. In addition, married couples are more likely to face a tax penalty over time. By 1997, about 55 percent of couples in the sample face an average marriage tax penalty of $1,300, and 34 percent receive an average subsidy of $2,200.

An important feature of tax changes over this period is the expansion of the EITC. To focus on the role of the EITC in explaining the observed trends, we present figures that compare the overall tax and EITC marriage consequences (Figure 2) for eligible married couples. Two observations are noteworthy. First, the data show that on average the EITC taxes marriage in families with children, creat-

---

[12] The assumptions regarding the allocation of children and unearned income ignore any strategic behavior by the couple. If the couple's objective is engaging in arbitrage to minimize their total tax liability, the allocation of children and unearned income would be endogenous. We discuss below the sensitivity of our results to changes in these assumptions.

[13] Partners (potential spouses) are observed for cohabiting individuals. Cohabitation is not typically reported, however. The CPS identifies cohabiting partners, but only since interview year 1994.

[14] Studies that have examined the effect of marriage tax penalties on marriage include Alm and Whittington, 1995a, 1995b, 1997; Dickert–Conlin, 1999; Eissa and Hoynes, 1999; Sjoquist and Walker, 1995; and Whittington and Alm, 1997.

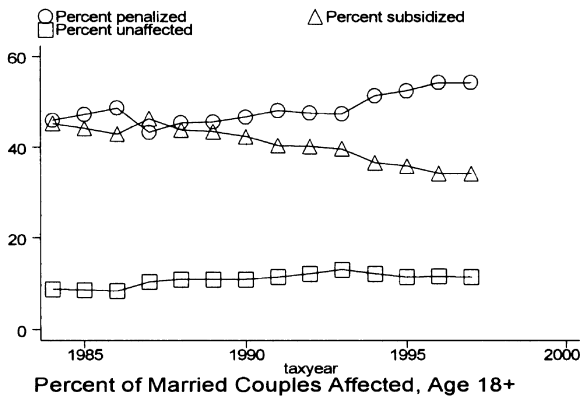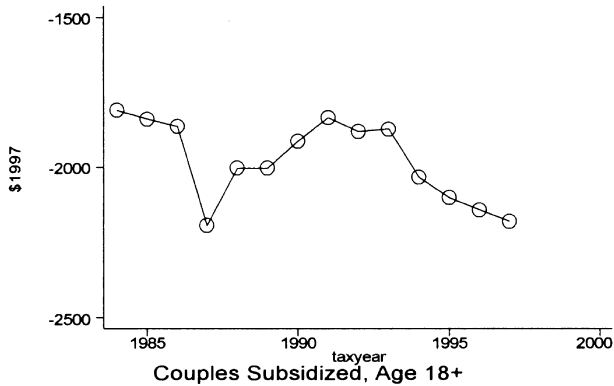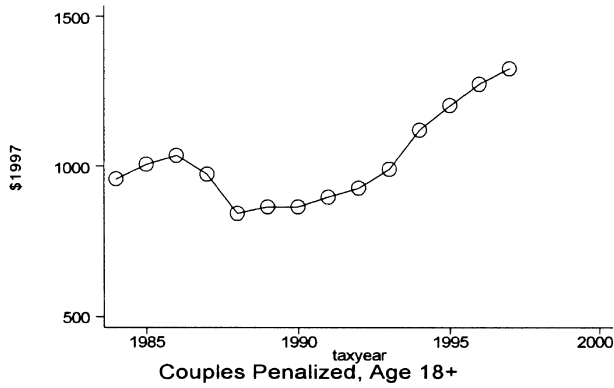***Figure 1.*** Average Marriage Tax Cost; Married Couples 1984–97

All Couples, Age 18+

Couples Penalized, Age 18+

Couples Subsidized, Age 18+

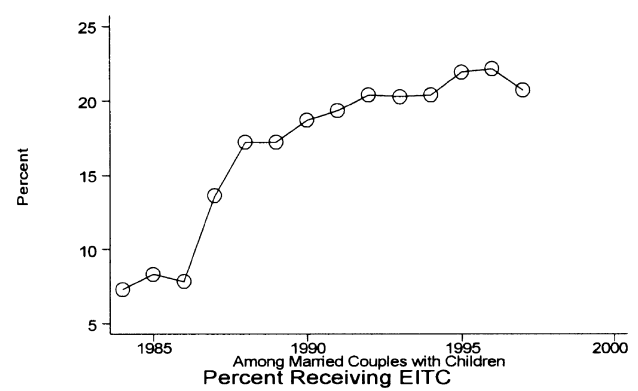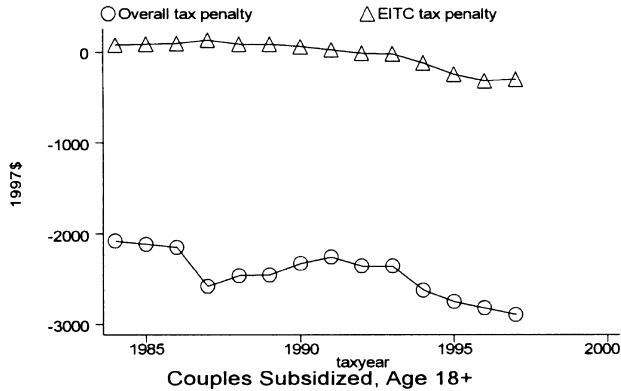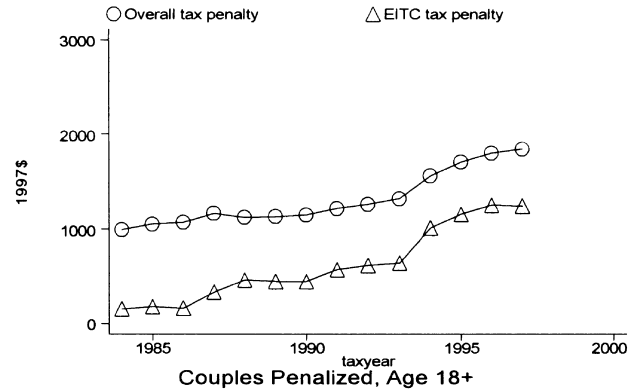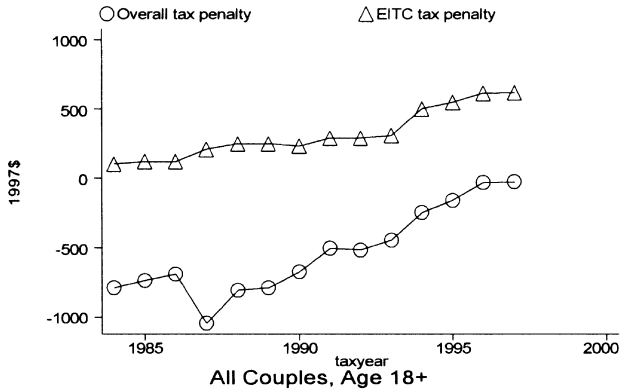Percent of Married Couples Affected, Age 18+

Figure 2. Average Tax Cost of Marriage, Married Couples with Children, 1984–97, and Overall and EITC Cost


694

ing an incentive for eligible couples to separate. Second, Figure 2 also shows that most of the change in the tax cost of marriage for families with children is driven by EITC expansions. In fact, the non–EITC federal tax cost of marriage remains fairly constant over time. This occurs within the sample of married couples who are penalized (panel 2) and those who are subsidized (panel 3).

While the overall and conditional means are informative, they mask to some degree significant variation in this tax–cost within a given year and over time. We discuss first the time variation. Figure 3 presents the percent distribution of the population across different ranges of marriage tax costs across three points in time: 1984–6, 1988–90, and 1995–7.[15] These are chosen to capture changes over periods of substantial tax changes (TRA86 and OBRA93). The figure shows that a large fraction of the population is at both ends

of the distribution: large subsidies and penalties. Before TRA86, 34 percent of married couples received subsidies over $500 (1997$), and 24 percent faced penalties over $500 (1997$). Over time, the figure shows that TRA86 compressed the distribution of marriage tax costs, or alternatively reduced the marriage non–neutrality of the tax code. This occurs because TRA86 reduced the degree of progressivity. By 1995–7, the effect of successive tax laws and the associated shift towards greater penalties is fairly evident.

Figures 4 and 5 present the marriage tax cost by three demographic characteristics of the couple: income, wife's share of earnings, and children. Figure 4 shows substantial interactions between time and income in the marriage tax cost. While the marriage tax cost fell for lower–income groups (below $20,000), it rose for higher–income groups. In fact, the rise in the mar-

Figure 3.   Percent Distribution of the Population by Ranges of Marriage Tax Cost, Selected Years
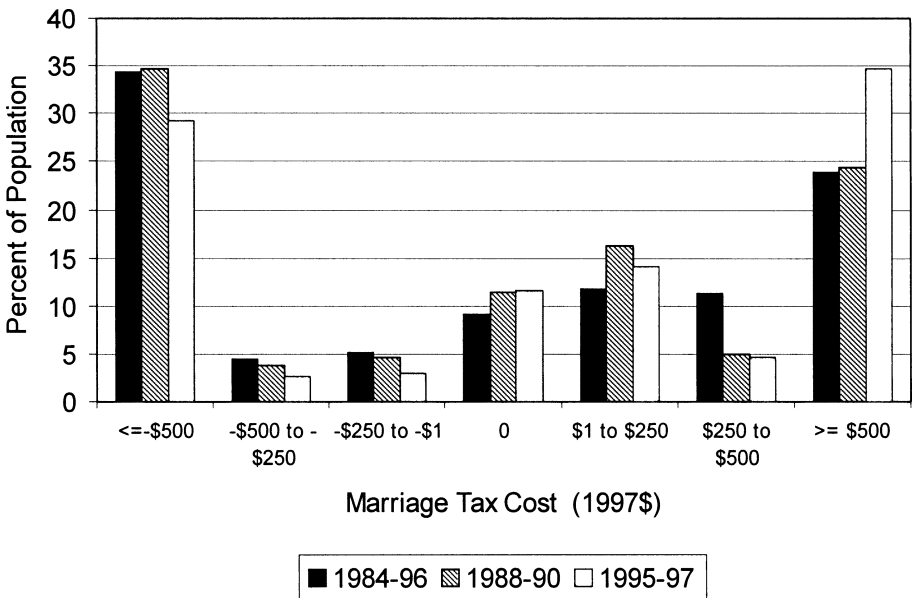
15 These periods were chosen because no federal income tax changes occurred *within* each grouping.

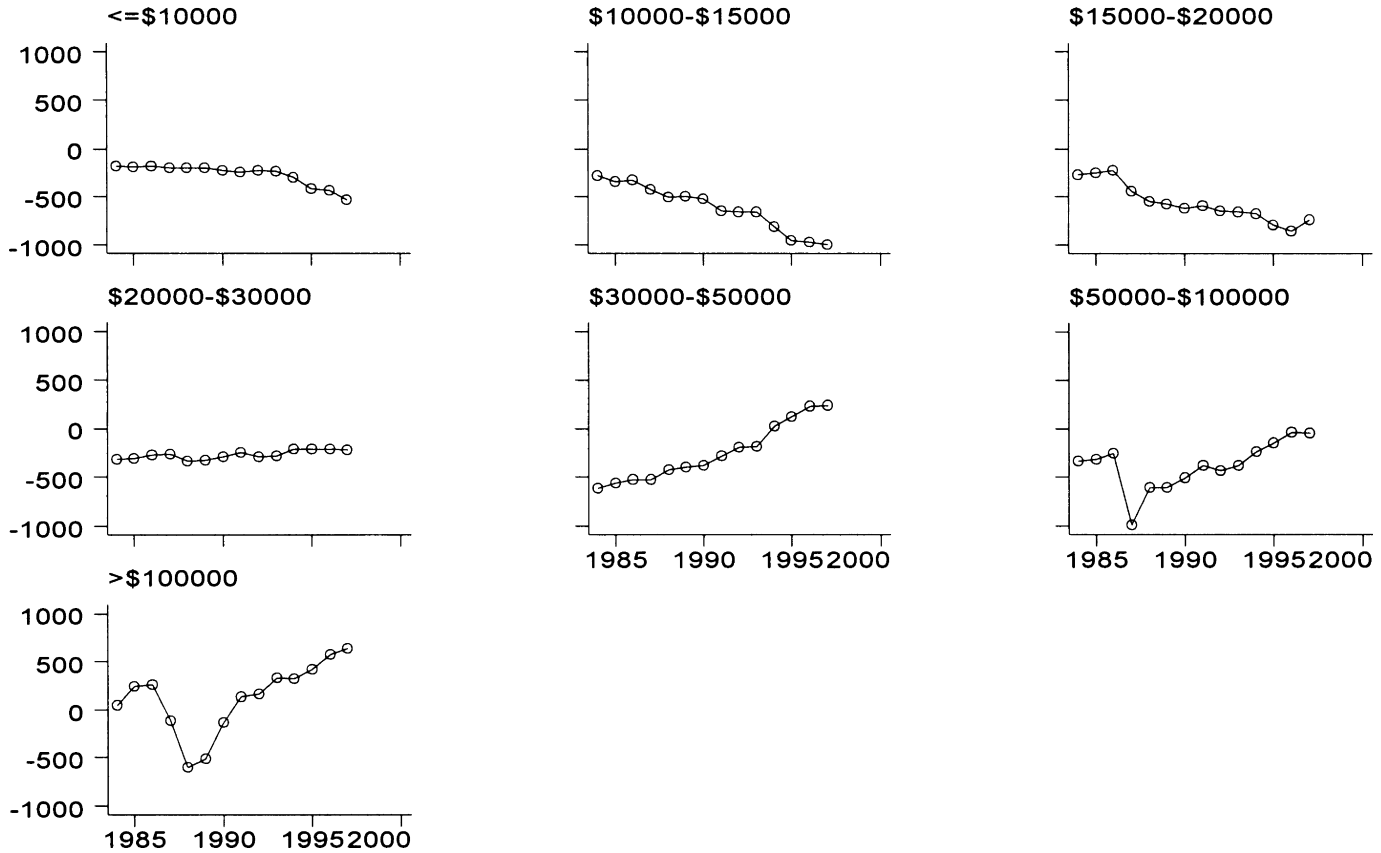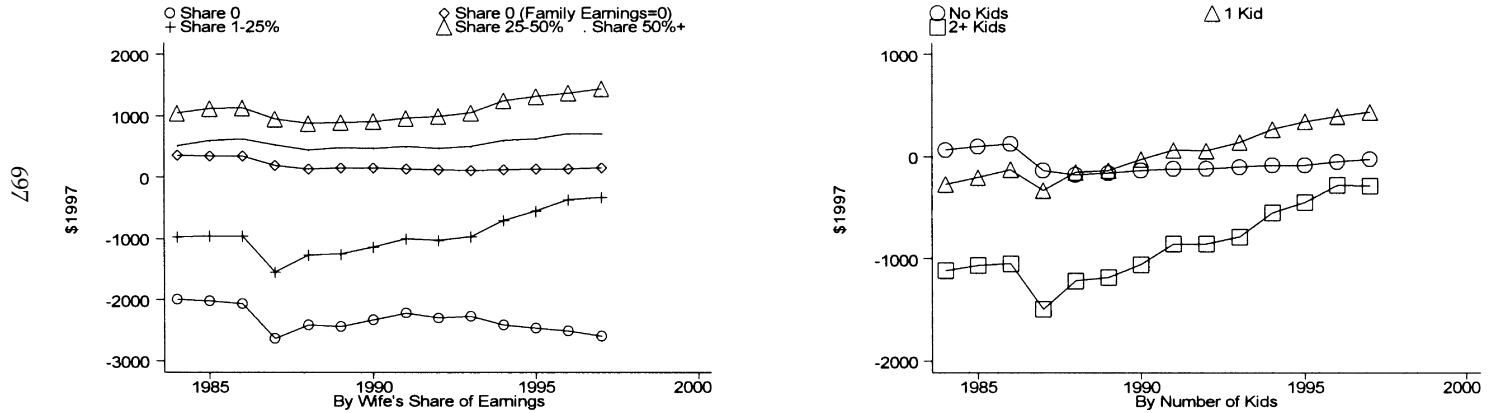*Figure 4.* Average Marriage Tax Cost by Income Class (1997$)

Figure 5. Average Marriage Tax Cost by Number of Children and Wife's Share of Couple's Earnings

riage tax cost for taxpayers with incomes between $35,000 and $50,000 is such that their subsidy becomes a tax by 1994. Above $100,000 the CPS data tend to be somewhat noisy but suggest that the marriage tax cost falls substantially with TRA86 and rises thereafter. This occurs because beginning in 1990 the tax schedule becomes increasingly progressive as marginal rates on high–income taxpayers are raised.

Figure 5 shows the marriage tax–cost by wife's share of couple's earnings (left) and number of children (right). Families in which the wife is the primary earner (contributing over half of family earnings) and families in which the wife contributes between one–quarter and one–half of family earnings are the groups most heavily taxed by the federal income tax system. In addition, their tax cost is rising over time. At a more aggregate level, we observe the cost rising for all dual–earner couples, but declining for single–earner families. One explanation for the rising gap for single and dual–earner families over time is that the earnings of women are taxed at increasingly higher marginal rates after TRA86 deduction.[16]

Characterizing the tax cost by family size shows that childless couples are not affected much by the tax code, on average, and that they face slightly lower tax costs over time. The time pattern for couples with children is the reverse and shows the cost rising at a higher rate for couples with two or more children. This occurs because of the differential increase in the EITC for larger families and employment rates of mothers.

WHAT ACCOUNTS FOR THE FALL AND RISE IN THE TAX COST OF MARRIAGE, 1984–97?

The previous section documented that the tax cost of marriage has generally risen over the 14 years of our analysis, with the exception of the period immediately following the TRA86. Other than taxes, the previous section has shown that demographic characteristics such as income, wife's share of couple's earnings, and number of children matter for the tax cost of marriage. In this section we discuss methods for decomposing the changes in the marriage tax cost. We also present the results from that decomposition.[17]

Trends in Tax Cost of Marriage under Constant Demographics and Constant Taxes

To start, let the function $T(X_{it},L_t)$ represent the marriage tax cost for a unit with characteristics X_{it} facing tax law L_t. X therefore includes family income, the distribution of earnings, non–labor income, and the number of children. Note that $T()$ is just a simplified version of [1] presented above. In year t, the mean marriage tax cost (in Figure 1) can be represented as:

$$[2] \quad E(T \mid X_t,L_t) = \int T(x,L_t)f_t(x)dx$$

where f_t is the probability density function for the demographics X in year t. Of course, X is a vector and therefore f_t is the joint distribution (with the associated in-

---

tegrals). If we discretize the variables in X, the population can be collapsed into demographic cells. Operationally, then, this can be thought of as a weighted average of the cell means, where the weight is size of each cell.

To isolate the impact of tax law, conceptually, we fix the distribution of X (i.e., hold the effect of changing demographics constant, in real terms) and allow the tax law to change. The choice of a time period to fix X is arbitrary but is usually the most recent year (to closely match the current population). Fixing the joint distribution of X in 1997, we generate a "demographic constant" mean in year t that isolates the impact of changes in tax law as:

$$[3] \quad E(T \mid X_{97}, L_t) = \int T(x, L_t) f_{97}(x) dx$$

Note that the only change from [2] is in the use of 1997 demographic characteristics instead of year t characteristics to calculate the mean in year t. In practice, we apply the 1997 CPS sample to the tax calculator using current (i.e., 1984–97) tax law.[18]

To isolate the impact of demographics, we fix tax law at a point in time and allow demographics to change. The "tax constant" cost of marriage is then defined as:

$$[4] \quad E(T \mid X_t, L_{97}) = \int T(x, L_{97}) f_t(x) dx.$$

Note that the only difference from [2] is that we are using the tax law in 1997 to calculate the mean for each year t. In practice then, we apply (real) 1997 tax law to our current (1984–97) CPS sample.

Our analysis is based on real values. To calculate the "constant tax" cost, we deflate the tax brackets using the CPS to generate a constant *real* tax schedule. To calculate the "constant demographic" cost, we deflate the 1997 earned and unearned income to the respective year and apply the nominal tax schedule for that year. Note that in both sets of calculations, we use 1997 as the anchor.

Our results are presented in Figure 6, which compares the average marriage tax cost for the 1997 sample "constant demographic" case (panel 1) and the average marriage tax cost for the 1997 tax law "constant tax" case (panel 2) to the actual marriage tax cost from figure 1. The constant demographic trend shows essentially the same sharp decline in the marriage tax cost following TRA86 as the actual trend, and a similar rise after OBRA93. What is different in the constant–demographic–sample is that the trend is flatter between 1987 and 1997 than the actual trend, suggesting that demographics play an important role over this period.[19] The second panel confirms this conjecture by showing that, independent of the changes in tax laws between 1984 and 1997, the "constant tax" trend in the tax cost of marriage increases monotonically over the period.

To understand better the rise in the constant–tax cost of marriage, it is useful to characterize briefly the changes in demographics over this period. Simple summary figures on income, wife's share of labor earnings, and number of children are presented in Figure 7. The first two panels in the figure shows that average family income is mostly rising (the exception being the recession period from 1989 to 1992), with more (fewer) families earn-

---

[18] Our results are qualitatively identical using the 1984 CPS sample.

[19] Both TRA86 and OBRA93 primarily affected taxpayers at the top and bottom of the income distribution. We have also examined the tax–cost for taxpayers with different incomes and found substantial effects across the income distribution.

Figure 6. Average Marriage Tax Cost, Actual, Constant Sample and Constant Tax Simulations
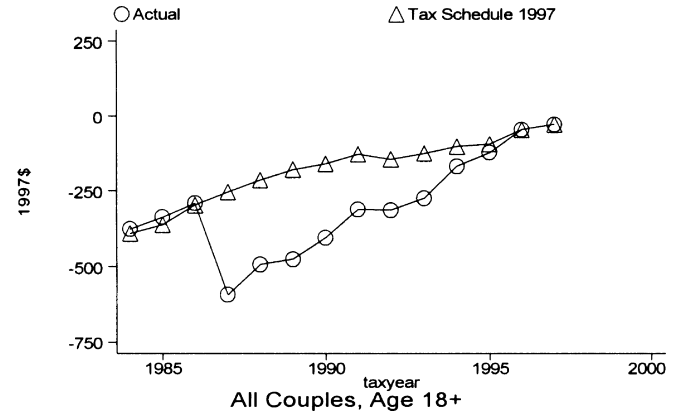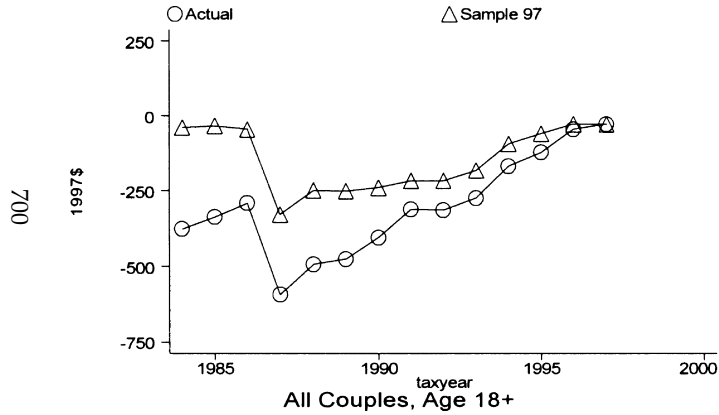
Figure 7. Mean Family Income, Wife's Share of Earnings, and Children, 1984–97

Average Family Income (topcoded)

Proportion of Families in Specified Income Class

Average Share of Wife in Family Earning

Proportion of Families in Each Earnings Share

Average Number of Kids

Proportion of Families with 0, 1 or 2+ kids
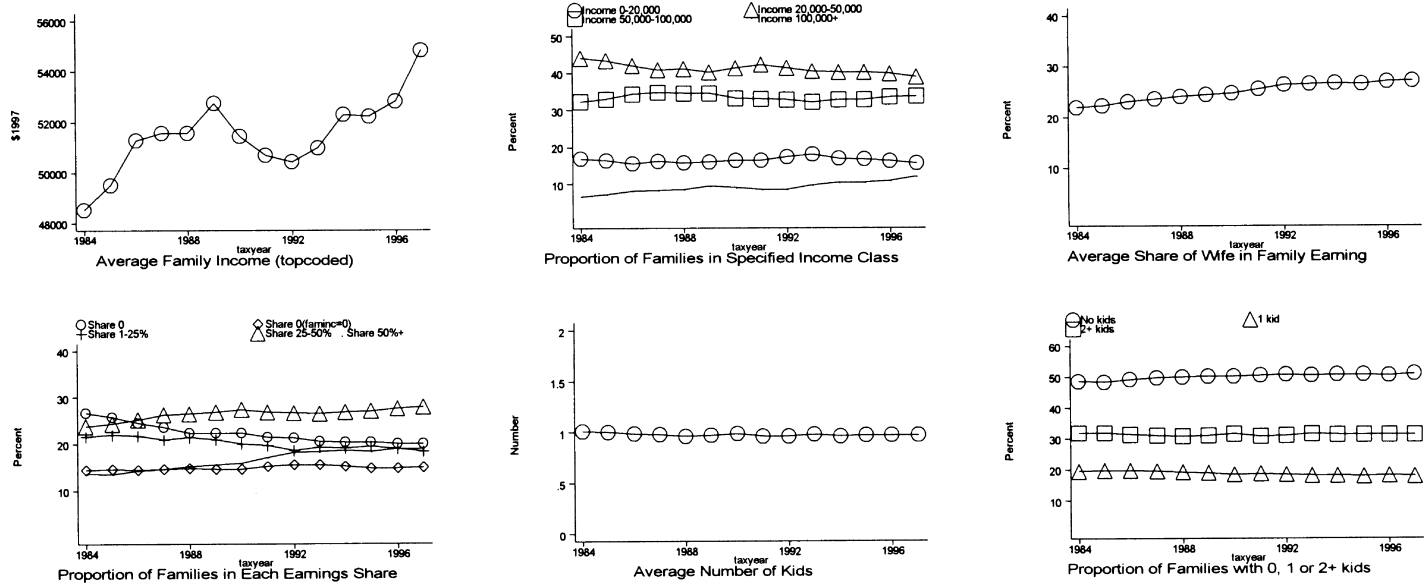
ing above $100,000 (less than $50,000) over the period.[20] A more striking trend is the rise in the labor force attachment of women over the past three decades. Rising employment rates of women affect the marriage tax cost directly by raising family income but also by altering the distribution of earnings in the family. Not surprisingly, the data do show the expected rise in the share of family earnings deriving from wife earnings (Panel 3 of Figure 7).[21] This occurs in part because of a decline in the number of families in which the wife contributes less than one–quarter of family earnings. In addition, we observe a rise both in the number of families in which the wife is the primary earner (contributing over half of family earnings) and families in which the wife contributes between one–quarter and one–half of family earnings, such that they represent the largest group (panel 4 of Figure 7). These trends are significant because these two groups are the most heavily taxed by the federal income tax system (Figure 5). The final panels in Figure 7 show a very slight decline in the average number of children due to a shift in the composition of families from those with one child to childless couples.

Decomposing Changes into Tax and Demographic Components

To decompose the actual *change* in the cost of marriage into the two components, we can use the framework outlined above.[22] The change in the mean marriage tax cost between 1984 and 1997 is given by:

$$[5] \quad \Delta_{84,97} = E(T \mid X_{97}, L_{97}) - E(T \mid X_{84}, L_{84}).$$

We can then decompose the observed change into the component due to changing demographics:

$$[6] \quad \Delta_{84,97}^{X} = E(T \mid X_{97}, L_{97}) - E(T \mid X_{84}, L_{97}).$$

and the component due to changes in tax law:

$$[7] \quad \Delta_{84,97}^{L} = E(T \mid X_{84}, L_{97}) - E(T \mid X_{84}, L_{84}).$$

Equation [6] is derived from the "constant tax" mean in [4], holding tax law fixed in 1997. Equation [7] is derived from the "constant demographic" mean in [3], but using the 1984 demographics,. Note that by construction the two components add up to the actual change.[23]

The results of this decomposition of mean marriage tax cost between 1984 and 1997 is presented in the first row of Table 4. We calculate that the average tax cost of marriage rose by about $348 between 1984 and 1997, but we find that demographics explain essentially all of the change over this period. Tax laws do not seem to be relevant to this overall change. However, Table 4 also presents similar decompositions for the periods 1984–7, 1987–93, and 1993–7. These periods rep-

---

[20] In 1988, the CPS increased the top–codes for income, and in 1994, it changed the assignment of income for families above the top–code from the top–code to the conditional mean income of families above the top–code. Individual components of income are subject to the top–codes. We are presenting total family income which equals total couple earnings and unearned income. We adjust this income figure after 1994 to the mean income of families above the top–code in 1993.

[21] In this entire discussion, "family earnings" refers to the sum of earnings of the husband and wife.

[22] This exercise is similar to the decomposition of male–female or black–white wage differences in the applied labor economics literature (for example see the review by Cain, 1986). There, the difference in wages is decomposed into the effect due to differences in characteristics (e.g., education, age, experience) and the effect due to differences in the value the market places on individual characteristics.

[23] This decomposition is not unique. Alternative decompositions can be constructed using different choices about what to hold constant. We have not found the choice of decomposition to affect the results significantly.

TABLE 4
CHANGE IN THE MEAN MARRIAGE TAX COST (1997$)
COMPONENTS, BY INCOME QUINTILE

	Actual	Demographics	Tax Law
A. Overall			
1984–97	348	364	–17
1984–7	–218	120	–338
1987–93	321	144	177
1993–7	245	98	147
B. Income Quintile			
1st Quintile (in a given year)			
1984–97	–447	77	–525
1984–7	–111	36	–147
1987–93	–171	–6	–165
1993–7	–165	23	–188
2nd Quintile			
1984–97	530	217	312
1984–7	171	59	113
1987–93	61	–12	72
1993–7	298	137	160
3rd Quintile			
1984–97	721	256	465
1984–7	–123	–49	–75
1987–93	518	268	250
1993–7	326	–30	356
4th Quintile			
1984–97	401	534	–132
1984–7	–638	117	–755
1987–93	601	242	359
1993–7	438	163	276
5th Quintile			
1984–97	533	737	–204
1984–7	–386	443	–829
1987–93	594	224	370
1993–7	326	193	133

resent the three major tax acts TRA86, OBRA90, and OBRA93. The table shows clearly that the relative importance of taxes versus demographics depends on the time period considered as well as the sample. Not surprisingly, we find a very different story when we evaluate the change over the TRA86 period. We estimate that TRA86 reduced the marriage tax cost by $338 between 1984 and 1987 while changing demographics raised it by $120. In the OBRA90 and OBRA93 periods, the effect of changing demographics and changing tax law contributed somewhat equally to the observed increase in the mean marriage tax cost.[24]

This decomposition can be carried out for subgroups of the population. When we evaluate these components for families at different points along the income distribution (Panel B), several important patterns emerge. We find that each of the three tax acts passed between 1984 and 1997 reduced the marriage tax cost for the

---

[24] Note that the change in the actual mean between 1984 and 1997 is equal to the sum of the changes in the actual means across the subperiods. This summing up does not hold, however, for demographic and tax components. Referring back to equations [5]–[7], they do not sum up across periods because the decompositions are evaluated holding constant the sample and tax laws at different years. An alternative would be to hold the tax law or demographics constant at some fixed year (e.g., 1997). However, in that case, within a given year the demographic and tax components would not add up to the actual change.

poorest families, so that marriage cost was about $450 lower in 1997 compared to 1984. In addition, while demographics explain all the rise in the overall marriage tax cost between 1984 and 1997, the reverse holds for families in the lowest quintile of the income distribution. Among the richest families, changing demographics, likely the labor force participation of secondary earners, raised the marriage tax cost by $737 from 1984 to 1997, while tax laws reduced it by $204. On the tax side, we find that the large benefits that accrued to these families with TRA86 (-$829) were gradually withered away by both OBRA90 and OBRA93.

Table 5 presents analogous calculations by the employment status of the wife and family size. Single–earner families receive the highest tax subsidies in the United States. Consistent with Figure 5, we find that their tax subsidy was greater in 1997 than in 1984, and that with the exception of OBRA90, tax laws generated relatively greater benefits to this group over the period (panel A, Table 5). For most of the period, changes in the demographic composition of such families generally raised their marriage tax cost. Since women in these families make no contribution to family earnings, it is likely that other family income (spouse and unearned income) explain this pattern. A striking observation from the table is the dramatic rise in the tax cost of marriage in families where the wife works. Overall, we estimate that income and the changing labor force attachment of these women explain well over half of the rise from 1984 to 1997.

Panel B of Table 5 presents the decomposition by family size. Differences across

TABLE 5
CHANGE IN THE MEAN MARRIAGE TAX COST (1997$)
COMPONENTS, BY WIFE EMPLOYMENT AND FAMILY SIZE

	Total	Demographics	Tax Law
A. Employment Status of Wife			
Not Working			
1984–97	–254	128	–382
1984–7	–378	30	–408
1987–93	303	146	157
1993–7	–178	–55	–123
Working			
1984–97	543	306	237
1984–7	–182	108	–290
1987–93	278	88	190
1993–7	447	148	299
B. Family Size			
No Children			
1984–97	–97	159	–256
1984–7	–201	70	–271
1987–93	34	65	–31
1993–7	70	42	29
One Child			
1984–97	709	528	180
1984–7	–61	221	–282
1987–93	469	165	304
1993–7	301	141	160
Two Children			
1984–97	821	596	226
1984–7	–381	95	–476
1987–93	709	279	431
1993–7	493	164	329

family size, especially over the 1993 OBRA period, most likely represent the EITC, which differentially affected families with children. It is not possible to sign the EITC effect for families with children *a priori* since the program taxed some families and subsidized others. The panel does show much stronger tax effects for families with children relative to those without children between 1993 and 1997, and interestingly, quite similar demographic components.

Which Demographics Matter?

Clearly, changes in the demographic characteristics of the population have had an important impact on marriage tax costs. Our interest is in isolating which family characteristics matter. Therefore, this analysis decomposes the constant tax cost $E(T \mid X_t, L_{97})$. We consider income, wife's share, and number of children. Using the notation above, now let X include these three variables ($X = [X^1, X^2, X^3]$) and suppose we want to capture the effect of changing X^3, holding X^1 and X^2 constant. Expanding on [4] above, we can express this as:

[8] $\quad E(T \mid X_{97}^1, X_{97}^2, X_t^3, L_{97})$

$\quad = \int \int T(x^1, x^2, L_{97}) f_{97}(x^1, x^2) dx^1 dx^2.$

With panel data, we could directly fix X^1 and X^2 and trace out the mean marriage tax cost by varying X^3 (say income) over the years t. Because we use repeated cross–section data, we can fix demographic characteristics only at a group level and not for individuals. We therefore amend our procedure as follows.

We first define cells based on income, wife share of earnings and children. The categories used here represent three fam-

ily size categories (0,1,2 or more kids), five wife share categories (no reported earnings, 0, 1–25 percent, 25–50 percent, 50–100 percent), and 11 income categories.[25] Second, we collapse the CPS sample into demographic cells defined by X^1 and X^2 (children and wife share, for example) and calculate means of the "constant tax" marriage cost within each cell in each year. Third, we calculate the joint distribution of X^1 and X^2 using the percent of all families in each cell *using the 1997 sample*. We then calculate the weighted mean tax cost, by applying the fixed year (1997) weights to the current year (1984–97) cell means. Any change in the mean tax cost from one year to the next must be due to a change in the sample other than the two variables defining the cells.[26] This procedure is then repeated for each of the three variables. As a test of our calculations, we fix the joint distribution of all three variables to check the size of the unexplained part of the marriage tax cost.

The four panels in Figure 8 present the results of this analysis. Each panel in the figure is defined for a different category. The first panel evaluates the effect of income, holding fixed the number of children and wife's share of family earnings, and shows that the average marriage tax cost trends up very slightly over the 1984–97 period, but essentially is quite flat. We interpret this result as a minor impact of changes in total family income (including unearned income) within these child–wife's share categories. The third panel shows a very similar pattern when we fix income class and wife's share of income to be at the 1997 distribution but allow the number of children to vary. This result is not very surprising since Figure 7 showed little change in the overall average number of children. While we do find differences in family size over time across in-

---

[25] We have explored using more detailed cells and the results are quite similar.

[26] Within cell changes in the distribution of earnings, wife's share or 2+ children could also affect the calculated mean tax cost.

Figure 8. Average Marriage Tax Cost, Constant Tax Law, Sample Re–Weighting
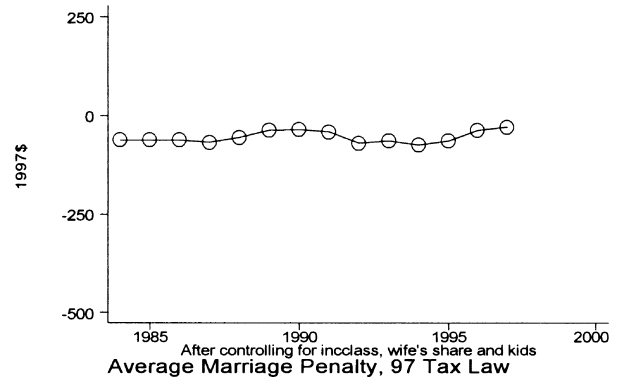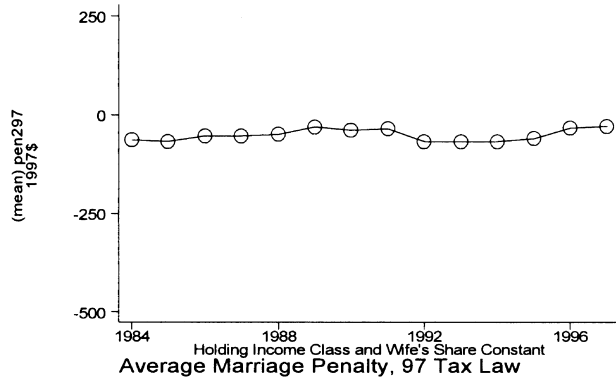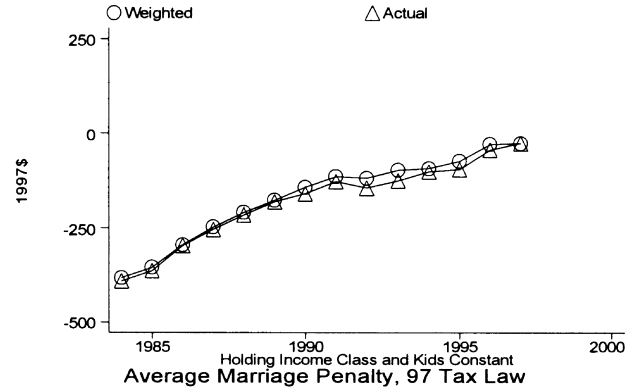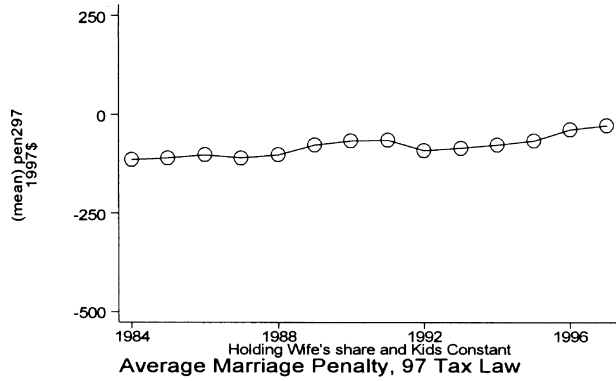
come classes, these differences are not substantial enough to explain the trend in the marriage tax cost (Figure 9).

The most interesting panel in Figure 8 shows the marginal impact of changing female labor force attachment as measured by the wife's share of family earnings (panel 2). It is instructive to evaluate the change in wife's share of earnings within income classes to motivate the findings here (Figure 9). For each of 11 real (1997 $) family income categories, we calculate the change in the percent of couples with the woman's share equal to 0, 1–50 percent, and 50–100 percent between 1984 and 1997. Several important points emerge from the figure. Consistent with the rise in the overall labor force participation of married women, we find fewer non–working women and significantly more women contributing over half of family earnings. Further, the rise in primary–earning wives (contributing 50 percent or more) occurs most significantly among higher–income families. This trend occurs without much change to the share of secondary–earning (as opposed to non–working) wives. In contrast, we observe a rise in the nonemployment of married women and in primary earning wives among the lowest–income groups.[27] Because the federal tax system heavily subsidizes marriage among (the declining number of) single–earner families but taxes marriage in (the rising number of) families where the wife contributes over half of family income, we should expect a strong effect of wife's share of earnings. In fact, we show re-

sults next that are consistent with this data.

Returning to Figure 8, Panel 2 presents the marriage tax cost holding fixed the joint distribution of family income and family size at 1997 and allowing wife's share of family earnings to vary. It shows the striking result that the "wife–share" marriage tax cost tracks the "tax–constant" trend almost perfectly. Recall that the tax–constant trend represents the "total" effect of demographics. Finally, in the last panel (panel 4) we hold constant income, family size, and women's share. The figure shows that characteristics of the tax unit other than income, size, and the wife contribution explain essentially none of the change in the demographic component of the marriage tax cost.

The conclusion to draw from this exercise then is that changes in the labor force participation of married women explains virtually all of the changes in the (tax–constant) average marriage tax cost over this period.[28]

SENSITIVITY TESTS

Conceptually, measuring the "true" marriage tax cost of marriage requires observing the individual in two states of the world: married and single. Because at any point in time an individual is either married or not married, the counterfactual must be imputed. Consequently, for married couples, calculating the tax cost of marriage requires assumptions concerning the division of income, exemptions, and deductions upon separation. We have

---

[27] For this figure, we drop families without any earned income (where *Share* is undefined). These observations consist primarily of elderly couples.

[28] This conclusion raises the issue of labor supply of secondary earners and its sensitivity to taxes. At a conceptual level, it is important to recognize that the labor supply and marriage (dis)incentives derive from the same features of the tax code (progressive tax schedule). At a practical level, our concern is that we over–estimate the "pure" demographic effect by the extent to which secondary earnings are adjusting to the tax incentives. In results not presented here we use simple methods to check whether the observed rise in labor supply can be explained purely by tax changes. We find that while marginal tax rates for married women fell significantly at the high and low ends of the distribution based on husband's earnings between 1984 and 1997, increases in wife earnings occurred systematically across the distribution. Consequently, we do find that even after adjusting earnings to account for changes in taxes, our decomposition results hold.

Figure 9. Change in Percent Distribution of Couples within Income Classes, 1984–97

(A) Changes by Woman's Earnings as Share of Couple's Earnings

Income Class (1000s)

Legend:
- □ Share 0
- ⊟ Share 1-50%
- ■ Share 50%+
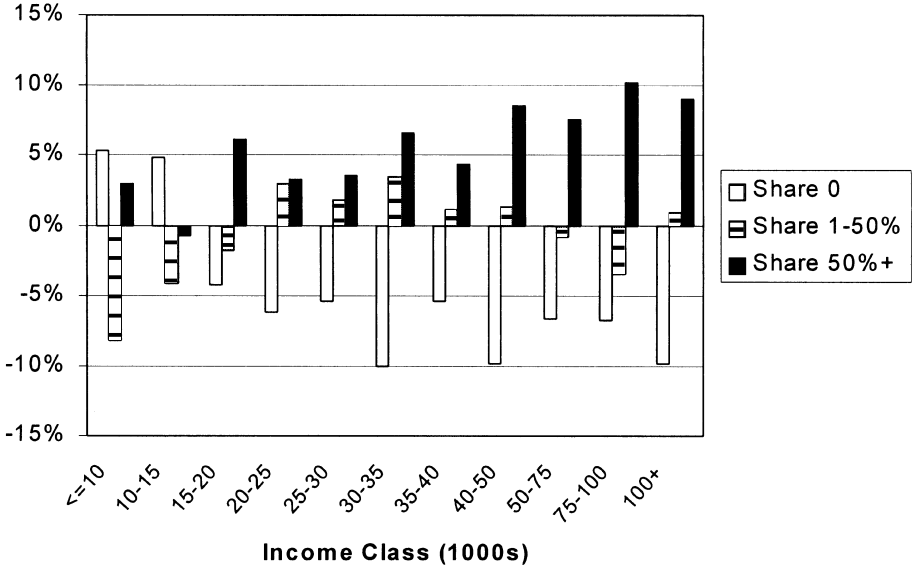
(B) Changes by Number of Children

Income Class (1000s)

Legend:
- □ No Kids
- ⊟ 1 Kid
- ■ 2+ Kids

708

adopted an "empirical" approach whereby the children reside with the mother if the couple separates. This allocation allows the mother the tax gains from dependent exemptions, the head of household status, and potential eligibility for the EITC. We also assume neither member adjusts labor supply behavior and has the same earned income after separation. Unearned income, however, is shared equally with separation. These assumptions are not innocuous. An extensive literature has shown the sensitivity of marriage tax costs to the set of assumptions (Alm and Whittington, 1996; Bull et al., 1999; CBO, 1997; Holtzblatt and Rebelein, 1999). Our paper takes these findings as given. Our interest in this section is to examine the sensitivity of our decomposition to the set of assumptions.

We consider two variations to our algorithm. First, we allocate the children to the higher earning spouse upon separation.[29] Because wives typically earn less then their husbands, this allocation transfers the benefits associated with children to the husband upon separation. By reducing the combined tax liability in the single state, allocating children to the higher earning spouse raises the marriage tax cost. Second, we alter the asset income allocation to be in proportion to the share of the couple's earned income. By transferring dollars to the higher earning, higher marginal tax individual (typically the husband), this allocation raises the combined tax liabilities as single individuals and reduces the marriage tax cost.[30] Table 6 presents the decomposition of the changes in the marriage tax cost under the alternative simulations. Comparing these

TABLE 6
CHANGE IN THE MEAN MARRIAGE TAX COST (1997$)
SENSITIVITY TO ALTERNATIVE ASSUMPTIONS FOR MARRIAGE TAX COST

	Total	Demographics	Tax Law
A. Allocate Children to Higher Earner			
1984–97	326	252	74
1984–7	23	110	–87
1987–93	131	74	56
1993–7	172	90	83
B. Allocate Asset Income in Proportion to Earned Income			
1984–97	443	377	66
1984–7	–151	147	–299
1987–93	387	183	218
1993–7	193	58	135

[29] Alm and Whittington (1996) use panel data from 1968 to 1993 to examine the marriage tax cost under different allocation assumption regarding children. Because their data end in 1993, they miss the large changes to the EITC, which were a motivating consideration for our paper. More important, they do not consider a decomposition of the demographic characteristics. To get at the demographic component, they first show trends by family characteristics (e.g., single versus dual earner status). In addition, they essentially take an aggregate approach and show the constant tax trend As such, their analysis does not speak to the contribution of the wife's share of family earnings.

[30] These sensitivity tests allow for a useful comparison to other studies which use more detailed tax calculation routines. We find that allocating children to the higher earning spouse leads to a $360 increase in the mean marriage tax cost in 1997. This can be compared to the $560 increase found by Holtzblatt and Rebelein (1999) for tax year 2000. We find that allocating assets income proportional to earned income leads to a $280 decrease in the mean marriage tax cost in 1997 compared to Holtzblatt and Rebelein's $330 decrease in a year 2000 figure. We see these calculations as very similar and suggest that our reliance on the CPS data with a relatively crude tax calculator generates very similar results.

results to those in Panel A of Table 4 yields very similar patterns in the relative importance of tax versus demographic changes over this period. The change in mean marriage tax costs between 1984 and 1997 is due primarily to changes in demographics. The alternative simulations show somewhat larger impacts for tax law but still small compared to the demographic change. Within sub–periods, however, taxes play a somewhat larger role.

CONCLUSIONS

In this paper, we examine the impact of the United States federal income tax code on marriage incentives. Our analysis is based on married couples in the Current Population Survey covering tax years 1984 to 1997. Our results show that, overall, marriage is subsidized in the United States, although there is substantial cross–sectional and time variation in the marriage tax cost. For the population as a whole over this period, the marriage tax cost was rising, with the exception of a brief decline following the Tax Reform Act of 1986 (TRA86). The patterns vary in important ways across demographic characteristics, however. Couples in the lowest income groups, couples in which the wife is not working, and couples with smaller family size were treated favorably over this period, while their counterparts (middle income couples, high–earning wives, and with two or more children) saw large increases in marriage tax costs.

Our decomposition of these changes suggest three important conclusions. First, with the exception of the TRA86 period, we find that taxes and demographics reinforced each other to raise the marriage tax cost. Nonetheless, we find the expected result that changes in tax laws explain a large share of the change to the marriage tax cost over this period. About 55–60 percent of the change in the marriage tax is due to changing the tax laws. Third, we also find that the non–tax

changes in the marriage tax cost over time are almost exclusively driven by the changing labor market attachment of married women (as measured by their share of family earnings) and not by family size or total family income. This finding is new, but it is not surprising. The degree of labor market attachment of wives interacts in important ways with the progressivity of the tax code. As secondary earnings rise, the tax system becomes more penalizing towards marriage. This occurs for higher income couples because of progressive marginal tax rates. It is increasing the case for lower income families because of significant expansions in the Earned Income Tax Credit.

The marriage tax is to a large extent an "unintended" consequence of other choices regarding the tax code, namely taxing the family using a progressive schedule. Given disagreement about both how progressive the tax schedule should be and about whether to tax the individual or the family, evaluating and understanding the implications of these choices for the marriage tax becomes important. Note that the marriage tax would be substantially reduced if we choose a proportional tax, and eliminated if we tax individual income. In this context, this paper contributes in an important way by showing that the rising labor market attachment of married women exacerbates these consequences.

REFERENCES

Alm, James, and Leslie Whittington. "Income Taxes and the Marriage Decision." *Applied Economics* 27 No. 1 (January, 1995a): 25–31.

Alm, James, and Leslie Whittington. "Does the Income Tax Affect Marital Decisions?" *National Tax Journal* 48 No. 4 (December, 1995b): 565–72.

Alm, James, and Leslie Whittington. "The Rise and Fall and Rise . . . of the Marriage Tax." *National Tax Journal* 49 No. 4 (December, 1996): 571–89.

Alm, James, and Leslie Whittington.
"Income Taxes and the timing of Marital Decisions." *Journal of Public Economics* 64 No. 2 (May, 1997): 219–40.

Bull, Nicholas, Janet Holtzblatt, James Nunns, and Robert Rebelein.
"Defining and Measuring Marriage Penalties and Bonuses." OTA Paper 82, 1999.

Cain, Glen.
"The Economic Analysis of Labor Market Discrimination: A Survey." In *Handbook of Labor Economics*, Volume 2, edited by Orley Ashenfelter and Richard Layard, 693–785. Amsterdam: North-Holland, 1986.

Dickert-Conlin, Stacy.
"Taxes and Transfers: Their Effect on the Decision to End a Marriage." *Journal of Public Economics* 73 No. 2 (August, 1999): 217–40.

Dickert-Conlin, Stacy, and Scott Houser.
"Taxes and Transfers: A New Look at the Marriage Penalty." *National Tax Journal* 51 No. 2 (June, 1998): 175–217.

Eissa, Nada, and Hilary Hoynes.
"The Earned Income Credit and the Labor Supply of Married Couples." NBER Working Paper No. 6856. Cambridge, MA: National Bureau of Economic Research, 1998.

Eissa, Nada, and Hilary Hoynes.
"Good News for Low Income Families: Tax-Transfer Schemes and Marriage." University of California, Berkeley. Mimeo, 1999.

Feenberg, Daniel.
"The Tax Treatment of Married Couples and the 1981 Tax Law." In *Taxing the Family*, edited by Rudoph Penner. Washington, D.C.: American Enterprise Institute, 1983.

Feenberg, Daniel, and Harvey Rosen.
"Alternative Tax Treatments of the Family: Simulation Methodology and Results." In *Behavioral Methods in Tax Policy Analysis*, edited by Martin Feldstein. Chicago: University of Chicago Press, 1983.

Feenberg, Daniel, and Harvey Rosen.
"Recent Developments in the Marriage Tax." *National Tax Journal* 48 No. 1 (March, 1995): 91–101.

Feldstein, Martin, and Daniel Feenberg.
"The Taxation of Two Earner Families." In *Empirical Foundations of Household Taxation*, edited by James Poterba. Chicago: University of Chicago Press, 1996.

Holtzblatt, Janet, and Robert Rebelein.
"Measuring the Effect of the EITC on Marriage Penalties and Bonuses." U.S. Treasury. Mimeo, 1999.

Kaplow, Louis.
"Horizontal Equity: New Measures, Unclear Principles." NBER Working Paper No. 7649. Cambridge, MA: National Bureau of Economic Research, 2000.

Pechman, Joseph, and Gary Engelhardt.
"The Income Tax Treatment of the Family: An International Perspective." *National Tax Journal* 43 No. 1 (March, 1990): 1–22.

Rosen, Harvey.
"Is it Time to Abandon Joint Filing?" *National Tax Journal* 30 No. 4 (December, 1977): 423–28.

Rosen, Harvey.
"The Marriage Tax Is Down But Not Out." *National Tax Journal* 40 No. 4 (December, 1987) : 567–75.

Sjoquist, David, and Mary Beth Walker.
"The Marriage Tax and the Rate and Timing of Marriage." *National Tax Journal* 48 No. 4 (December, 1995): 547–58.

U.S. Congressional Budget Office.
For Better or Worse: Marriage and the Federal Income Tax. Washington, D.C., 1997.

U.S. General Accounting Office.
"Income Tax Treatment of Married and Single Individuals." GGD-96-175, Washington, D.C., 1996.

Whittington, Leslie, and James Alm.
"Til Death or Taxes Do Us Part: The Effect of Income Taxation on Divorce." *Journal of Human Resources* 32 No. 2 (Spring, 1997): 388–412.