

# SPECIAL REPORT

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## How the Federal Tax Code Affects Young Americans

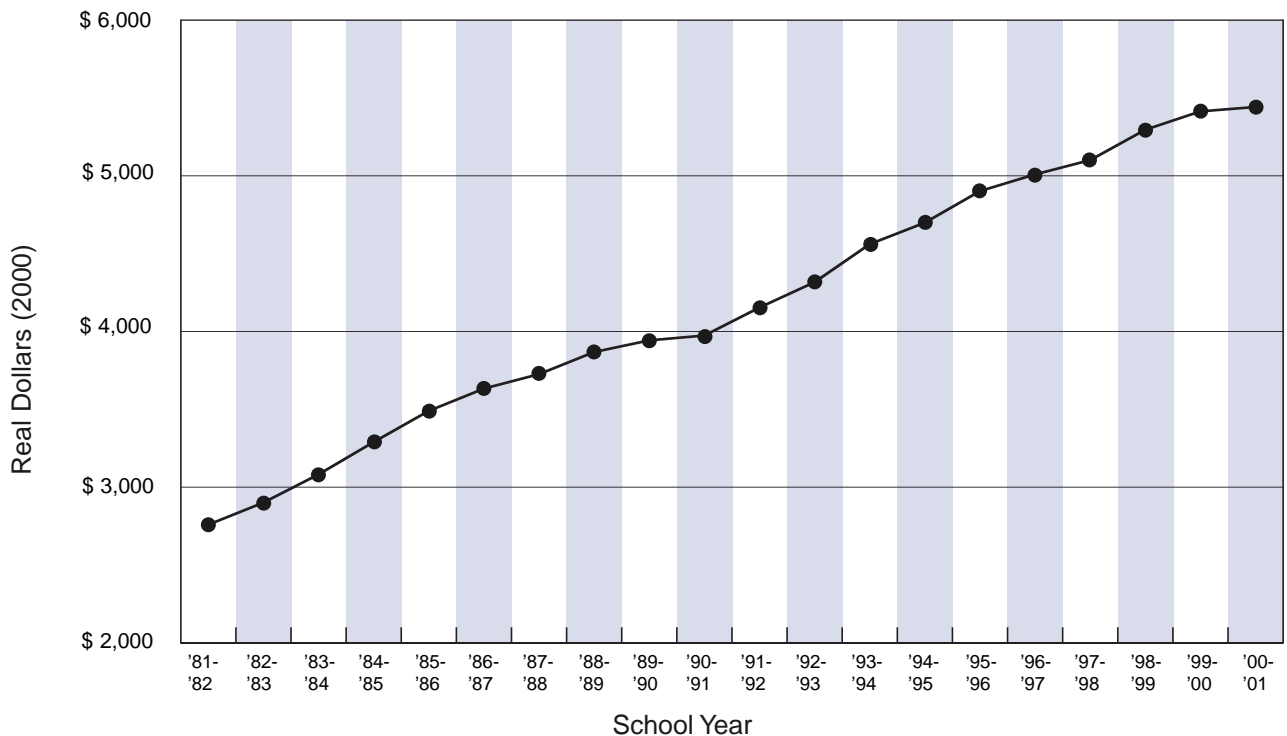
Roger S. Kuo  
Adjunct Scholar

There are several milestones in the life of a young person. Of these, four in particular introduce young Americans to the U.S. tax system: going to college, getting married, purchasing a home, and having a first child. This paper will discuss in detail a few current tax policies with the most marked effects on people at these points in their lives: education tax credits, progressive income taxes, the marriage penalty, deductibility of home-based capital gains, and child tax credits.

### Education Tax Credits

The first significant milestone for many young American adults is going off to college. Roughly 43.7 percent of Americans between the ages of 18 and 21 were enrolled in college in 1999, the most recent year for which data are available.<sup>1</sup> Tuition is an important factor in a young person's decision to go to college, and a college education has become increasingly expensive over the years. Even adjusted for inflation,

Figure 1  
Average Tuition at All Undergraduate Institutions  
Constant 2000 Dollars



Source: National Center for Education Statistics, Department of Education.

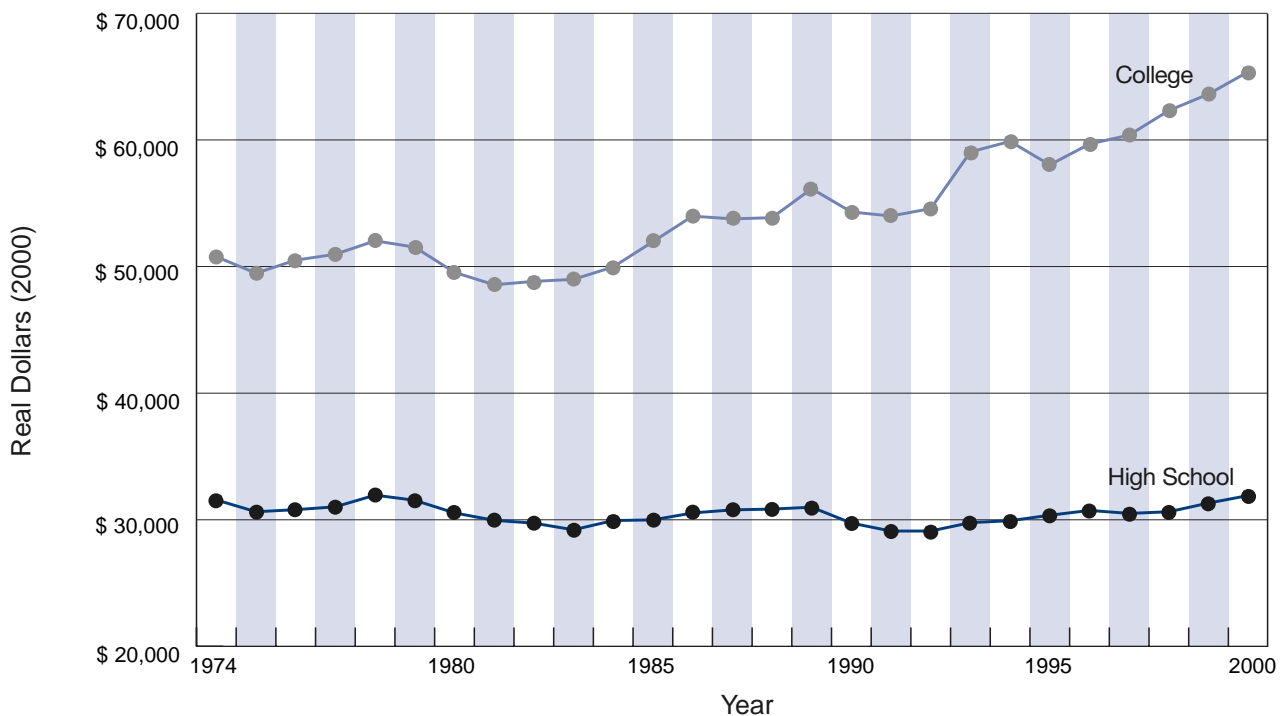
annual tuition has been on the rise since 1981, growing at an average annual rate of 3.6 percent (see Figure 1). Some of this acceleration can be attributed to the increased return on investment from a higher education. On average, real mean annual income of college graduates has grown by 1.6 percent per year since 1981, compared to an average annual increase of only 0.35 percent in real mean annual income for high school graduates<sup>2</sup> (see Figure 2).

Because tuition is growing faster than college graduates' real income, there appears to be tuition inflation; that is, the cost of education is rising faster than the salaries of college graduates. Lawmakers have reacted to this trend by enacting several education tax credits to encourage college attendance. The HOPE Scholarship, enacted in 1997, awards a \$1,500 tax credit against income tax liability annually for the first two years of post-secondary education. The Lifetime Learning tax credit, also enacted in 1997, is worth up to \$1,000 per year for post-secondary education beyond the first two years. Both credits are phased out for two groups

of taxpayers: those filing jointly who earn more than \$80,000 (modified adjusted gross income) and those filing individually and earning more than \$40,000.<sup>3</sup> In 2000, \$4.9 billion in educational tax credits were claimed on 6.6 million tax returns, an average of \$712 per return.<sup>4</sup>

These credits would seem to offer considerable relief to families struggling to send their children to college. However, such relief is less substantial than it appears for several reasons. First, many analysts believe that the existence of tuition credits has been one cause of continued tuition inflation over the past five year.<sup>5</sup> Second, the federal government and colleges and universities offer various forms of needs-based tuition assistance. When the government and schools consider needs-based tuition assistance, they view tax credits as an addition to a family's financial resources and factor them into their calculations of a family's expected financial contribution. For example, for a three-person family in Virginia with typical characteristics (see Table 1), the \$1,500 HOPE credit raises the expected institutional family contribution by \$510, an increase of 6.7 percent.

**Figure 2**  
Average Annual Income for High School and College Graduates  
Constant 2000 Dollars



Source: Bureau of the Census.  
Note: The Cesus Bureau used different methodology beginning in 1990.

We see, then, that colleges and universities have directly captured at least some of the benefit of the credits by decreasing available needs-based aid and increasing tuition more than normal market forces would demand, i.e., inflation and the

*Table 1*  
*Impact of the Hope Credit on Financial Aid*  
*School Year 2002-2003*

	WITHOUT Hope Credit	WITH Hope Credit
Adjusted Gross Income	\$ 80,000	\$ 80,000
Wages - Father	\$ 40,000	\$ 40,000
Wages - Mother	\$ 40,000	\$ 40,000
Untaxed income/benefits	\$ 1,500	\$ 1,500
Hope Tax Credit	\$ 0	\$ 1,500
US Income Taxes	\$ 17,785	\$ 16,285
Cash, savings and checking	\$ 10,000	\$ 10,000
Expected Family Contribution	\$ 7,561	\$ 8,071

Source: The College Board EFC Calculator, October 2002.

economic return to a post-secondary education. But it is not only colleges that capture part of the HOPE scholarship and Lifetime Learning credits. The federal government also “recaptures” some of the benefit from these credits by limiting their availability to families through the Alternative Minimum Tax (AMT). The AMT was enacted in 1969 to ensure that high-income taxpayers always pay income taxes by eliminating some of their deductions and credits. For various reasons, among them that the HOPE and Lifetime Learning credits decrease a family’s tax liability, an increasing number of taxpayers, many middle-income, are being affected by the AMT. All taxpayers potentially subject to the AMT must compute their taxes using both conventional rules and with the AMT formula, then pay the greater of the two. In fact, the AMT can eliminate all the benefits of the higher education credits. The House Ways and Means Committee has estimated that the interaction between the AMT and the HOPE and Lifetime Learning credits can diminish the value of the education credits for middle-class families with incomes as low as \$41,350.<sup>6</sup>

For example, a couple that has two children and earns \$64,100, the median income of four-person families in the United States according to the Census Bureau, pays approximately \$6,743 in federal individual income taxes. If the family

claims the HOPE scholarship and Lifetime Learning credit (\$2,500 total), the family’s tax liability drops to \$4,243. Under the Alternative Minimum Tax, however, the family’s liability is \$4,966. Since the family must pay the larger of the two tax liabilities, the family’s benefit from the education credits is reduced by \$723 or 29 percent.<sup>7</sup>

The result is that families may not enjoy the full \$1,500 benefit of the HOPE scholarship tax credit or the \$1,000 of the Lifetime Learning tax credit. Colleges and universities absorb some of the credits’ benefit through higher tuition rates and/or lower needs-based assistance costs. The federal government receives a benefit too, as politicians can boast enactment of a generous credit for constituents, while at the same time the value of the credits is diminished by the AMT and the government spends less on needs-based assistance programs.

## How Income Tax Progressivity Hurts Education

It is generally accepted that after an individual finishes some form of higher education, he or she will earn a higher income in the future. Thus, young Americans have a financial incentive to go to college and graduate. However, this incentive is considerably less due to the fundamental nature of the U.S. income tax code.

Since the passage of the income tax in 1913, higher rates have been charged at higher levels of income. Originally termed a surcharge, this type of structure came to be called “progressive” because advocates of this graduated rate structure wanted a positive-sounding description. Today, the tax base is divided into six income brackets. Each of these brackets has an associated tax rate (see Table 2). The first dollar of taxable income is taxed at the ten percent rate, and as income gets higher, it is taxed at “progressively” higher rates.<sup>8</sup>

For example, a single taxpayer who made \$50,000 in taxable income in 2001 owed the federal government 10 percent of his first \$6,000 (\$600), 15 percent of the next \$21,050 (\$3,158), and 27.5 percent of the remaining \$22,950 (\$6,311). Therefore, this taxpayer owed the federal government a total of \$10,069 in income taxes or 20.1 percent of his total taxable income.

*Table 2  
Federal Income Tax Rates and Brackets  
Calendar Year 2001*

Married Filing Jointly		Married Filing Separately		Single		Head of Household	
Tax Rate	Income Brackets	Tax Rate	Income Brackets	Tax Rate	Income Brackets	Tax Rate	Income Brackets
10.0%	>\$0	10.0%	>\$0	10.0%	>\$0	10.0%	>\$0
15.0%	>\$12,000	15.0%	>\$6,000	15.0%	>\$6,000	15.0%	>\$10,000
27.5%	>\$45,200	27.5%	>\$22,600	27.5%	>\$27,050	27.5%	>\$36,250
30.5%	>\$109,250	30.5%	>\$54,625	30.5%	>\$65,550	30.5%	>\$93,650
35.5%	>\$166,500	35.5%	>\$83,250	35.5%	>\$136,700	35.5%	>\$151,650
39.1%	>\$297,350	39.1%	>\$148,675	39.1%	>\$297,350	39.1%	>\$297,350

Source: Facts & Figures on Government Finance, ed. David K. Hoffman, 36th Edition.

Note: The statutory rates dropped on July 1, from 39.6% to 38.6%, from 36% to 35%, from 31% to 30%, and from 28% to 27%. As a result of this mid-year change, the rates taxpayers actually paid were an average of the old and new rates. These “blended” rates are shown.

While a graduated rate schedule is often defended as socially beneficial, it also introduces incredible complexities and economic disincentives, and one of those is a disincentive for people to earn college and graduate degrees. Going to school typically results in earnings growth, which puts individuals in higher income tax brackets. As a result, marginal returns on future earnings are reduced. In other words, the more progressive the income tax, the more unprofitable it is for a young person to invest in his own human capital.

The following example makes this disincentive a bit clearer. Joe and Mary have just finished high school. Mary decides to go to college and graduate school to become a Ph.D. economist. To this end, she attends college for four years (costing \$13,000 per year, the average tuition, room, and board at a four-year institution according to the Department of Education) and graduate school for five years (suppose she receives a fellowship and therefore pays no graduate school tuition). After school, Mary lands a job earning \$75,000 in taxable income per year. Joe, on the other hand, decides to get a job right out of high school earning \$25,000 per year. Based on 2001 tax law and assuming that both remain single and take the standard deduction, Mary’s effective income tax rate is 20.3 percent and Joe’s effective tax rate is 10.5 percent. This means that during their first year of work, Mary and Joe take home \$59,753 and \$22,371 respectively in after-income tax dollars. The proper measure of how much going to school is worth now is the

difference between the net present values of Mary and Joe’s incomes over time. At an interest rate of 6.3 percent (the average return on a federal 10-year bond over the past decade) Mary will have to work 12 years after she receives her Ph.D. before she has earned as much as Joe. Three of these years are due to the difference in taxes paid over the period. In other words, if Mary and Joe were taxed at the same rate, Mary would have to work only 9 years after receiving her graduate degree to match Joe’s lifetime earnings to date. This poses a strong disincentive for Mary to go to school because depending on her preferences, Mary may not be willing to wait for such a long time to earn the same in total take-home pay as Joe (see Methodology).

We see, then, that progressive income taxes are a barrier to educational advancement. Critics will point to data showing that people with advanced degrees have more disposable income, even after paying higher taxes. This assertion is true, but the progressive income tax structure is still crowding out people at the margin. That is, progressive taxes decrease the returns to education just enough to make many people who are unsure of going to college decide against it. Those who do decide to go to school pay the “penalty” by paying at higher tax rates after they graduate.

The inverse relationship between marginal tax rates and human capital accumulation has been widely noted in the economic literature. James Heckman et al note: “College attendance rises

dramatically as the higher earnings associated with college graduation are no longer taxed away at higher rates.”<sup>9</sup> Further, Michael Boskin finds: “The current progressive rate structure of the personal income tax probably creates a disincentive to accumulate human capital.”<sup>10</sup>

Some may argue that high school graduates who are unsure about college, those at the margin who are dissuaded from attending college due to the progressive nature of the individual income tax code, probably would not make much difference in U.S. output anyway. This is a misguided belief. A college education increases a worker’s productivity at least a small amount, and because of the power of compounding, even a small increase in the growth rate of per capita output would increase the long-term standard of living by a significant amount.

Paul Romer verifies this result and goes on to claim that the lack of people with advanced science and engineering degrees adversely affects productivity growth by hampering technological progress and worker productivity.<sup>11</sup> The federal government has many programs to boost technological progress and stimulate research and development, including several tax-credit programs. However, with a paucity of people with advanced degrees in the labor force, spending large amounts of money to boost innovation will only result in small technological productivity gains. Even well designed policies to boost research and development can flop if there is not a corresponding increase in human capital.

Lack of educational attainment also hampers productivity growth in a more obvious way. If people do not have adequate education, they will not have the skills to use new technologies to their greatest extent. For example, those who are uneducated and have never used a computer will typically be less productive than an educated individual with computer experience.

Thus, progressive income taxes hamper productivity growth by punishing the return to education. Elimination of this distortion could have a dramatic, positive effect on the economy in the long run. U.S. policymakers should be mindful that even small, sustained increases in productivity growth can have dramatic effects on Americans’ standards of living.

## The Marriage Penalty

The next major milestone in a young person’s life is typically marriage. Just as with going to college or obtaining an advanced degree, there are considerable tax consequences when two young Americans decide to get married. Specifically, due to various aspects of the individual income tax code, taxpayers can face different tax liabilities depending on whether they file jointly as a married couple or separately as two singles. A “marriage penalty” occurs when joint tax liability is larger than the combined tax liabilities of each individual and a “marriage bonus” occurs when the joint tax liability is smaller. The Congressional Budget Office estimated that 42 percent of married couples incurred marriage penalties and 51 percent received bonuses in 1996.<sup>12</sup> The average size of the marriage penalty was \$1,400 and the average size of the marriage bonus was \$1,300. When a taxpayer marries someone who makes significantly more or less than he does, the newlywed couple will discover a marriage bonus when they file a joint tax return. On the other hand, a couple with two similar incomes typically suffer a marriage penalty. In general, a marriage penalty switches to a bonus when one spouse’s income share exceeds 70 percent of the family’s joint income.

There are several aspects of the federal individual income tax code that lead to either a marriage penalty or bonus. The main source of this distortion is the progressive nature of the federal individual income tax code. If two individuals with disparate incomes decide to get married, the progressive tax system allows relatively more of the couple’s joint income to be taxed at lower rates. On the other hand, if two individuals with the same income get married, more of their joint income will be taxed at a higher marginal rate because joint income brackets are less than twice as wide as single income brackets. The narrowness of the current income tax brackets exacerbates this distortion.

Another source of the marriage penalty is the joint standard deduction. Because it is not currently twice as high as the single standard deduction, couples have more “taxable income” than they would if filing as singles, and therefore face a higher effective tax rate.

The Earned Income Tax Credit (EITC), which provides low-income tax filers a refundable tax credit depending on the number of children they have, can exacerbate the marriage penalty. If two people with children were to get married, it is possible for their joint income to increase enough so that the joint credit is less than the credit each would have received individually.

Finally, the Taxpayer Relief Act of 1997 created additional sources of marriage distortions by phasing out eligibility for child credits and education credits differently for married couples than for singles.

To demonstrate how marriage penalties and bonuses come about, we provide three examples: a two-earner couple that faces a marriage penalty because the husband and wife have equal incomes; a two-earner couple that receives a marriage bonus because one income is much higher than the other; and a one-earner couple that receives a relatively large marriage bonus.

*Example 1: A Marriage Penalty*

Alex and Allison each earned \$40,000 in 2001 (See Table 3). They each would have owed \$5,270 in income taxes if they had filed as singles in 2001, but by filing jointly as a married couple, they owed \$12,065. Thus they incurred a marriage penalty of \$1,525.

Alex and Allison's marriage penalty arose because the standard deduction for married couples is not twice that of a single filer, and the joint income tax brackets are not sufficiently wide. Thus, more of Alex and Allison's joint

income gets taxed at higher rates than if they had filed individually.

*Example 2: A Marriage Bonus*

Brenda earned \$70,000 during 2001 and her husband Bob earned \$10,000. If they had remained single, they would have paid a combined \$13,775, but they filed jointly and received a marriage bonus of \$1,710 (see Table 4).

This bonus arises because if Brenda had filed as a single, over half of her income would have been taxed at the 27.5 percent rate. By filing jointly, however, and taking advantage of the wider brackets afforded joint filers, Brenda is able to "allocate" more of her income to the lower 15-percent rate.

*Example 3: A Relatively Large Marriage Bonus*

Carla earned \$80,000 in 2001, and her husband Chad was not in the workforce. If they filed as individuals, Chad would have paid no taxes and Carla \$16,480. Together, they filed jointly and received a marriage bonus of \$4,415 (see Table 5).

In this case, the bonus arises not only because Carla is able to allocate more of her income to lower rates, but also because, by filing jointly, Chad and Carla are able to take advantage of a personal exemption for Chad and a higher standard deduction than if Carla had filed individually.

*Attempts to Eliminate the Marriage Penalty*

H.R. 1836, the Economic Growth and Tax Relief

*Table 3  
How Individuals with Similar Incomes Suffer a "Marriage Penalty"  
Calendar Year 2001*

	Single		Married
	Alex	Allison	Filing Jointly
Income	\$ 40,000	\$ 40,000	\$ 80,000
Less Personal Exemptions	\$ 2,900	\$ 2,900	\$ 5,800
Less Standard Deductions	\$ 4,550	\$ 4,550	\$ 7,600
Equals Taxable Income	\$ 32,550	\$ 32,550	\$ 66,600
Taxed at 10%	\$ 6,000	\$ 6,000	\$ 12,000
Taxed at 15%	\$ 21,050	\$ 21,050	\$ 33,200
Taxed at 27.5%	\$ 5,500	\$ 5,500	\$ 21,400
Total Tax Liability	\$ 5,270	\$ 5,270	\$ 12,065
<b>Marriage Penalty</b>			<b>\$ 1,525</b>

Reconciliation Act of 2001 (EGTRRA), will greatly reduce the marriage penalty, and even get rid of it entirely for some by 2009. Specifically, EGTRRA provides for a gradual increase in the standard deduction for married couples filing jointly beginning in 2005 until by 2009 it is exactly double that provided for single filers. The current standard deduction is only 167 percent as large as the standard deduction for singles (see Table 6).

The bill also gradually enlarges the 15 percent tax bracket for married couples so that by 2008 the 15 percent bracket for married couples will be twice as large as the 15 percent bracket for singles. This will shift family income into the 15 percent bracket from the next highest bracket (see Table 6).

EGTRRA also increases the EITC available to joint filers by increasing the earned income phase-out amount. This will take effect in 2002 and will

be fully phased in after 2007. Thus, legislation is in effect to reduce the marriage penalty significantly and, in fact, eliminate the marriage penalty completely for those taxpayers facing a top marginal rate of 15 percent by 2009. But as of now, marriage penalties and bonuses are still an issue and may still affect taxpayers. It is also important to note that every provision passed as part of EGTRRA, including those meant to minimize the marriage penalty, will sunset as of 2011. Therefore, unless action is taken by lawmakers, marriage penalties will continue to impact young couples considering marriage.

### Deductibility of Home-based Capital Gains

Typically, after getting married, young couples purchase their first house together. Again, tax policy plays a central role in this milestone event for young individuals, particularly after recent

*Table 4  
How Individuals with Dissimilar Incomes Get a Marriage Bonus  
Calendar Year 2001*

	Single		Married
	Bob	Brenda	Filing Jointly
Income	\$ 10,000	\$ 70,000	\$ 80,000
Less Personal Exemptions	\$ 2,900	\$ 2,900	\$ 5,800
Less Standard Deductions	\$ 4,550	\$ 4,550	\$ 7,600
Equals Taxable Income	\$ 2,550	\$ 62,550	\$ 66,600
Taxed at 10%	\$ 2,550	\$ 6,000	\$ 12,000
Taxed at 15%	\$ 0	\$ 21,050	\$ 33,200
Taxed at 27.5%	\$ 0	\$ 35,500	\$ 21,400
Total Tax Liability	\$ 255	\$ 13,520	\$ 12,065
<b>Marriage Bonus</b>			<b>\$ 1,710</b>

*Table 5  
How an Individual Taxpayer Receives a Large Marriage Bonus When Marrying Someone With No Income  
Calendar Year 2001*

	Single		Married
	Chad	Carla	Filing Jointly
Income	\$ 0	\$ 80,000	\$ 80,000
Less Personal Exemptions	\$ 0	\$ 2,900	\$ 5,800
Less Standard Deductions	\$ 0	\$ 4,550	\$ 7,660
Equals Taxable Income	\$ 0	\$ 72,550	\$ 66,600
Taxed at 10%	\$ 0	\$ 6,000	\$ 12,000
Taxed at 15%	\$ 0	\$ 21,050	\$ 33,200
Taxed at 27.5%	\$ 0	\$ 38,500	\$ 21,400
Taxed at 30.5%	\$ 0	\$ 7,000	\$ 0
Total Tax Liability	\$ 0	\$ 16,480	\$ 12,065
<b>Marriage Bonus</b>			<b>\$ 4,415</b>

*Table 6  
How the 2001 Tax Cut Will Diminish the Marriage Penalty*

Calendar Year	Standard Deduction for Joint Returns Compared to Individual Returns	Endpoint of 15 percent bracket for Joint Returns Compared to Individual Returns
Current	167%	167%
2005	174%	180%
2006	184%	187%
2007	187%	193%
2008	190%	200%
2009	200%	200%
2010	200%	200%
2011 and later	* 167%	* 167%

Source: Joint Committee on Taxation.

\* Note: The 2001 tax cut expires on December 31, 2010, causing all rates and brackets to revert to 2001 levels.

changes in federal capital gains tax policy. Prior to 1997, U.S. tax law allowed taxes on capital gains resulting from the sale of a homeowner's principal residence to be deferred if the seller bought a replacement home of equal or greater value within the next two years. The Tax Relief Act of 1997 (TRA'97) reduced the maximum capital gains rate from 28 to 20 percent and allowed homeowners to exclude from their taxable income up to \$250,000 (\$500,000 on a joint return) of the gain on the sale of their house, provided the house had been used as a principal residence for 2 of the 5 years prior to selling. The new law made no restrictions on the price of the new house and specified no time frame in which a new house must be purchased.

These provisions of TRA'97 provided huge tax savings for existing homeowners. For example, suppose Chris and Sandra faced a top marginal income tax rate of 27.5 percent in 2001. Under current law, if they had sold their primary residence for a profit of \$100,000, they would have paid no tax on the home sale because the profit was less than \$500,000. Prior to 1997, Chris and Sandra would have faced a 28 percent capital gains tax on the sale of their house and thus would have received only \$72,000 in after-tax profits. Chris and Sandra would still have benefited from TRA'97 even if the profit on the sale of their house exceeded \$500,000. Suppose they sold the house for \$600,000 in profit. They would receive \$580,000 after taxes (( $\$600,000 - \$500,000$ ) \* 20 percent in taxes), which is much larger than the \$432,000 they would have received after-tax prior to passage of TRA'97.

Thus, the Tax Relief Act of 1997 dramatically increased the rate of return on housing investments relative to all other investments. As houses became more attractive investments, the demand for housing increased. This increased demand has been capitalized in the housing market through increased housing prices.

The capitalization of TRA'97 into increased housing prices has benefited existing homeowners under the age of 65 who are downsizing their housing needs. Typically, these beneficiaries are empty-nest baby-boomers, those homeowners who are not yet 65 but whose children are old enough to move away from home. Under pre-TRA'97 tax law, such a downsizing would have resulted in a significant capital gain and tax liability. However, under post-TRA'97 tax law, downsizing does not result in any (or at least a reduced) capital gain tax liability.

Other homeowners, those in a different stage in their lives, do not benefit from the new law nearly as much. Younger families typically look for relatively large houses to accommodate growing families, and therefore did not face any capital gains tax liability under pre-TRA'97 law. Older couples also did not face any capital gains tax liability under pre-TRA'97 law because of an exemption to the tax for taxpayers over the age of 65. Thus, the 1997 bill had little effect on the tax situations of these homeowners, but it substantially helped those looking to downsize before they reached the age of 65. Since passage of the 1997 bill, these homeowners have been much more inclined to sell their homes—more so than relatively young or relatively old homeowners—because the “penalty” associated with

purchasing a smaller home prior to turning 65 has been removed. First-time homebuyers, on the other hand have been harmed by the new law because they face higher costs due to the capitalization of this new tax benefit in the cost of housing. Thus, TRA'97 has essentially resulted in a significant transfer of wealth from young couples buying their first house, or upsizing their housing needs, to pre-retirement empty nesters.

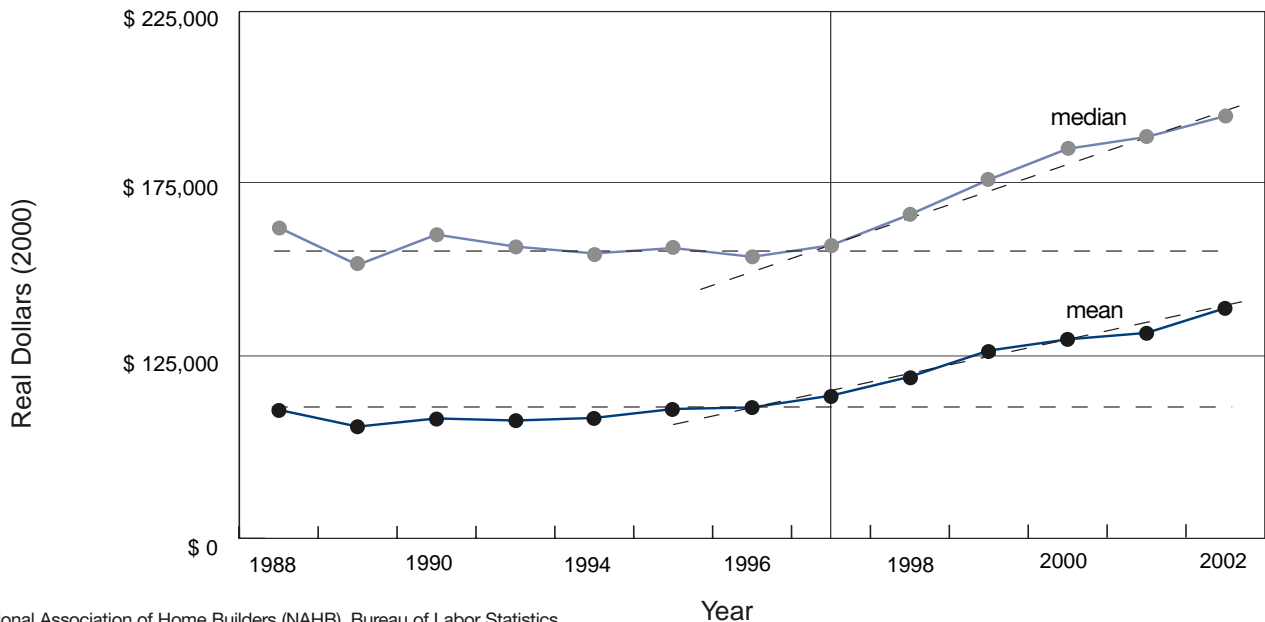
Statistics from the National Association of Home Builders are consistent with the observation that the capital gains provisions of TRA'97 have resulted in higher housing prices.<sup>13</sup> Graphing the sale prices of existing homes demonstrates a marked increase in the price growth beginning in 1996 as people anticipated the capital gains cut and deductibility provision in the 1997 bill. Real median existing home sale prices grew by an average of 2.7 percent a year between 1996 and 2001 compared to very little real growth between 1990 and 1996 (see Figure 3).

Certainly, there are many other factors that have contributed to this increase in housing demand and prices such as mortgage interest rates being at historic lows and large income/output growth. However, econometric analysis demonstrates that the marked rise in prices is in part caused by the Tax Relief Act of 1997. A regression

model can be constructed in which pre-1997 real mean prices can be explained very well by fixed mortgage rate spreads, median size of newly constructed homes, and the population. If the Tax Relief Act of 1997 had no impact on real housing prices, then we would expect our pre-1997 model to accurately predict post-97 prices. However, this is not the case. Figure 4 demonstrates that actual real post-97 existing home prices are as much as 13.7 percent higher than the model would predict. The statistical significance of the systemic change in parameters can also be verified by an econometric test (see Methodology).

Some of the difference may be due to a speculative bubble that many economists believe the housing market is in right now, but certainly much of the difference can also be attributed to the Tax Relief Act of 1997. From our model, we can conclude that current existing home prices are as much as 13.7 percent higher than they would have been had Congress not passed the Tax Relief Act of 1997. These higher prices make it more difficult for all people to purchase existing homes, but especially more difficult for young homebuyers purchasing their first home or upsizing their house in preparation for a growing family.

*Figure 3  
Median and Mean Existing Home Sale Prices Before and After Passage of TRA'97  
Constant 2000 Dollars*



Source: National Association of Home Builders (NAHB), Bureau of Labor Statistics.  
Note: deflated into real terms with CPI-U.

**Child Tax Credits**

Having a first child marks a huge milestone in the lives of young married couples and can have some dramatic effects on tax liability. The biggest single provision of the Taxpayer Relief Act of 1997 was a new credit of \$500 for every dependent child under the age of 17. In 2000, over \$19.7 billion worth of credits were claimed on over 26 million tax returns.<sup>14</sup> The recently passed Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRAA) increased the credit to \$600 in 2002, \$700 per child between 2005 and 2008, \$800 per child in 2009, and \$1,000 in 2010. The credit begins to phase out for parents with adjusted gross incomes above \$110,000 on a joint return and above \$75,000 for single parents.

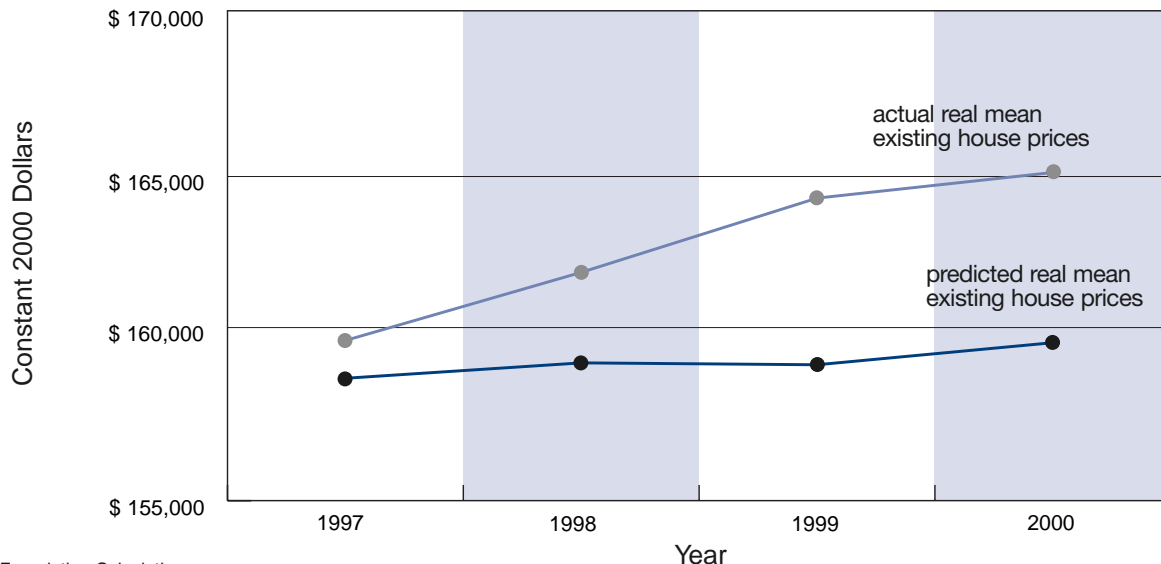
Under the 1997 bill, child credits were “nonrefundable,” which means they could only be used to offset individual income taxes paid. However, EGTRRA makes the credits “refundable,” which means it is possible to get the credit even with a negative tax liability, in which case an individual can get money from the government. This provision was included to ensure that the child credits applied to relatively poor families with little or no individual income tax liability. Specifically, the tax credit is refundable up to 10 percent in excess of \$10,000 (roughly the annual income earned by someone working at minimum wage)

from 2001–2004. The maximum refundable credit increases to 15 percent in excess of \$10,000 starting in 2005. The \$10,000 is indexed to inflation beginning in 2002. For example, if a single mother currently makes \$12,000 per year, up to \$200 of the child tax credit is refundable.<sup>15</sup>

To understand the impact of the child tax credit on a young family consider the effect of a \$1,000 tax credit on the tax liability of a couple that has its first child in 2010. Using CBO predictions of inflation, the median income for males of all races between the ages of 25 and 34 will be \$39,287 in 2010. Based on the same inflation assumptions, the predicted median income for females of all races between the ages of 25 and 34 will be \$26,856 in 2010. Thus, a reasonable estimate for newlyweds is \$66,143 in joint income in 2010.<sup>16</sup> The predicted standard deductions, personal exemptions, and income taxes are given in Table 7, again using CBO’s inflation predictions.<sup>17</sup>

Thus, the median newlywed family having its first child in 2010 will experience a 2.3 percentage point drop in the family’s effective tax rate due to the \$1,000 per child tax credit. Of course, because EGTRRA sunsets in 2011, this same family will face a substantial tax increase between 2010 and 2011 as the child tax credit is reduced from \$1,000 to \$500 per child and once again becomes nonrefundable.

*Figure 4*  
*Predicted and Actual Average Prices of Existing Homes*  
*1997–2000*



Source: Tax Foundation Calculation.

**Table 7**  
*Impact of the Child Credit on the Median Couple's Finances*  
*Calendar Year 2010*

	Predicted Nominal Dollars, 2010	
	Before First Child	After First Child
Total Income	\$ 66,143	\$ 66,143
Personal Exemption	\$ 7,310	\$ 10,966
Standard Deduction	\$ 9,564	\$ 9,564
Taxable Income	\$ 49,269	\$ 45,613
Taxed at 10%	\$ 14,884	\$ 14,884
Taxed at 15%	\$ 34,385	\$ 30,729
Child Credit	\$ 0	\$ 1,000
Total Tax Liability	\$ 6,646	\$ 5,098
<b>Effective Tax Rate</b>	<b>10.0%</b>	<b>7.7%</b>

## Summary and Conclusion

This study provides current data and discusses current tax policy as it affects young Americans at certain milestones in their lives: going to college, purchasing a first house, getting married, and having a first child.

It was shown that students and their families do not get the full benefit of education tax credits because of reduced financial aid, increased tuition, and the alternative minimum tax. Further, progressive income taxes discourage educational advancement by penalizing the returns to education and thereby hampering economic growth.

Some young Americans still face a marriage penalty because of the graduated rate schedule built into the individual income tax and discrepancies between the bracket size and standard deduction allowed for single and joint filers. There is currently legislation in effect that greatly reduces these distortions by 2009, but until this legislation completely phases in, marriage penalties are still an issue.

The deductibility of home-based capital gains provided by the Tax Relief Act of 1997 dramatically increased the return on housing investments, so existing home prices after 1997 are as much as 13.7 percent higher than they would be had TRA'97 not passed. This fact makes it more difficult for young families to afford their first house. Finally, this paper discussed the impact of child tax credits, which would drop effective tax rates by approximately 2.3 percentage points in 2010 for a median newlywed couple that just had its first child.

## Methodology

The example of Mary and Joe presented in the "Educational Disincentives from Income Tax Progressivity" section depends upon the following assumptions, in addition to those presented in the text:

1) Mary's base salary of \$75,000 is assumed to increase by 1.6 percent per year, the average, real mean rate of increase for college graduates between 1981 and 2001. Joe's base salary of \$25,000 is assumed to increase by 0.35 percent per year, the average, real mean rate of increase for high school graduates between 1981 and 2001.

2) The effective tax rate faced by both Mary and Joe in their first year of employment, based on 2001 federal income tax law, is applied to each of the subsequent years. Thus, it is assumed that no change in tax law occurs over the period.

The regression results presented in the "Deductibility of Home-based Capital Gains" section are derived from the following analysis: Real mean housing prices were put in 2000 dollars using the Bureau of Labor Statistic's CPI-U inflation index. Only intermittent and irregular data could be found for median size of existing homes, so median size of new homes was used instead after noting that the two seemed to follow a similar trend. This data was retrieved from the Census Bureau's Manufacturing, Mining, and Construction Statistics. Population data is also from the Census Bureau. Mortgage spreads were calculated by subtracting the Federal Funds rate from fixed mortgage rates. The estimated AR(1) model for real mean housing prices from 1980-1996 using Prais-Winsten is:

$$l\text{hprice} = 16.51748 + 0.9966419 l\text{size} - 0.966446 l\text{pop} - 0.0071026 \text{spread}$$

in which  $l\text{hprice}$  = pre-1997 real mean housing price;  $l\text{size}$  = median size of newly constructed new homes;  $l\text{pop}$  = population; and,  $\text{spread}$  = the spread between mortgage interest rates and the federal funds rate. The estimation has an  $R^2 = 0.9997$ . A prefixed 'l' means we took the natural log of the data set. All regressors were significant at the 5 percent level.

A simple Chow test shows parameter instability. Under the null hypothesis  $\beta_1 = \beta_2$  (where period

1 is 1980–1996 and period 2 is 1997–2000), we come up with the following autocorrelation models with Prais-Winsten:

period 1 ( $R^2=0.004188139$ ):  $lbprice = 16.51748 + (0.9966419 lsize) - (0.966446 lpop) - (0.0071026 spread)$

period 2 ( $R^2 = 0.000043508$ ):  $lbprice = -41.0547 - (1.166626 lsize) + (4.949178 lpop) + (0.0152517 spread)$

period 1, 2 ( $R^2 = .011609798$ ):  $lbprice = 7.013712 + (0.6787349 lsize) - (0.0096032 lpop) - (0.0034553 spread)$

This yields an  $F = 6.1025 \sim F(4, 14)$ , which has a  $p = 0.004657$ . This is very small, indicating parameter instability between the two periods.

## Notes

<sup>1</sup> U.S. Bureau of the Census.

<sup>2</sup> Digest of Education Statistics, 2001, table 316, National Center for Education Statistics, U.S. Department of Education.

<sup>3</sup> The phase-out ranges for both the Hope and Lifetime Learning credits will be indexed for inflation beginning in 2002.

<sup>4</sup> Internal Revenue Service, Statistics of Income Division, *SOI Bulletin*, Winter 2001–2002.

<sup>5</sup> See Knight, Shahira. *College Affordability: Tuition Tax Credits vs. Saving Incentives*. Joint Economic Committee (JEC) Study, October 1997.

<sup>6</sup> See Knight (1997).

<sup>7</sup> Quinn, Jane Bryant. “New Tax Credits May Bring Cuts in Student Aid.” *The Washington Post* (Business), August 31, 1997.

<sup>8</sup> The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA), signed by President George W. Bush on June 7, 2001, gave individual taxpayers the benefits of the new 10 percent rate in 2001 through a “prebate” of the money rather than itemization of the new rate on the actual tax forms. EGTRRA also calls for additional individual income tax rate reductions over the next four years. In 2006 through 2010, once all the rate reductions are fully phased-in, the six rates will be 10 percent, 15 percent, 25 percent, 28 percent, 33 percent, and 35 percent. In 2011 the entire individual income tax rate structure reverts back to pre-EGTRRA levels of 15 percent, 28 percent, 31 percent, 36 percent, and 39.6 percent.

<sup>9</sup> Heckman, James. J., Lance Lochner, Christopher Taber. “Tax Policy and Human-Capital Formation.” *American Economic Review*, May 1998, 88(2), pp. 293–7.

<sup>10</sup> Boskin, Michael J. “Notes on the Tax Treatment of Human Capital.” National Bureau of

Economic Research (Cambridge, MA) *Working Paper No. 116*, 1975.

<sup>11</sup> Romer, Paul M. “Should the Government Subsidize Supply or Demand in the Market for Scientists and Engineers?” National Bureau of Economic Research (Cambridge, MA) *Working Paper No. 7723*, June 2000.

<sup>12</sup> The remaining 7 percent paid effectively the same amount as had each individual filed separately. See Hintz, Claire M. “The Marriage Penalty,” *Tax Foundation Special Report*, March 1998, No. 77.

<sup>13</sup> *Housing Facts, Figures, and Trends 2001*, National Association of Home Builders (NAHB), June 2001.

<sup>14</sup> Internal Revenue Service, Statistics of Income Division, *SOI Bulletin*, Winter 2001–2002.

<sup>15</sup> Families with three or more children are also allowed a refundable credit for the amount by which the taxpayer’s Social Security taxes exceed the taxpayer’s earned income credit, if that amount is greater than the refundable credit based on the taxpayer’s earned income in excess of \$10,000.

<sup>16</sup> Median income levels for all people between ages of 25 to 34 from Table P-8 of Census Bureau. CPI-U was used to determine inflation rate of 2001. CBO predictions (Table 4, CBO Testimony: An Analysis of the President’s Proposals for 2003, March 6, 2002) were used for predicted inflation rates for 2002 to 2010: 1.8% in 2002 and 2.5% from 2003–2010.

<sup>17</sup> Standard deductions and personal exemptions from 2000–2002 taken from JCX-50-01. CBO inflation estimates were used to project these figures to 2010. Income tax brackets were inflated with CBO predictions starting from 2000 levels.



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Editor and Communications Director, Bill Abern

Tax Foundation  
1250 H Street, NW, Suite 750  
Washington, DC 20005  
(202) 783-2760  
(202) 783-6868 fax  
www.TaxFoundation.org  
TF@TaxFoundation.org