THE IMPORTANCE OF MODELING INCOME TAXES OVER TIME. U.S. REFORMS AND OUTCOMES

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NBER Working Paper No. 30725
December 2022, Revised January 2023
JEL No. H2,H30

ABSTRACT

While "'Tis impossible to be sure of any thing but Death and Taxes" Bullock (1716), the structure of taxes and their burden have undergone large and frequent changes over time. We provide a brief history of U.S. federal income tax reforms since the 1960s, calculate effective federal income tax rates for each wave of the Panel Study of Income Dynamics, and discuss how effective taxation changed from 1969 to 2016. We show that most tax regimes are short-lived and that the variation in taxes over time and across groups is large. We also use an estimated dynamic model of couples and singles to show that the various tax regimes that we estimate imply very different labor market and saving behavior. These findings stress the importance of studying and modeling tax changes over time and across groups.

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1   Introduction

In 1716, British dramatist Christopher Bullock wrote, "'Tis impossible to be sure of any thing but Death and Taxes," and in 1789, Benjamin Franklin reiterated that "our new Constitution is now established, and has an appearance that promises permanency; but in this world nothing can be said to be certain, except death and taxes."

While taxes have been around for a long time, their structure has undergone frequent changes over time. We use the Panel Study of Income Dynamics (PSID) to compute federal effective tax functions year by year (or every other year, after the data turn biannual) from 1969 to 2016 to evaluate how income taxes have changed over time for several groups of people. We use these effective tax functions to compute average and marginal tax rates and income tax progressivity, and to study taxes as a function of taxable income. We also provide an overview of the history of the changes in income tax laws in the United States from 1962 to 2016, which we use to better understand the rationale for these reforms, the economic environment in which they took place, and how these tax reforms translate into effective taxation. Finally, we discuss in detail the most notable reforms that occurred between 1969 and 2016 and evaluate their effects by using an estimated dynamic model of couples and singles.

Effective tax functions describe the empirical relationship between taxes paid and pre-tax income, approximated using a parsimonious functional form. Hence, they are both a convenient way to represent the key features of a tax system and a useful instrument for economic analysis. In fact, estimating effective taxes and relating them to the tax code and its stated goals is not only interesting but also important for understanding many economic questions, including those pertaining to the aggregate and distributional effects of taxes and transfers. For instance, Barro and Redlick (2011) computes the aggregate income multipliers of taxes as a result of the changes in marginal tax rates.

In addition, there is a vast literature that uses estimated tax functions in quantitative structural models of household behavior to study a variety of issues, including the effects of taxes on household behavior and welfare, inequality, and Social Security and other transfer programs. Often, for simplicity, structural models adopt the tax functions for a given period and ignore the variation of taxes over time. As mentioned above, in addition to compiling a detailed history of the income tax reforms in the

United States—which highlights the many significant changes in income taxation that occurred over the last sixty years—we estimate effective tax functions for each year. Our work thus also provides the inputs to incorporate time variation in taxes into structural models.

Most of these frameworks also adopt the paradigm of a one-agent decision-maker, again for simplicity, but more recent work stresses the importance of modeling both couples and singles to better understand the answers to many important questions (see, for instance, Borella, De Nardi, and Yang (2018) and (2020)). In addition, and importantly, during this time period, the federal tax code taxed single and married people differently. For these reasons, we estimate both effective tax functions that abstract from marital status[1] and effective tax functions for singles and married couples. The first set of tax functions can be used in models that abstract from the distinction between couples and singles. The second set is suited to richer models that allow for such a distinction.

We also use a structural model to evaluate the effects of the tax changes that we observe. To do so, we adopt the framework in Borella, De Nardi, and Yang (2023), which features a rich dynamic life cycle model of labor supply and savings for couples and singles. We estimate it using the Method of Simulated Moments for the 1945 birth cohort. As a result, our model matches well the life cycle profiles of labor market participation, hours, and savings for married and single people and also generates plausible elasticities of labor supply.

Our findings can be summarized as follows. First, we find that the trends of average and marginal tax rates are broadly similar. When average tax rates increase, marginal tax rates typically rise, regardless of the political regime and economic circumstances. These patterns are robust across time and household types, as we observe them between 1969 and 2016 and for the representative decision unit, couples, and singles. For example, when the Reagan reforms in the eighties lowered marginal tax rates, the average tax rates also decreased.

Second, we document significant variation in tax rates and income tax progressivity for the median decision unit across time and household types. The first year of our analysis, 1969, saw the transition of the presidency from Johnson to Nixon.

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[1]We do so by constructing a representative decision unit using household-level data and, within the household, summing the incomes of the one or two adults present and computing the corresponding taxes.

In that year, the tax structure for the median household in each of the groups we consider was characterized by an average tax rate of 10.0 % for the representative decision unit, 10.8 % for married couples, and 7.3 % for singles. The corresponding marginal tax rates were 15.8 %, 17.9 %, and 13.3 %, respectively.

During the seventies, three presidents were in office: first Nixon, then Ford, and finally Carter. Strong and rising inflation characterized most of the decade. The 1969 Nixon Tax Reform Act generated a temporary tax reduction, but effective taxes rose throughout the decade. The average tax rates for the median representative decision unit, couples, and singles all increased significantly. For example, the average tax rate for the median representative decision unit rose from 9.4 % in 1970 under Nixon to 10.6% percent in 1979 under Carter. The seventies also constitute the peak for the effective average tax rates of the median representative decision unit and married couples, reaching their highest values in 1978 at 12.0 % and 13.4 %, respectively. The marginal tax rate exhibited similar trends and rose steadily for everyone during the seventies. For the representative decision unit, for example, the marginal tax rate grew from 15.2 % in 1970 to 18.0 % in 1979, peaking at 20.9 % in 1978. As average and marginal tax rates grew during the seventies, so did progressivity.

The next decade was characterized by the eight-year Reagan presidency and the start of the George H. W. Bush administration and displayed a considerable decline in income tax rates and progressivity. The average and marginal tax rates for the median representative decision unit went from highs of 11.0 % and 18.5 % in 1980 to lows of 8.6 % and 14.7 % in 1989. Similarly, the average and marginal tax rates for median couples and singles decreased by at least 3 percentage points between the same years. These considerable tax rate decreases were related to the Reagan administration's Economic Recovery Tax Act of 1981 and Tax Reform Act of 1986, which Congress passed to lower income taxes. Progressivity also decreased for everyone between 1980 and 1989.

The nineties were characterized by an increase in both the level and progressivity of income taxation. First, President George H. W. Bush pursued an increase in tax rates to reduce the federal budget deficit through the Omnibus Budget Reconciliation Act of 1990. As a result, effective taxes increased for all of the groups that we consider. Then, in 1993, Clinton replaced George H. W. Bush as president. President Clinton attempted to raise taxes further with the Omnibus Budget Reconciliation Act of 1993, but effective taxes changed little between 1992 and 1993. Overall, the average and

marginal tax rates for the median representative decision unit grew steadily between 1990 and 2000, going from 8.6 % and 14.8 % to 10.3 % and 17.3 %, respectively. Similarly, the average and marginal tax rates for median couples and singles increased during the same period. Progressivity rose steadily for every demographic group between 1990 and 2000.

Following the increase in the nineties, income tax rates decreased in the first decade of the twenty-first century, while President George W. Bush was in office. After the 2001 and 2003 reforms, known as the "Bush tax cuts," the average tax rate for the median representative decision unit decreased through the decade, going from 10.3 % in 2000 to 8.2 % in 2008. Similarly, the marginal tax rate fell from 17.3 % in 2000 to 14.5 % in 2008. The dynamics of the median married couples' and singles' tax rates were similar. The average and marginal tax rates fell for both groups between 2000 and 2008.

The Obama presidency and a rebound in income following the Great Recession characterized the years between 2010 and 2016. As a result of the rise in income after the Great Recession, the average and marginal effective tax rates increased throughout the decade, despite the Obama administration's Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 and American Taxpayer Relief Act of 2012, which Congress passed to reduce the tax increases that were implied by the expiration of the Bush Tax cuts. The average tax rate for the median representative decision unit went from 6.7 % in 2010 to 8.2 % in 2016, while the marginal tax rate ranged between 13.5 % and 14.7 % during the same period. Similarly, the average and marginal tax rates for median couples and singles grew between 2010 and 2016.

Lastly, we use our estimated structural model to evaluate to what extent these tax regimes affect key economic behaviors and hence to what extent it is important to model the evolution of tax changes over time. We find not only that these tax regime changes are frequent but also that many of them imply effective tax variation that generates very different economic outcomes. For example, the increase in effective taxation that occurred during the 1973-1978 high-inflation tax period significantly and negatively affected the participation of married women, the hours worked by single and married men and women, and their labor income and savings. In particular, under the 1978 tax regime, the participation of young married women is 9.4 percentage points lower than under the 1973 regime; hours worked are 5.1%, 2.4%, 4.5%, and 1.7% lower for young married women, married men, single women, and single men,

respectively; their labor income is 20.2%, 3.1%, 6.2%, and 2.1% lower, respectively; and savings are 6.3%, 4.5%, and 6.0% lower, for couples, single women, and single men, respectively. The 1981 Reagan tax cut also affected these behaviors, although in the opposite direction and to a slightly smaller extent. Noticeable also are the 1986 Reagan tax cut, the 1990 George H. W. Bush tax increases, and the 2001 and 2003 George W. Bush tax cuts, which especially affected the participation of married women. Our model also predicts that the 2010 Obama tax cut extensions generated an increase in hours worked by all four groups.

Our paper provides several contributions. First, it compiles a history of federal income tax reforms in the United States over the last sixty years. Second, it evaluates the changes in federal income tax law by estimating effective tax functions by year. Third, it estimates tax functions both for a representative decision unit and for couples and singles, thus taking into account the differential impact of tax laws on different household types. Fourth, it relates the trends in average and marginal tax rates and income tax progressivity over the last fifty years with the changes in federal income tax law over the same period. Fifth, it shows that many of the observed tax changes have a large effect on household labor supply and savings.

The rest of the paper is organized as follows. Section 2 places our paper in the context of the existing literature. Section 3 describes our tax function and estimation strategy. Section 4 analyzes the evolution of effective income taxes over time for the representative decision unit. Section 5 describes effective income taxes over time by household type. Section 6 describes our structural model. Section 7 studies the effects of various tax regimes in the context of nine notable tax reforms. Section 8 concludes.

2   Related Literature

Our paper relates to three branches of the literature. The first one **evaluates the effects of marginal tax rates on output over time**. It includes Barro and Redlick (2011), which computes marginal tax rates from IRS income tax returns, and Romer and Romer (2010) and Mertens and Montiel Olea (2018), which use a narrative approach. We complement this literature by estimating effective tax functions and relating them to the history of U.S. federal income taxes.

Second, our paper relates to the **literature on approximating the tax system by estimating effective tax functions**. Two main approaches prevail in this

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literature. The first one is based on the three-parameter non-linear tax function, popularized by Gouveia and Strauss (1994). However, their functional form does not allow taxes to be negative and therefore cannot capture, for example, the Earned Income Tax Credit (EITC). The second approach is based on the log-linear tax function of Feldstein (1969), Benabou (2000), and Heathcote, Storesletten, and Violante (2017). This is a parsimonious two-parameter function that is easy to estimate, allows taxes to be negative, and thus captures, for instance, the EITC.

We adopt the second approach because during our time period, the EITC becomes important and generates negative effective income tax rates for a non-trivial fraction of households starting in 1980. Moreover, in Appendix B we show that this function fits remarkably well for our data.

Several papers have estimated effective tax functions, for both the U.S. and other countries (García-Miralles, Guner, and Ramos (2019), Kurnaz and Yip (2020), and Wu (2021)). We contribute to this literature by measuring federal income taxes since the late 1960s, putting them in the historical context, and using an estimated structural model to show that this tax variation implies large changes in important economic outcomes. A complementary paper by Fleck, Heathcote, Storesletten, and Violante (2021) estimates effective tax functions by state in the United States at a point in time. Another related paper is Guner, Kaygusuz, and Ventura (2014). It estimates tax functions by marital status for a cross-section of U.S. households in the year 2000. Our analysis uncovers that various tax reforms differentially affect the taxation of couples and singles over time.

Third, our paper relates to the **literature using tax functions in structural models**. Examples include Gourinchas and Parker (2002) and French (2005), which estimate structural models over the life cycle, and Blundell, Pistaferri, and Saporta-Eksten (2016), which focuses on the effect of family labor supply on consumption and wage inequality; Heathcote, Storesletten, and Violante (2017), which evaluates the optimal degree of progressivity in the U.S. using a general equilibrium model; Heathcote, Storesletten, and Violante (2020), which examines the optimal response of tax progressivity to rising income inequality in the U.S.; and Wu (2021), which analyzes the reasons behind the decline in progressivity that has occurred in the U.S. since the late 1970s.

Most of these papers assume that taxation did not vary over time. An important exception is Blundell, Costa-Dias, Goll, and Meghir (2021), which studies multiple

cohorts entering the labor market and facing a time-varying welfare and tax system. These changes over time generate exogenous variation in economic incentives for people of various cohorts and ages. Other exceptions are Kaymak and Poschke (2016), Borella, De Nardi, and Yang (2023), and Yu (2022). Our work provides time-varying effective tax functions, including across groups, which can be used to better understand these incentives.

In addition to measuring and parsimoniously parameterizing effective taxation over time and across groups, we also relate and interpret our estimated tax functions in the context of the observed changes in the tax code and evaluate their implications in the context of a structural model.

3   The Effective Tax Function

Following Feldstein (1969), Benabou (2000), and Heathcote, Storesletten, and Violante (2017), we model taxes $T(Y)$ as a function of total income Y,

$$T(Y) = Y - (1 - \lambda)Y^{1-\tau}. \tag{1}$$

We can derive the average and marginal tax rate as

$$\frac{T(Y)}{Y} = 1 - (1 - \lambda)Y^{-\tau}, \tag{2}$$

$$T'(Y) = \frac{\partial T(Y)}{\partial Y} = 1 - (1 - \lambda)(1 - \tau)Y^{-\tau}; \tag{3}$$

thus, λ is the average tax rate when $Y = 1$. The parameter τ is an index of progressivity, and we can see it in two ways. First, taking logs of Equation (1) and rearranging

$$\log(Y - T(Y)) = \log(1 - \lambda) + (1 - \tau)\log(Y), \tag{4}$$

we obtain that $1-\tau$ is the elasticity of post-tax income with respect to pre-tax income; that is,

$$\frac{\partial \log(Y - T(Y))}{\partial \log(Y)} = 1 - \tau.$$

Second, a tax system is considered progressive if the marginal tax rate is larger than the average tax rate. This implies

$$1 - T'(Y) < 1 - \frac{T(Y)}{Y},$$
$$\frac{1 - T'(Y)}{1 - \frac{T(Y)}{Y}} < 1.$$

Using Equation (1) we have
$$\frac{1 - T'(Y)}{1 - \frac{T(Y)}{Y}} = 1 - \tau.$$

Thus, when $\tau > 0$, $1 - \tau < 1$, and thus the system is progressive. When $\tau < 0$, $1 - \tau > 1$, and thus the system is regressive. When $\tau = 0$, marginal and average tax rates coincide and are flat at λ.

We estimate the parameters λ and τ for each PSID wave until 2016 via OLS. We regress the logarithm of post-tax household income on a constant and on the logarithm of pre-tax household income, as in Equation (4).

We convert all nominal variables in real terms by using the Consumer Price Index for All Urban Consumers (CPI-U), and we use 2016 as our base year. We then estimate effective tax functions by year and demographic group, using the PSID between 1969 and 2016. We perform minimal sample selection to remove outliers and observations with missing data on key variables of interest.[2] Appendix A describes our data and sample selection in detail. Appendix B shows that the log-linear functional form fits the data remarkably well.

To facilitate the interpretation of the estimated tax parameters, for each year, we normalize pre- and post-tax income by median pre-tax income in that year for each demographic group (that is, the representative decision unit, singles, married couples, and cohabiters). As a result, the parameter λ is the average tax rate for the decision unit with median income in each of these groups, and the marginal tax rate also refers to the decision unit with median income in each group.

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[2]As discussed in Appendix A, we trim our sample to exclude the top 1% percent and bottom 0.5% of pre-tax income by year to reduce heteroskedasticity.

4   Effective Taxation over Time for a "Representative Decision Unit"

Although the tax code is based on family structure, many economic investigations abstract from it. Thus, it is useful to start looking at taxes for a "representative decision unit" to outline the broad patterns in the data. We do so by constructing a representative decision unit using household-level data and summing the incomes of the one or two adults present within the household and computing the corresponding taxes. Because this scheme counts households rather than people in a household, we also present an alternative measure in which we define a "representative person," a notion that counts households containing two adults twice. The results are broadly similar, and we report them in Appendix C.

4.1   Effective Taxes

This section discusses the main features of effective taxation for our representative decision unit over time. Here, we normalize pre- and post-tax income by the median pre-tax income of the representative decision unit in each year.

We start by reporting the average tax rate (λ) for the median representative decision unit over time. In this computation, pre-tax income is defined as the sum of all income received by the head of the household and the spouse (if present) in a given tax year, and thus includes both government and private transfers (see Appendix A.2 for more details.) The PSID provides information about federal income taxes up to 1991. After that, we compute them by using TAXSIM (see Appendix A.3 for details). We calculate post-tax income as pre-tax income less taxes.

Then, we display the progressivity parameter τ. As we discuss in Section 3, $1-\tau$ is the elasticity of post-tax income with respect to pre-tax income. Hence, as τ increases, the elasticity decreases, and the tax system is more progressive. We complement τ by reporting the marginal tax rate for the representative decision unit with median income in a given year. As Equation (3) shows, the marginal tax rate depends on λ, τ, and the level of income. Thus, changes in any of these arguments cause changes in the marginal tax rate.

Figure 1 shows substantial variation in the average tax rate for the median representative decision unit and progressivity. In 1969, the median representative decision

Figure 1: Representative decision unit: average tax rate at the median income, tax progressivity, marginal tax rate at the median income, pre-tax median income, and inflation. Vertical dashed lines correspond to the tax reforms in the following years: 1969, 1975, 1976, 1977, 1978, 1981, 1984, 1986, 1990, 1993, 2001, 2003, 2010, and 2012. We construct the representative decision unit using household-level data and do not distinguish between household types.
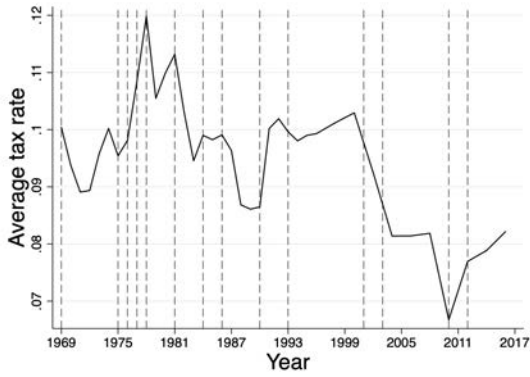
(a) Average tax rate at median income (λ)
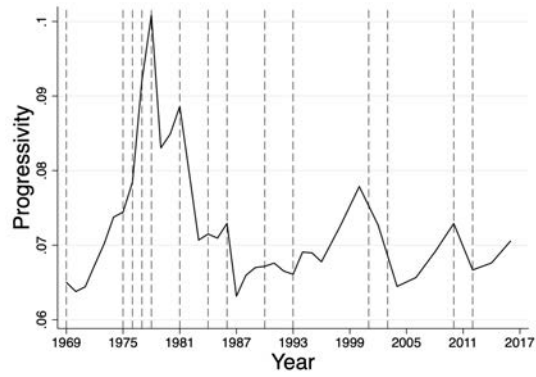
(b) Progressivity parameter (τ)
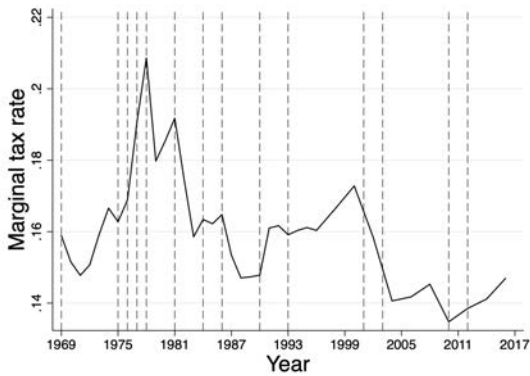
(c) Marginal tax rate at median income

(d) Median Household Income (2016 $)

(e) Inflation Rate (%)

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unit earns about \$52,000 (in 2016 dollars) and pays an average tax rate of 10%. Panel (a) shows that the average tax rate goes from a maximum of 12.0% in 1978 to a minimum of 6.7% in 2010. Panel (b) displays the evolution of τ over time, and Panel (c) shows the evolution of the marginal tax rate. We also observe significant variation over time in both τ and the marginal tax rate. The parameter τ varies between 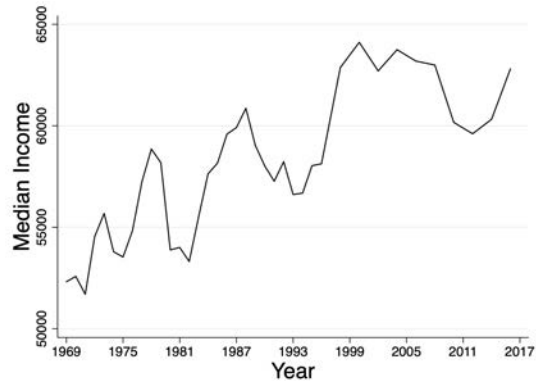a minimum of 0.06 in 1987 to a maximum of 0.10 in 1978, while the marginal tax rate for the median representative decision unit varies between a minimum of 13.5% in 2010 and a maximum of 20.9% in 1978.

The dashed lines in Figure 1 mark notable tax reforms. They occur in 1969, 1975, 1976, 1977, 1978, 1981, 1984, 1986, 1990, 1993, 2001, 2003, 2010, and 2012. In Section 7, we discuss several of these reforms in detail.

We now discuss the changes in the average tax rate and progressivity by decades.

Seventies. The average tax rate for the median income and the progressivity parameter trend up during the seventies. The increase in the average tax rate is partly caused by bracket creep. That is, tax brackets are not indexed to inflation, which is rising fast. For instance, Panel (e) of Figure 1 shows that inflation (measured using CPI-U) rises from about 5% in 1970 to over 13% in 1980. During this high inflation period, several tax reforms generate temporary changes in the average tax rate and progressivity. The average tax rate drops between 1969 and 1970 and between 1970 and 1971 as a result of the reduction in statutory tax rates and increase in exemptions and deductions implemented by Tax Reform Act of 1969 of president Nixon's administration. In particular, the Tax Reform Act of 1969 increased the nominal value of personal exemptions for 1970, 1971, 1972, and 1973, raised the standard deduction, and introduced the low-income allowance. These provisions result in an increase in τ between 1971 and 1974. The marginal tax rate for the median representative decision unit increases over the same period. As Equation (3) shows, this increase can be driven by increases in λ, τ, and median income, all of which occur between 1971 and 1974. Following an increase between 1971 and 1974, the average tax rate drops between 1974 and 1975 because of the Ford administration's Tax Reduction Act of 1975, which provided a rebate on 1974 taxes, introduced the EITC, and, for 1975 only, increased the low-income allowance and the standard deduction and gave a nonrefundable general tax credit. In a spirit similar to that of the Tax Reduction Act of 1975, the Tax Reform Act of 1976 increased the low-income allowance and the

maximum standard deduction. These provisions result in an increase in τ and the marginal tax rate between 1976 and 1977. Both measures of progressivity increase again between 1977 and 1978 - the year in which both τ and the marginal tax rate peak - owing to the Carter administration's Tax Reduction and Simplification Act of 1977. This reform introduced the zero percent tax bracket on top of the pre-existing standard deduction. Finally, the average tax rate drops between 1978 and 1979, as a result of the increase in exemptions and deductions implied by the Carter administration's Revenue Act of 1978. The Revenue Act of 1978 also raised the upper bound of the zero percent tax bracket, increased the personal exemption, and made the EITC permanent. Despite these provisions, both measures of progressivity decline between 1978 and 1979.

Eighties. The eighties are characterized by a general downward trend in average tax rates at median income, which decrease from 11.0% in 1980 to 8.5% in 1989, much lower inflation, a sharp decrease in progressivity, and the Reagan tax reforms. In particular, the average tax rate decreases after 1981, as a result of the reductions in statutory tax rates established by the Reagan administration's Economic Recovery Tax Act (ERTA) of 1981. The ERTA established reductions in tax rates for 1981, 1982, and 1983 (including a reduction in the top tax rate from 70 to 50 percent), causing a decrease in τ and the marginal tax rate between 1981 and 1983. The ERTA also established that from 1985 onward, income tax brackets would be indexed to inflation.[3] The average tax rate increases slightly from 9.5% in 1983 to 10.0% in 1984, which could be due to an increase in median income and the nature of progressive taxation. During the same period, both τ and the marginal tax rate increase slightly, in keeping with President Reagan's administration's Deficit Reduction Act of 1984, which increased the EITC. After a period of relative stability between 1984 and 1986 - consistent with the absence of major tax reforms in those years other than the implementation of indexation - the average tax rate significantly decreases after 1986 because of the Reagan administration's Tax Reform Act of 1986, which raised the bottom tax rate, lowered the top tax rate, and increased the EITC. The provisions of

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[3]After 1985, tax brackets, personal exemptions, standard deductions, and many other tax elements are indexed to inflation. In particular, until 2018, indexation is based on the Consumer Price Index for All Urban Consumers (CPI-U.) We also use the CPI-U to convert nominal variables into real ones for estimation. After 2018, indexation is based on the chained CPI-U (C-CPI-U.)

the Tax Reform Act of 1986 cause a considerable drop in progressivity between 1986 and 1987.

Nineties. The nineties are characterized by an increase in the average tax rate for the median-income representative decision unit at the beginning of the decade, followed by a period of relative stability and a generally increasing progressivity. First, the average tax rate increases markedly between 1990 and 1992 during President George H. W. Bush's administration, whose Omnibus Budget Reconciliation Act of 1990 raised the top tax rate and expanded the EITC. As a consequence, both τ and the marginal tax rate increase between 1990 and 1991. Then, the Clinton administration's Omnibus Budget Reconciliation Act of 1993 raised the top tax rate, but the higher rate does not translate into an increase in either average tax rate or progressivity. In fact, effective progressivity declines between 1992 and 1993. While the average tax rate remains relatively stable until 1999, both measures of progressivity increase markedly between 1996 and 2000. Another tax act during this period is the Taxpayer Relief Act of 1997, which introduce the child tax credit and education credits, which phase out at higher income levels.

Two-Thousands. The first decade of the twenty-first century is characterized by a marked decrease in tax rates, because of primarily to the "Bush tax cuts," and by a V-shaped evolution of progressivity. In particular, the average tax rate for the median representative decision unit drops between 2000 and 2004, due to the tax cuts included in the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) of 2001 and the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003. These tax cuts cause a decrease in both τ and the marginal tax rate during the same period. Between 2004 and 2008 the average tax rate is stable, while both measures of progressivity rise. The rebound in progressivity is due to several reforms passed during the George W. Bush's administration. The JGTRRA of 2003 expanded the child tax credit and raised the standard deduction. The Working Families Tax Relief Act of 2004 extended some of the provisions of the JGTRRA, including the increase in the standard deduction and the child tax credit, until 2008 and 2009, respectively. While progressivity continues to increase until 2010, the average tax rate drops between 2008 and 2010. Given that there were no tax changes between 2008 and 2010, the

drop in the average tax rate during this period is likely a consequence of the drop in median income caused by the Great Recession.

Twenty-Tens. The period between 2010 and 2016 sees a stable upward trend in the average tax rate at median income and an overall increase in progressivity. On the one hand, the steady increase in the average tax rate over this period mirrors a rebound in median income over the same years, which may explain why tax rates increase despite the tax reforms of 2010 and 2012, which extended the Bush tax cuts of 2001 and 2003. On the other hand, while the marginal tax rate for the median representative decision unit increases steadily between 2010 and 2016, τ decreases between 2010 and 2012 and increases between 2012 and 2016. Despite the Obama administration's Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (which increased the child tax credit and the EITC), τ decreases between 2010 and 2012. The subsequent increase in progressivity between 2012 and 2013 is consistent with President Obama's administration's American Taxpayer Relief Act of 2012, which raised the top tax rate.

5 Effective Taxation over Time by Household Type

Focusing on the representative decision unit is useful for getting a comprehensive view of the dynamics of income taxation. Still, it ignores a fundamental feature of the U.S. federal income tax system: the distinction by marital status. As noted in Alm, Whittington, and Fletcher (2002), differential taxation by marital status has not always been a feature of the federal income tax system. When the system was established in 1913, each person was taxed according to their own income. Then, the Revenue Act of 1948 introduced income splitting for married couples, which allowed couples to sum their incomes and divide the sum in half to compute their federal tax liability. Finally, the Tax Reform Act of 1969 established that from 1971 onward, single people would be taxed under a different tax schedule than that for married people (between 1949 and 1970, the tax schedule for singles was the same as the one for married people filing separately.)

To study how effective income taxes vary by marital status, we divide our sample into three types of households: married, single, and cohabiting. We define a married household as one composed of two legally married adults. A single household com-

prises an unmarried adult, while a cohabiting household comprises two unmarried adults living together. In this section, we present the results for married couples and singles. In Appendix D, we discuss the results for cohabiters

We estimate year- and marital-status-specific tax functions. Our definition of pre-tax income is similar to the one we used for the representative decision unit: we define it as the sum of all income each household member receives in a given tax year, including private and government transfers (see Appendix A.2 for more details). We compute post-tax income by subtracting federal income taxes from pre-tax income. The measure of federal income taxes paid varies by marital status. For married couples filing jointly, income taxes are taxes paid at the household level.[4] For singles, taxes are given by the sum of the individual income taxes paid by each household member. As discussed in Section 3, we normalize pre- and post-tax income by median pre-tax income for each demographic group and year to ease interpretation.

We compare typical singles with typical married couples. We do so by analyzing taxes for the household with median income in each year and group. Figure 2 displays the average tax rate, progressivity, the marginal tax rate, and pre-tax median income over time and by marital status. Its Panel (d) shows that the pre-tax median household income increases over time for both couples and singles and that median income is higher (by about a factor of three) for married couples than for singles.

Panel (a) of Figure 2 shows the evolution of the average tax rate, which is always higher for the median married couple than for the median single. For example, in 1969, the median single person has an income of about \$24,000 and an average tax rate of about 7.3 percent, while the median married couple has an income of about \$65,000 and an average tax rate of 10.8 percent. Over the period that we consider, the average tax rates for each group are at their lowest values in 2010, reaching 5.8 and 7.0 percent for singles and married couples, respectively. Their maximum values vary by demographic group and are 8.9 percent in 1998 for singles and 13.4 percent in 1978 for married couples.

Panel (b) of Figure 2 displays our progressivity parameter τ over time. It is substantially higher for married couples. For singles, τ varies from a minimum of 0.06 in 1971 to a maximum of 0.09 in 1978. For married couples, τ varies between a

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[4]In principle, married couples could file as married but filing separately. However, doing so entails the loss of many deductions and exemptions. As a result, the vast majority of couples (about 97%) chooses to file jointly.

Figure 2: Estimation by household type: average tax rate, progressivity, marginal tax rate, and pre-tax median income. The average and marginal tax rates refer to the median household income for each household type and in each year. Vertical dashed lines: 1969, 1981, 1986, 1990, 1993, 2001, 2003, 2010, 2012 tax reforms.
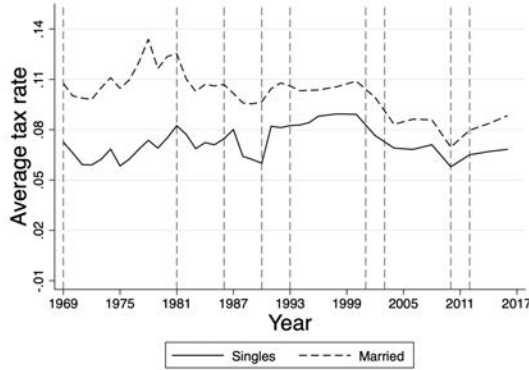
(a) Average Tax Rate (λ)
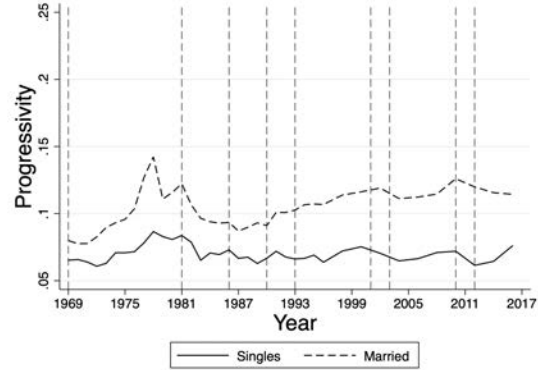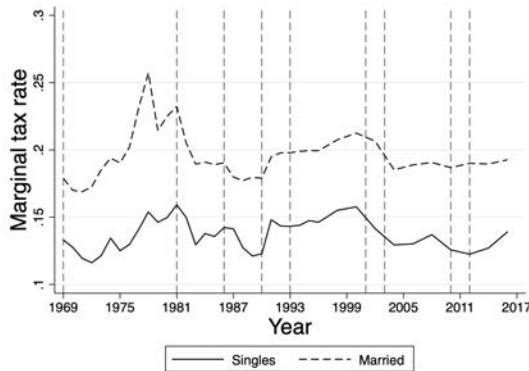
(b) Progressivity (τ)

(c) Marginal Tax Rate
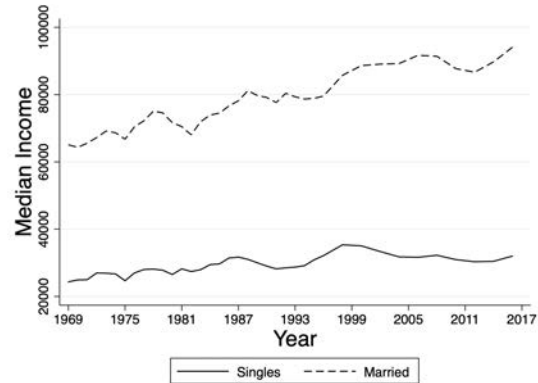
(d) Median Household Income (2016 $)

low of 0.08 in 1970 and a high of 0.14 in 1978. Progressivity substantially flattens for singles after 1983, while it increases for married couples starting in 1987.

Panel (c) of Figure 2 shows the evolution of the marginal tax rate at the median income of each group every year. Like τ, the marginal tax rate is substantially higher for married couples. The marginal tax rate for median singles varies between a low of 11.6 percent in 1972 and a high of 15.9 percent in 1981. The one for median couples varies between a low of 16.9 in 1971 percent and a high of 25.7 percent in 1978.

We now characterize the changes in the average tax rate and in progressivity for these groups by decade.

Seventies. The seventies are characterized by a general upward trend in the average tax rate and progressivity for both married and single households. The average tax rate and progressivity evolve similarly for both groups; this finding is consistent with the absence of marital-status-specific reforms during the decade. During the seventies, median income is remarkably flat for singles, while it increases for couples. However, differences in median income only partially explain the differences in the average tax rate. In fact, the average tax rate at median income decreases for both groups between 1974 and 1975 as a result of President Ford's administration's Tax Reduction Act of 1975, with the drop being larger for singles (1 percentage point) than for couples (0.6 percentage points), and with the drop in the associated median income being the same (about $2000 in 2016 units) for both groups. In addition, the average tax rate decreases between 1978 and 1979 because of President Carter's administration's Revenue Act of 1978, with the drop in taxes being much larger for couples (1.7 percentage points) than for singles (0.4 percentage points) and with the associated decrease in median income being about $160 (in 2016 dollars) sharper for couples than for singles. Thus, the Tax Reduction Act of 1975 lowered taxes more for the median single household than for the median married household, while the opposite is true for the Revenue Act of 1978. In turn, progressivity, as measured by the parameter τ, increases between 1972 and 1978 for both groups, and its increase for couples is double that for singles. Thus, the reforms we just mentioned, President Nixon's administration's Tax Reform Act of 1969, and President Ford's administration's Tax Reform Act of 1976 result in increased progressivity, especially for median-income couples. As is consistent with the increases in both λ and τ, the marginal tax rate at the median income of each group increases between 1972 and 1978, with the increase being twice as large for couples (8 percentage points) than for singles (4 percentage points.)

Eighties. In the first half of the eighties, all measures exhibit similar dynamics. In contrast, in the second half of the decade, they diverge by demographic group. The average tax rate declines for couples and singles during the first half of the decade. Specifically, after the Reagan administration's Economic Recovery Tax Act (ERTA)

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of 1981, it decreases between 1981 and 1983, increases slightly between 1983 and 1984, and is fairly stable between 1984 and 1985. Progressivity, as measured by τ and the marginal tax rate at median income, drops sharply for all groups until 1983. After that, it declines slightly for couples, while it increases for singles until 1986. The drop in progressivity between 1981 and 1983 is related to the ERTA of 1981, while the increase between 1983 and 1986 could be due to President Reagan's administration's Deficit Reduction Act of 1984, which increased the EITC and is thus more relevant for singles than couples because singles are more likely to have lower incomes. The average tax rate for couples drops between 1986 and 1988 and is fairly stable between 1988 and 1990, while it rises for singles between 1986 and 1987 and then significantly declines until 1990. The Reagan administration's Tax Reform Act of 1986 lowers the top tax rate and increases the bottom tax rate. This feature of the act may explain why couples, which have higher median income, face a decrease in the average tax rate, while singles, who have lower median income, face an increase in the average tax rate. The parameter τ drops for both singles and couples between 1986 and 1987, in keeping with with the Tax Reform Act of 1986, but after that, it substantially stabilizes for singles, while it starts increasing for couples, marking the start of a rise in τ that lasts until 2000. The marginal tax rate drops for couples and singles between 1986 and 1990.

Nineties. The nineties are characterized by a marked increase in progressivity for median couples, flat progressivity for median singles, and an increase in average tax rates for median couples and singles. The average tax rate increases for all groups between 1990 and 1992, as a consequence of President George H. W. Bush's administration's Omnibus Budget Reconciliation Act of 1990. The average tax rate continues to increase for singles until 2000, while it declines slightly for couples between 1992 and 1994 and then increases until 2000. The Clinton administration's Omnibus Budget Reconciliation Act of 1993 raised top tax rates for all demographic groups, but it translated into an increase in effective taxes in 1993 only for median singles, while median married couples faced an increased tax rate starting only in 1995. Progressivity, measured by τ, rises markedly for median couples over the whole decade. The increase in progressivity is consistent with both the Omnibus Budget Reconciliation Act of 1990 - which raised the top tax rate and expanded the EITC - and the Omnibus Budget Reconciliation Act of 1993 - which raised the top tax rate. However,

τ declines for singles between 1991 and 1993 and increases only after 1996. This means that the Omnibus Budget Reconciliation Act of 1993 increased progressivity for median couples, but it did not do so for median singles until 1996. The marginal tax rate increases steadily for median couples and singles between 1990 and 1999, reflecting the increases in λ, τ, and real income.

Two-Thousands. The first decade of the twenty-first century is characterized by a decrease in average tax rates and by heterogeneous dynamics in progressivity by demographic group. The average tax rate decreases for all demographic groups between 2000 and 2004, owing to the Bush administration's tax cuts of 2001 and 2003. It then continues to decline for median singles but increases slightly for median couples until 2006. It then decreases for all groups between 2008 and 2010, due to the decline in median income during the Great Recession. Progressivity, measured by both τ and the marginal tax rate, declines for all groups between 2001 and 2003, as is consistent with the Bush tax cuts of 2001 and 2003. The parameter τ then increases for median couples and singles until 2010. The marginal tax rate increases between 2004 and 2008 but declines between 2008 and 2010. The increase in progressivity between 2004 and 2010 is due to several reforms during the George W. Bush's administration, including the JGTRRA of 2003 and the Working Families Tax Relief Act of 2004.

Twenty-Tens. The period between 2010 and 2016 is characterized by an increase in the average tax rate for all demographic groups and by divergent paths for progressivity. The increase in tax rates is accompanied by the rebound in real median income after the Great Recession, which may explain why the average tax rate increases, despite the tax reforms of 2010 and 2012, which extended the Bush tax cuts of 2003. The progressivity parameter τ declines steadily for median married couples between 2010 and 2016, while it shows a V-shaped path for median singles, with τ decreasing between 2010 and 2012 and increasing between 2012 and 2016, as τ does. The marginal tax rate is substantially flat for median-income married couples, declines for median-income singles between 2010 and 2012, and then increases between 2012 and 2016. Progressivity decreases between 2010 and 2012, despite the Obama administration's Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, which increased the child tax credit and EITC. However, progressivity increases for singles between 2012 and 2016, which is consistent with

President Obama's administration's American Taxpayer Relief Act of 2012, which raised the top tax rate.

6 A Structural Model of Couples and Singles to Evaluate the Effects of Various Tax Regimes

Looking at effective tax rates over time is interesting and important, but gives us a limited sense of whether these tax changes are large or small. One way to determine whether they are sizeable is to check to what extent they affect household behavior. To do so, we adopt an estimated dynamic quantitative model of couples and singles over the life cycle and use it to evaluate the implications of various tax regimes on outcomes such as participation, hours worked by the workers, labor income, and savings.

We adopt the model of Borella, De Nardi, and Yang (2023), which we re-estimate for the cohort born in 1941-1945 using the PSID and the Health and Retirement Study (HRS) dataset. Our model fits the historical data over the life cycle of this cohort very well and implies sensible labor supply elasticities by age, gender, and marital status.

Importantly, in our benchmark estimation, each year, households face the effective tax functions that we estimate from the PSID for that year (See Figure 2 for a summary). We thus assume that households have perfect foresight about future tax regimes.

In Section 7, we discuss some tax regimes in more detail, both from a historical standpoint and by describing the changes in our estimated tax functions. We then compare the outcomes from our estimated model when we keep each tax regime fixed for the duration of the households' life cycle. Besides quantifying outcomes and thus giving us a better sense of how substantial a tax change was, these comparisons are important because in the structural literature, it is common to ignore tax and policy variation over time and to pick one particular year to estimate one's model. We show that because tax variation over time is large, the choice of assuming a constant tax regime over one's entire estimation horizon is not an innocuous one.

In our model, a period is one year long. Single people meet partners and married people might get divorced. These marital status changes occur exogenously. Every

working-age person experiences wage shocks, and every retiree faces health, medical expenses, and lifespan risk. People in couples face the risk of both partners. Households can self-insure by saving and by choosing whether to work and how much to work (for both partners, in the case of couples) and when to retire. To be consistent with the data, we allow for human capital (in the form of learning by doing) to affect wages. We explicitly model Social Security, including its spousal and survival benefits, the differential tax treatment of married and single people, the progressivity of the tax system (including the EITC) as estimated by our tax functions, and old-age means-tested transfer programs, such as Medicaid and Supplemental Security Income (SSI), which we parsimoniously represent as an old-age consumption floor. We also model the changes in the tax and Social Security system over time. We report the model's details in Appendix E.

Figure 3 reports our model-implied moments, data, and 95% confidence intervals (from the PSID) for our 1945 birth cohort. More specifically, it shows participation and hours worked by the workers for married and single men and women, and net worth for couples and single men and women. The model fits the targeted data well, which is remarkable given that it is tightly parameterized: we have 448 targets and estimate only 19 parameters.

| | Participation | | | | Hours among workers | | | |
| | Married | | Single | | Married | | Single | |
	W	M	W	M	W	M	W	M
30	1.0	0.0	0.6	0.2	0.3	0.3	0.6	0.4
40	0.7	0.1	0.4	0.2	0.4	0.5	0.8	0.5
50	0.7	0.2	0.4	0.8	0.4	0.5	0.7	0.4
60	1.2	0.7	2.0	1.7	0.3	0.3	0.5	0.6

Table 1: Labor supply elasticity, temporary wage change, 1945 cohort. W: women, M: men.

Table 1 reports our model's implied elasticities of participation and hours among workers with respect to an anticipated change to their own wage.[5] It shows that the elasticity of participation of women is larger than that of men, that married men have

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[5]To compute these elasticities, we temporarily increase the wage for only one age and one group at a time (married men, married women, single men, or single women) by 5%. While we do not compensate this wage change, a temporary change in wage of this size is very small compared to family's lifetime earnings and consumption.

Figure 3: Model-implied participation (top panel), hours (middle panel), and wealth (bottom panel) and average and 95% confidence intervals from the PSID. Time-varying taxation as in historical data
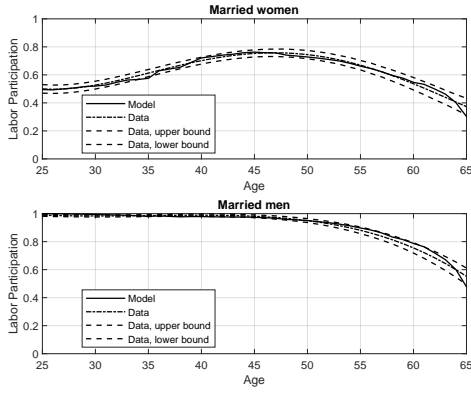
(a) Participation couples
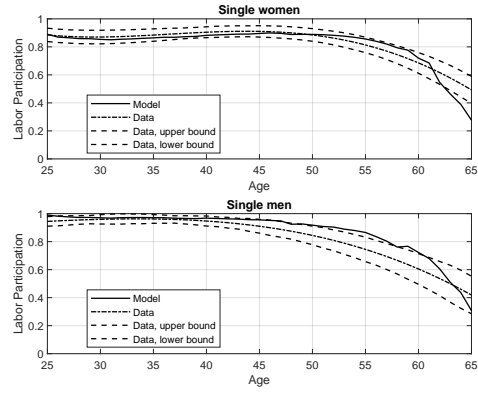
(b) Participation singles

(c) Hours couples

(d) Hours singles

(e) Wealth couples

(f) Wealth singles

the lowest elasticity of participation, that the elasticity of hours is different from that of participation, and that the elasticity of participation for all groups is largest around retirement age. Our elasticities are consistent with those in Blundell and Macurdy (1999), French (2000), Liebman, Luttmer, and Seif (2009), and Atta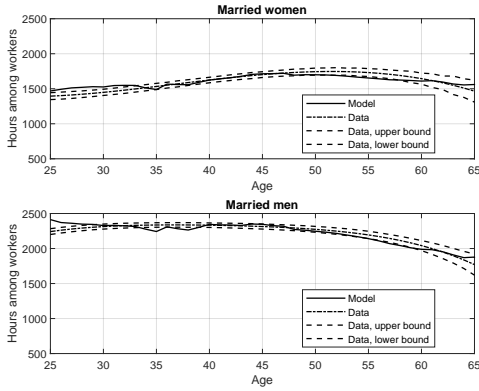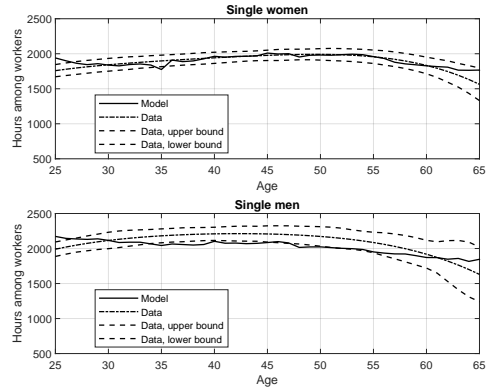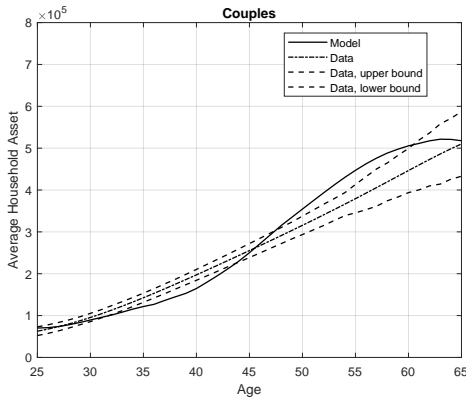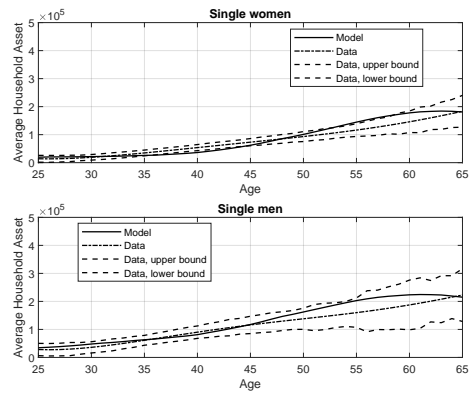nasio, Levell, Low, and Sánchez-Marcos (2018). This heterogeneity in elasticities underscores that the labor supply effects of a reform crucially depend on which groups are most affected by it.

7 Selected Tax Reforms and Model Outcomes

We now turn to discussing nine tax reforms, that represented major tax law changes, received extensive media coverage, and were sponsored by a president. The Online Historical Appendix compiles a history of all income tax reforms from 1962 to 2018 and presents more detail for each reform.

For each reform, we first describe the spirit of the law, its primary goals, and the context in which it takes place. Then, we show the effective tax functions in the year preceding the reform, the ones after the reform took place, and those for the phase-in period, when one is present.[6] To understand the effects of these tax regimes on household behavior, we then compare our model's implications under the pre-reform tax regime with those under the post-reform regime. For clarity, in both cases, we hold each of these regimes constant over the households' life cycle.

Finally, we turn to contrasting our estimated model's implications for our benchmark in which taxes change every year (and households perfectly anticipate it) with our model's implications under a scenario in which taxes remain constant at their 1969 levels. While this experiment is more complex to interpret (because taxes change every year and we have a dynamic model in which households react to both current and future changes), it is informative about the implications of ignoring tax variation over time, a choice often made by the literature calibrating or estimating structural models.

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[6]We report the results for the representative decision unit in Appendix F.

7.1 The Tax Reform Act of 1969

On April 21, 1969, President Nixon pushed for tax reform in a "special message to Congress," saying that "we must reform our tax structure to make it more equitable and efficient; we must redirect our tax policy to make it more conducive to stable economic growth and responsive to urgent social needs." The 1969 Tax Reform Act was meant to achieve these goals. However, Nixon did not appear to like the final version of the bill passed by Congress. Nixon's signing statement on December 30, 1969, was ambivalent, saying that "Congress has passed an unbalanced bill that is both good and bad. The tax reforms, on the whole, are good; the effect on the budget and the cost of living is bad" (Nixon, 1969).

This reform was phased in gradually over the four years between 1969 and 1973 and contained numerous income tax changes. First, it introduced a new rate schedule for singles that began in 1971. Until 1970, singles were taxed using the same schedule as married couples filing separately. Second, it established individual minimum taxes, which were a precursor to the modern Alternative Minimum Tax. Finally, it increased the personal exemption and the standard deduction.

The top four graphs of Figure 4 highlight the main features of this tax reform and its phase-in period. First, effective average and marginal tax rates vary over time, and more so for singles than couples. For instance, the average tax rate for the median-income single (who earns $24,000, expressed in 2016 dollars, in 1969) decreases from 7.2% in 1969 to 5.6% in 1973. Similarly, the marginal tax rate for singles drops from 13.2% to 11.5%. The average tax rate for median-income couples (which earn $65,000, expressed in 2016 dollars in 1969) decreases only slightly, from 10.8% to 10.0% in 1973. In contrast, their marginal tax rate increases from 17.9% to 18.5% over the same time period. Second, the increases in personal exemptions and the standard deduction imply a higher effective income level below which the household pays no taxes (which generates the flat portion at zero in our graphs) that gets increasingly higher during the whole phase-in period. Third, the direction of these changes is not monotone over time. Taxes decrease every year until 1972 but go back up again in 1973, for both singles and couples. Fourth, the comparison of the 1973 and 1969 effective tax functions reveals that while average and marginal taxes go down at all income levels for singles, the patterns are different for couples, and the new tax regime implies more redistribution. Specifically, the average tax rate in

1973 is higher for couples with incomes above \$155,000, and the marginal tax rate is higher for couples with incomes above \$52,000.

Next, we compare our model's implications for the 1969 tax regime and the 1973 one. The bottom four panels of Figure 4 report four key model outcomes. The first three are participation, hours worked for the workers, and average labor income for four groups of people: single men and women, and married men and women. The fourth displays the average wealth for couples and single men and women. These graphs show that singles, who now face lower average and marginal tax rates, work more. In contrast, married people, many of whom now face higher marginal tax rates, work and earn less. Within a couple, female labor supply is more elastic, especially at younger ages (owing to the effects of human capital accumulation). With respect to magnitudes, because the changes in tax rates are relatively small, so are changes in behavior. The participation rate of single people increases by 0.1 to 0.7 percentage points, depending on age and gender. The decrease in participation for married people ranges from 0.9 percentage points for young women to 0.2 for older men. The changes in hours and income go in the same direction and are also small. Moreover, singles save more (up to 3.5% more) and couples save less (up to 1.5% less).

Figure 4: Comparing 1969 and 1973. Top two panels: tax rates. Bottom two panels: outcomes from structural model
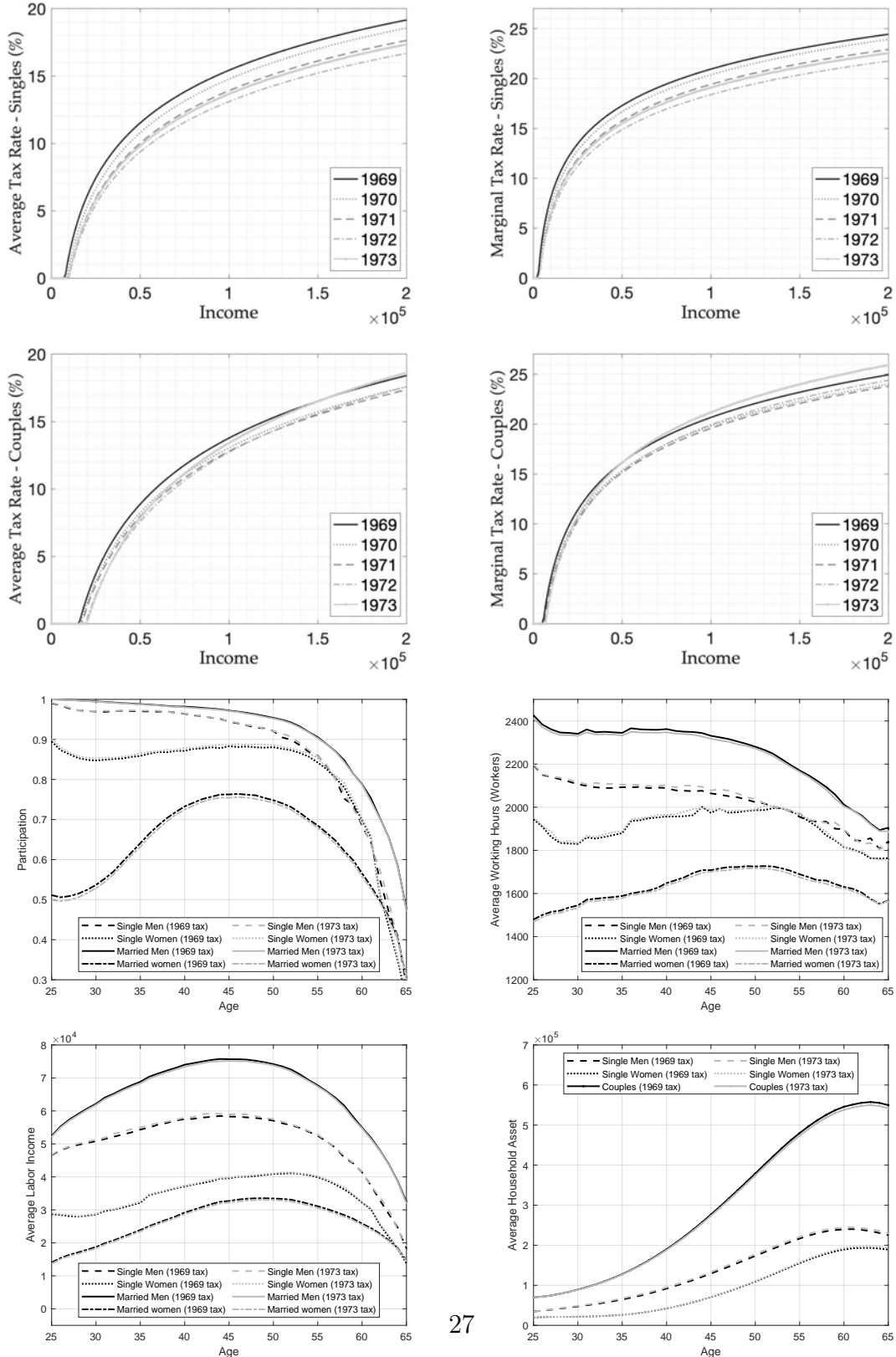
7.2 The Inflation Period and 1978

The period between 1973 and 1978 was characterized by high inflation. The lack of tax bracket indexation to inflation, combined with the limited scope of the tax reforms during that period, resulted in much higher average and marginal tax rates than before and after. While inflation kept rising after 1978, effective taxation peaked that year, which is why we choose it.

The top four graphs of Figure 5 compare the 1973 and 1978 effective tax schedules. The first noticeable feature is that the changes in tax rates from 1973 to 1978 are much larger than those that took place during the previous four-year period, during the Nixon reform. The second feature is that average and marginal tax rates increase substantially, except for those for lower-income couples. For instance, the average tax rate for the median-income single (who earns $27,000 in 1973) increases from 6.3% to 7.0%. Similarly, the median-income single's marginal tax rate increases from 12.2% to 15.1%. The average tax rate for median-income couples (which earn $69,000 in 1973) increases from 10.5% to 12.5%, while their marginal tax rate increases from 18.5% to 24.9%.

Next, we compare our model's implications for the 1973 tax regime with those for the 1978 one. The bottom four panels of Figure 5 show that these two tax regimes have very different consequences on household behavior. An important feature is that the model's implied participation of married women displays is much lower under the 1978 tax regime (9.4 percentage points at younger ages and 2.9 percentage points closer to retirement). In addition, hours worked by the workers are lower for all four demographic groups over most of their working period. For instance, over the first ten years of the working period, hours drop by 5.1%, 2.4%, 4.5%, and 1.7% for married women, married men, single women, and single men, respectively. These drops in participation and hours translate into large reductions in labor income, of the order of 20.2%, 3.1%, 6.2%, and 2.1%, respectively. These decreases in labor income in turn result in substantial decreases in savings.

Figure 5: Comparing 1973 and 1978. Top two panels: tax rates. Bottom two panels: outcomes from structural model
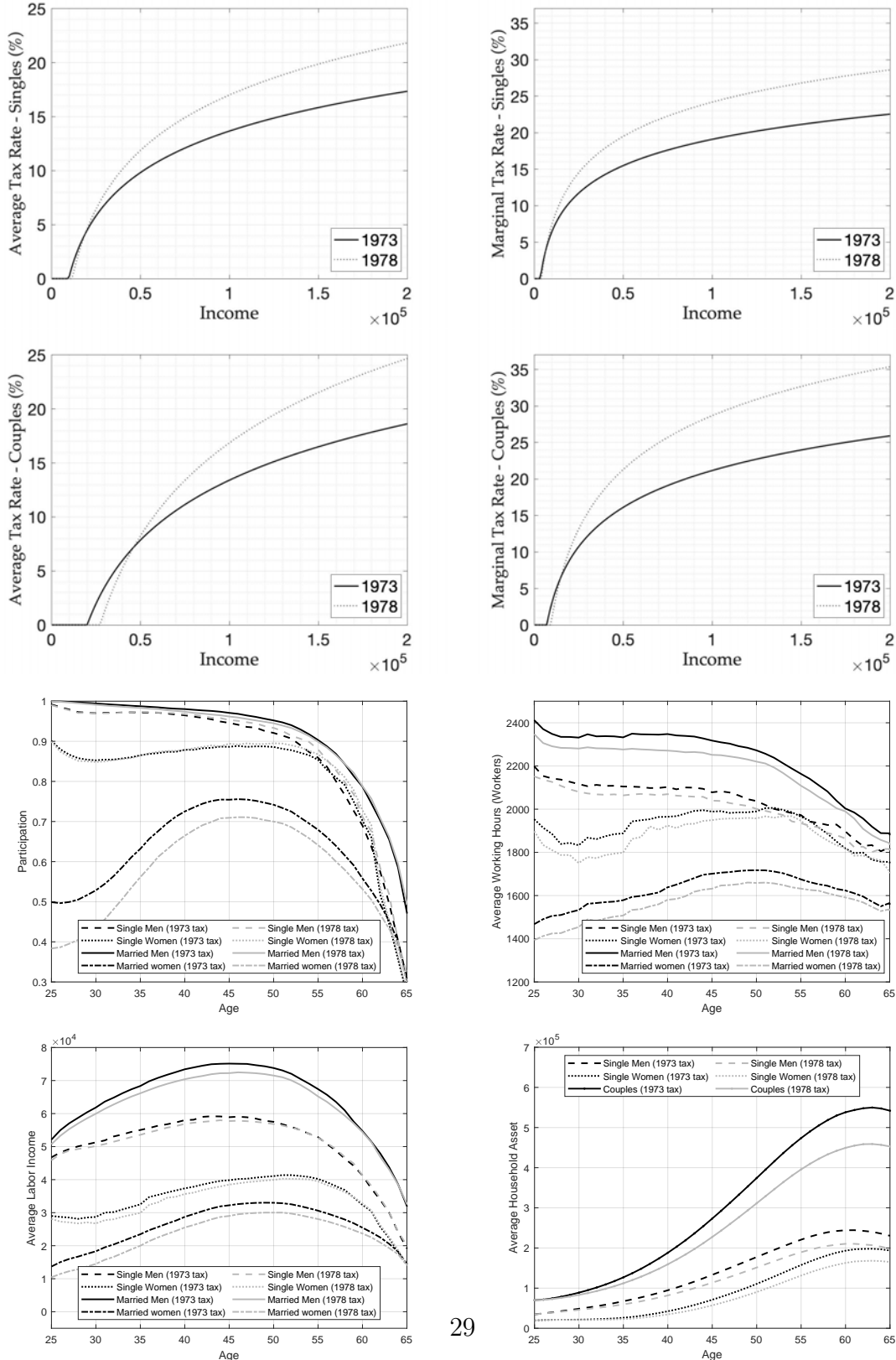
## 7.3 The Economic Recovery Tax Act of 1981

The impetus for the Economic Recovery Tax Act (ERTA) of 1981 was - as President Reagan argued during a televised address from the White House in February 1981 - the federal government deficit, high inflation rates, high interest rates, high unemployment, burdensome regulations, low productivity growth, and excessive taxation of individuals. To tackle these issues, Congress passed the ERTA in August of 1981.

This reform was phased in gradually between 1981 and 1984. It lowered income tax rates for all filing statuses and brackets. It also allowed a new deduction in computing adjusted gross income for two-earner married couples filing a joint return. The tax brackets, the personal exemption, and other tax elements were indexed to inflation starting in 1985.

The top four graphs of Figure 6 compare the 1980 and 1984 effective tax schedules and show that effective tax rates are lower in 1984, reflecting the goal of reducing "excessive taxation of individuals." For instance, the average tax rate for the median-income single (who earns \$27,000 in 1980) decreases from 7.6% to 6.7%. Similarly, the marginal tax rate for this category drops from 15.1% to 13.3%. The average tax rate for median-income couples (which earn \$72,000 in 1980) decreases from 12.4% to 10.5%, while their marginal tax rate drops from 22.5% to 18.9%.

We now turn to our model's implications for the 1980 tax regime and the 1984 one. The bottom four panels of Figure 6 show that these tax regimes have different implications for household behavior. As taxes drop, labor supply and savings increase. However, because the tax changes are a little smaller than those between 1973 and 1978, so are the household's responses. For instance, the participation of married women increases by 4.4 percentage points at younger ages and 1.0 percentage points closer to retirement. In addition, hours worked by the workers increase for all four demographic groups over most of their working period. For instance, over the first ten years of the working period, hours rise by 2.4%, 1.1%, 1.9%, and 0.7% for married women, married men, single women, and single men, respectively. These increases in participation and hours translate into higher labor income, of the order of 10.5%, 1.4%, 2.7%, and 0.8% for married women, married men, single women, and single men, respectively. These higher labor incomes in turn result in larger savings.

Figure 6: Comparing 1980 and 1984. Top two panels: tax rates. Bottom two panels: outcomes from structural model

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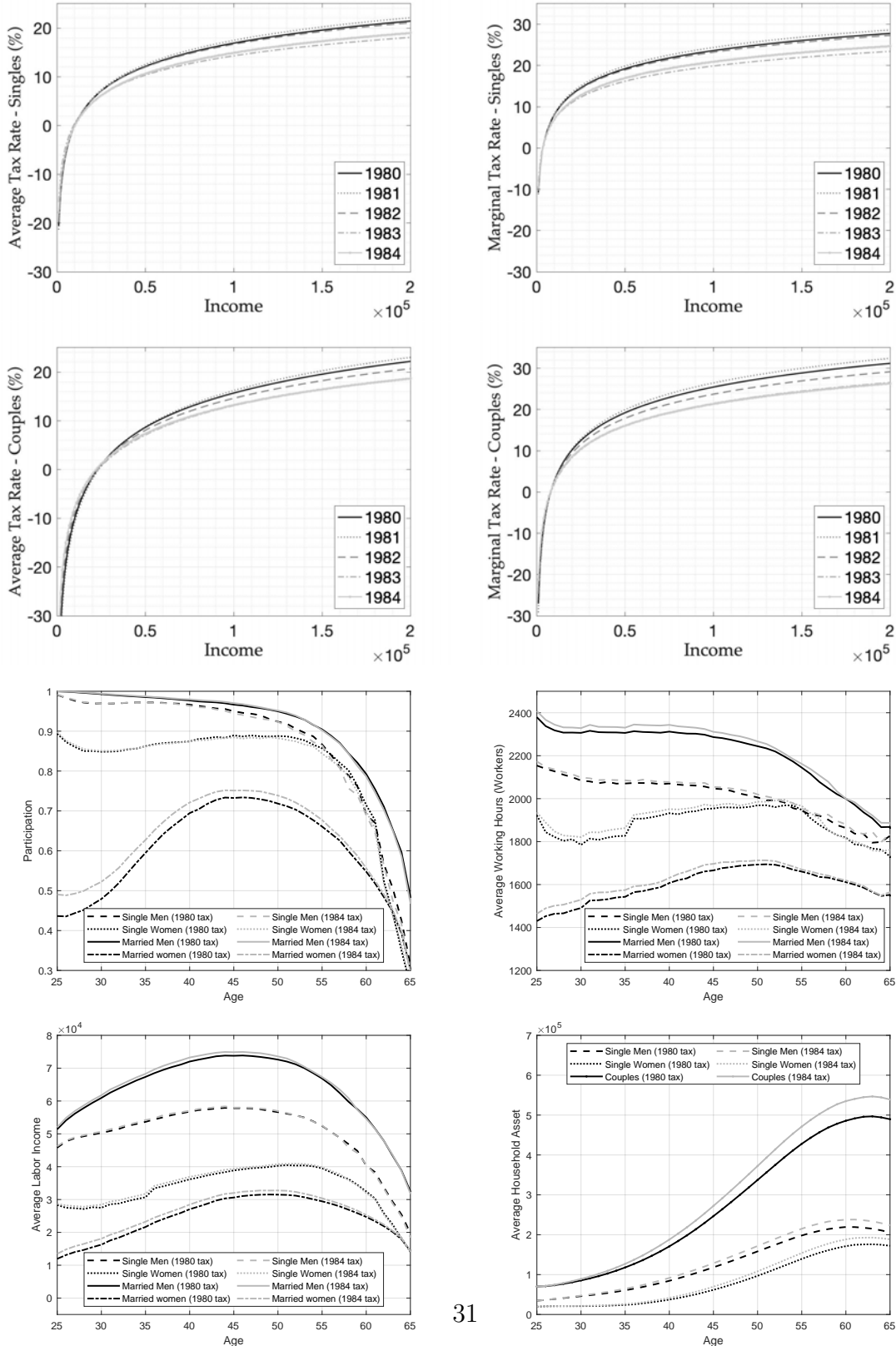
7.4   The Tax Reform Act of 1986

In the mid-1980s, President Reagan continued pushing the tax reduction effort. The 1986 Tax Reform Act was phased in between 1986 and 1988 and contained numerous provisions related to income taxes. First, it decreased the number of tax brackets and statutory tax rates. Second, it instituted a two-year increase in the EITC and introduced a provision to address inflation in calculating the EITC. Finally, it increased the standard deduction and the personal exemption.

The top four graphs of Figure 7 compare the 1985 and 1988 effective tax schedules and show that effective tax rates are lower in 1988, reflecting Reagan's continued goal of reducing taxation. The average tax rate for the median-income single (who earns $30,000 in 1985) decreases from 7.2% to 6.2%. Similarly, the median-income single's marginal tax rate drops from 13.6% to 12.5%. The average tax rate for median-income couples (which earn $75,000 in 1985) decreases from 10.7% to 9.0%, while their marginal tax rate drops from 19.0% to 17.1%.

With respect to our model's implications for these two tax regimes, the bottom four panels of Figure 7 reveal that in this case, the most noticeable changes occur for married women. More specifically, at younger ages, their participation increases by 1.3 percentage points, their hours worked, conditional on working, go up by 0.7%, and their income rises by 2.8%. As a result, the wealth of young married couples is 2.5% higher.

Figure 7: Comparing 1985 and 1988. Top two panels: tax rates. Bottom two panels: outcomes from structural model
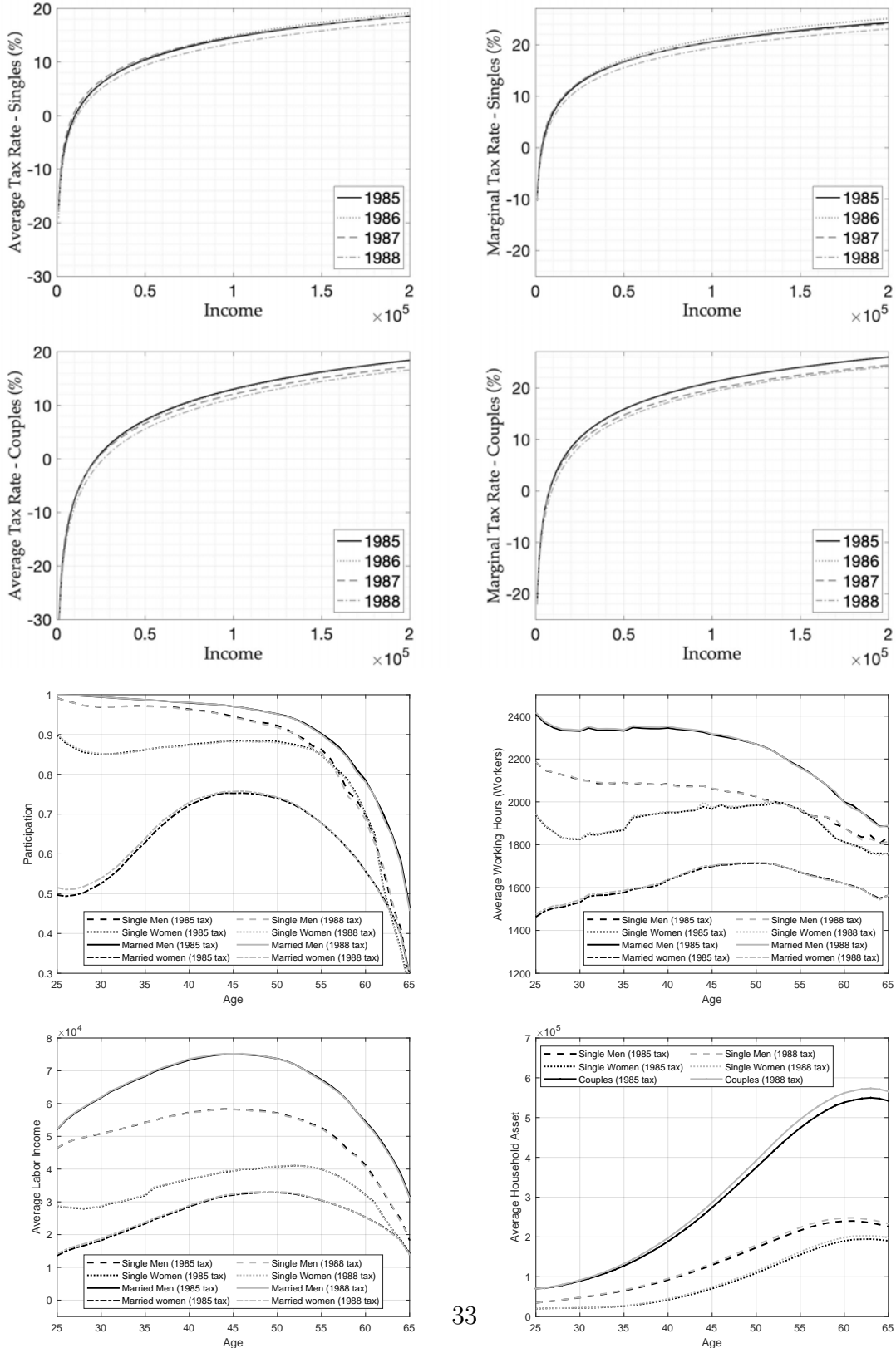
7.5 The Omnibus Budget Reconciliation Act of 1990

The Omnibus Budget Reconciliation Act (OBRA) of 1990 aimed at reducing the federal budget deficit. It was signed in November 1990 by President George H. W. Bush. The act took effect in 1991 and increased the individual income statutory tax rates, the alternative minimum tax rate, and payroll taxes. It also expanded the EITC and other low-income credits.

The top four graphs of Figure 8 compare the 1989 and 1991 effective tax schedules and show that this tax reform did increase effective taxation for both singles and couples, reflecting the goal of reducing the budget deficit. More specifically, the average tax rate for the median-income single (who earns \$31,000 in 1989) increases from 6.4% to 8.8%. Similarly, the median-income single's marginal tax rate rises from 12.3% to 15.4%. The average tax rate for median-income couples (which earn \$80,000 in 1989) grows from 11.8% to 14.8%, while their marginal tax rate rises from 17.4% to 21.0%.

With respect to our model's implications for these two tax regimes, the bottom four panels of Figure 8 show that this reform results in lower participation by young married and single women, lower hours for young married women and single people, and lower income and savings. More specifically, over the first 10 years of their working period, the participation of young married and single women drops by 1.9 and 0.9 percentage points, respectively. The hours of married women drop by 0.8%, those of single men by 1.2%, and those of single women by 2.3%. By contrast, income drops by 3.8% for married women, 1.6% for single men, and 2.6% for single women. Wealth for couples decreases by 1.4% and that of single men and women by 4.6% and 1.5%, respectively.

Figure 8: Comparing 1989 and 1991. Top two panels: tax rates. Bottom two panels: outcomes from structural model
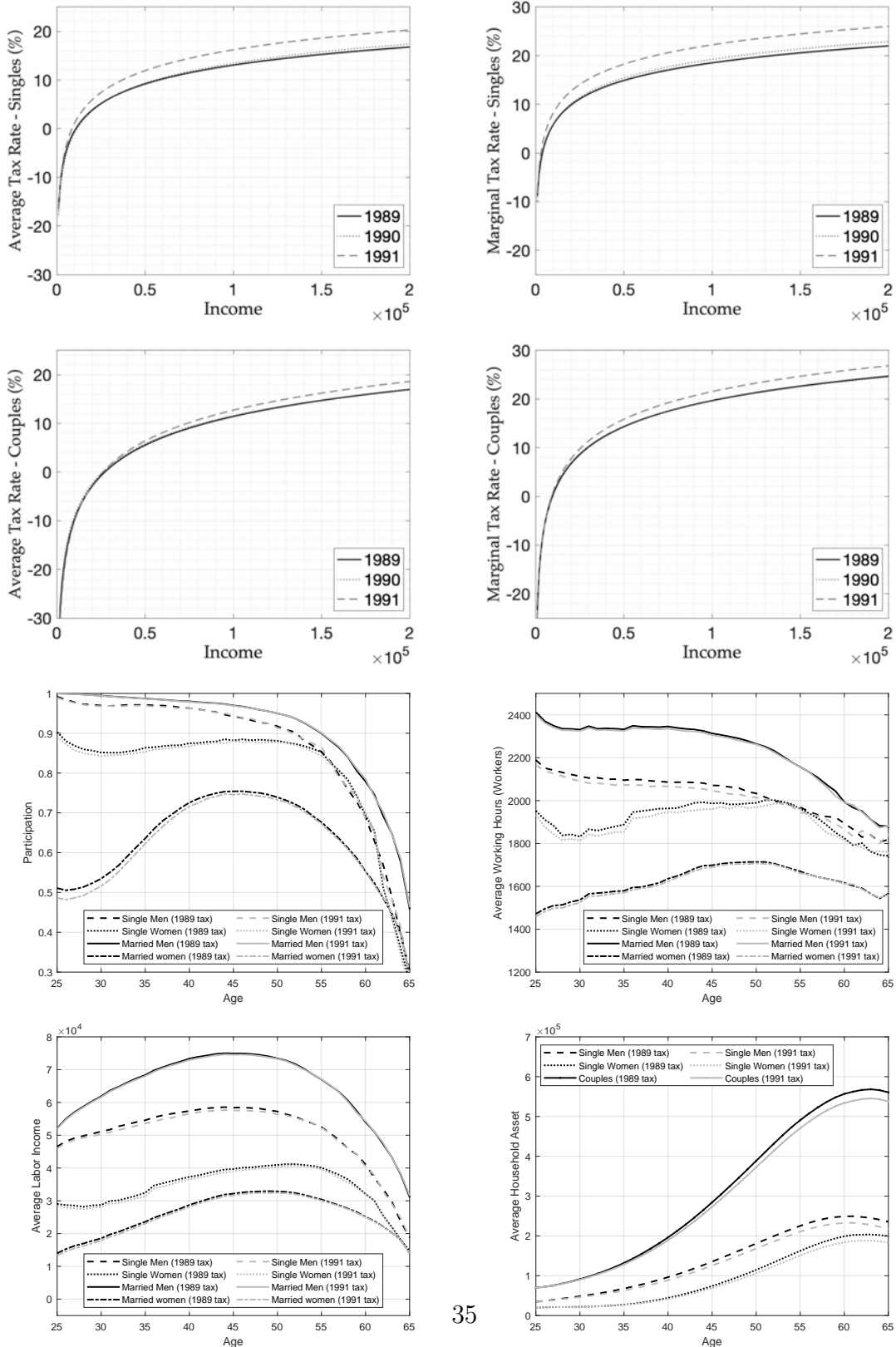
7.6 The Omnibus Budget Reconciliation Act of 1993

Soon after taking office in January 1993, President Clinton criticized the tax policy of his predecessor: "The big tax cuts for the wealthy, the growth in Government spending, and soaring health care costs all caused the Federal deficit to explode...while the deficit went up, investments in the things that make us stronger and smarter, richer and safer, were neglected..." (Clinton, 1993b). Soon after, he also stated that: "in order to accomplish both increased investment and deficit reduction...spending must be cut and taxes must be raised" (Clinton, 1993a).

The Omnibus Budget Reconciliation Act (OBRA) was signed in August 1993 and increased individual income tax rates retroactively, starting on January 1, 1993. Specifically, it raised the top tax rate, previously set at 31%, and imposed two new brackets with 36% and 39.6% tax rates. It also increased the AMT exemption amounts and created a two-tiered tax rate structure for the AMT, replacing the pre-1993 24% AMT tax rate with 26% and 28% tax rates. Finally, OBRA extended the EITC to single workers with no children earning $9,000 or less per year.

We estimate no statistically significant changes in the tax parameters for singles and small but statistically significant changes in the parameters for couples. As a result, the estimated tax functions (and the model implications) for 1993 are very similar to those in 1992. Hence, we do not report them. The fact that there are no changes in singles' taxes is consistent with the fact that OBRA contained provisions directed mostly at high-income taxpayers. For instance, the increase in the top tax rates affected singles earning more than $115,000 and couples earning more than $140,000. While the fraction of singles earning more than $115,000 is small, the fraction of couples earning more than $140,000 is relatively larger. This is why we observe no change for singles but statistically significant changes for couples.

7.7 The Economic Growth and Tax Relief Reconciliation Act of 2001 and the Jobs and Growth Tax Relief Reconciliation Act of 2003

President George W. Bush focused on the federal government budget surplus as a rationale for tax reform and tax cuts. The 2001 Economic Growth and Tax Relief Reconciliation Act (EGTRRA) introduced a lower income tax bracket, reduced marriage penalties by increasing the joint standard deduction, and increased the child tax credit. This reform was phased in until 2006, and most of its provisions were meant to be temporary and expire at the end of 2010.

Then, in 2003, President George W. Bush called for faster implementation of the changes set in motion by the 2001 EGTRRA. To this end, Congress passed the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) in May 2003 to make the previous reform's tax cuts permanent and decrease income taxes further. The JGTRRA also accelerated many of the previous reform's provisions and made them effective in 2003. In particular, it expanded the child tax credit and implemented the tax rate schedule and lower tax brackets and tax rates that were supposed to be in effect starting in 2006.

The top four graphs of Figure 9 compare the 2000 and 2006 effective tax schedules. The average tax rate for the median-income single (who earns $35,000 in 2000) decreases from 8.9% to 7.5%. Similarly, the median-income single's marginal tax rate drops from 15.8% to 13.6%. The average tax rate for median-income couples (which earn $89,000 in 2000) decreases from 10.9% to 8.3%, while their marginal tax rate changes from 21.3% to 18.6%.

With respect to our model's implications for these two tax regimes, the bottom four panels of Figure 9 show that this reform results in higher participation by young married and single women, higher hours and income for married and single women, and large increases in savings by all groups. More specifically, the participation over the first ten years of the working period by married and single women increases by 2.3 and 0.1 percentage points, respectively. Hours rise by 0.8% and 1.2% for the same groups. Their incomes go up by 4.6 and 1.7%, while the wealth of young couples is 3.8% higher and that of single women and men is 3.0% and 2.9% higher, respectively.

Figure 9: Comparing 2000 and 2006. Top two panels: tax rates. Bottom two panels: outcomes from structural model

7.8 The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010

The Great Recession motivated the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010. President Obama wanted to avoid the automatic increase in tax rates caused by the expiration of the Economic Growth and Tax Relief Reconciliation Act of 2001 and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (collectively known a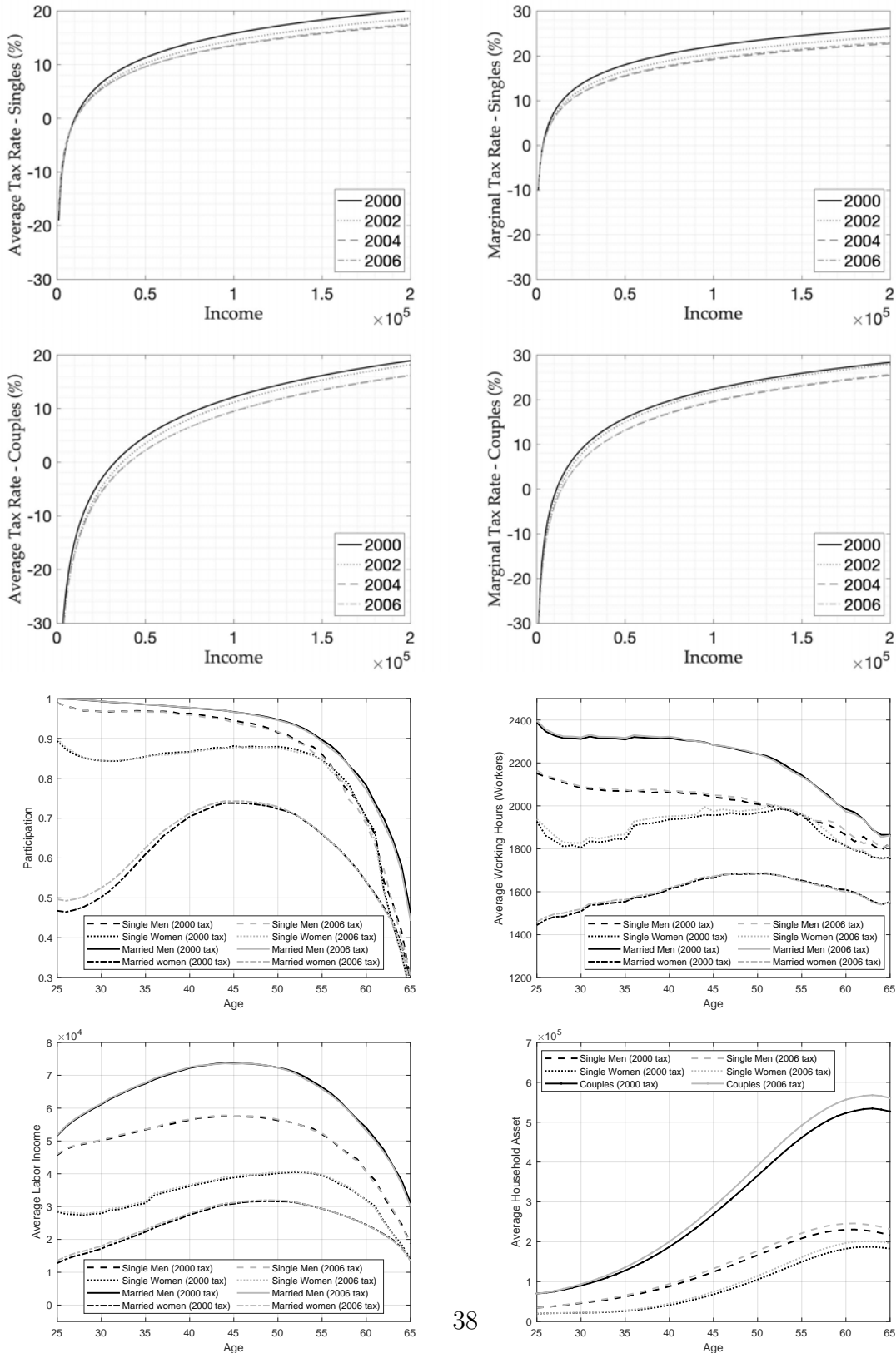s the Bush tax cuts.) The 2010 Act temporarily prolonged the Bush tax cuts until the end of 2012, increased the Alternative Minimum Tax exemption, and provided a temporary payroll tax cut.

The top four graphs of Figure 10 compare the 2008 and 2012 effective tax schedules. They show that while the reform slightly raises the effective tax rates of couples with above median income, it decreases those of singles above a certain income threshold ($25,000 and $8,000 for the average and marginal tax rate, respectively.) As a result, the average tax rate for the median-income single (who earns $32,000 in 2008) decreases from 7.1% to 6.8%. Similarly, the median-income single marginal tax rate drops from 13.7% to 12.5%. The average tax rate for median-income couples (which earn $91,000 in 2008) goes from 8.6% to 8.5%, while their marginal tax rate increases from 18.8% to 19.5%.

With respect to our model's implications for these two tax regimes, the bottom four graphs of Figure 10 show that this reform results mainly in more hours worked by single people. More specifically, hours worked over the first ten years of the working period go up by 1.4% for single women and by 0.7% for single men. The rest of the outcomes do not vary much.

Figure 10: Comparing 2008 and 2012. Top two panels: tax rates. Bottom two panels: outcomes from structural model
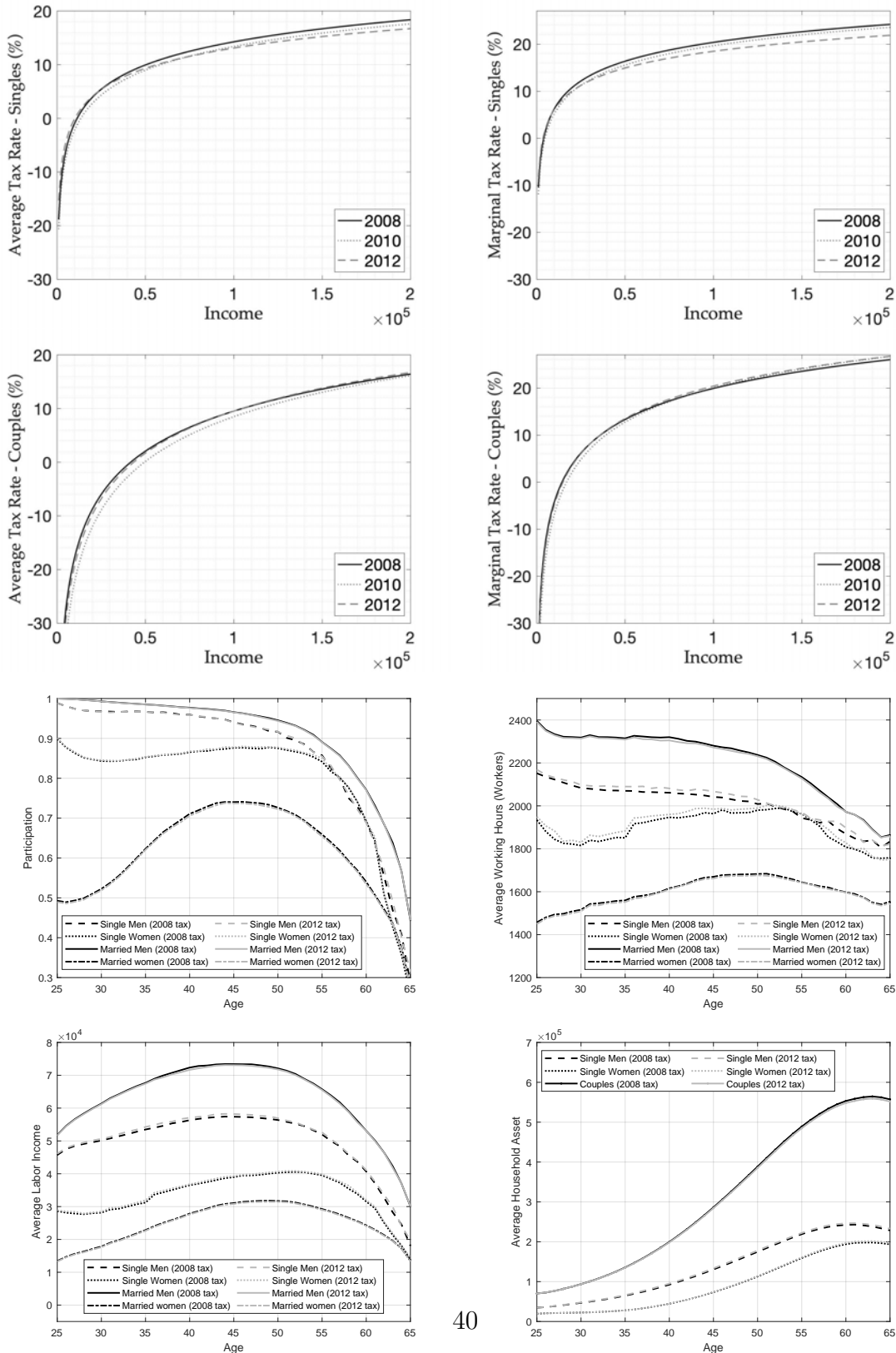
7.9 The 1969 Tax Regime Compared with the Historically Realized Regimes

In this subsection, we investigate how household behavior would have evolved if households had faced the 1969 tax regime during their entire life cycle instead of facing the observed historical tax variation. Hence, we start by comparing the 1969 tax regime with the time-varying tax regime described in Figure 2. In particular, we assume that households have perfect foresight about the evolution of taxes over time.

Figure 11 shows that a fixed tax regime has very different implications for household behavior than those of our time-varying benchmark. Panel (a) shows that the 1969 tax regime implies higher participation by married people and lower participation by singles. For instance, the participation of young married women is 2.1 percentage points higher, while the participation of young single women is 0.3 percentage points lower. Panel (b) shows that the increase in participation by married people is accompanied by a rise in their hours worked. In particular, hours increase by 1.4% and 0.9% for young married women and young married men, respectively under the 1969 regime. The increase in participation and hours leads to higher labor income, as shown in Panel (c), which grows by 4.9% for young married women and by 1.2% for young married men. Finally, Panel (d) shows that the increase in couples' income leads to a rise in their savings, which are 0.8% and 7.4% higher at younger and older ages, respectively.

(a) Participation

(b) Hours conditional on participation

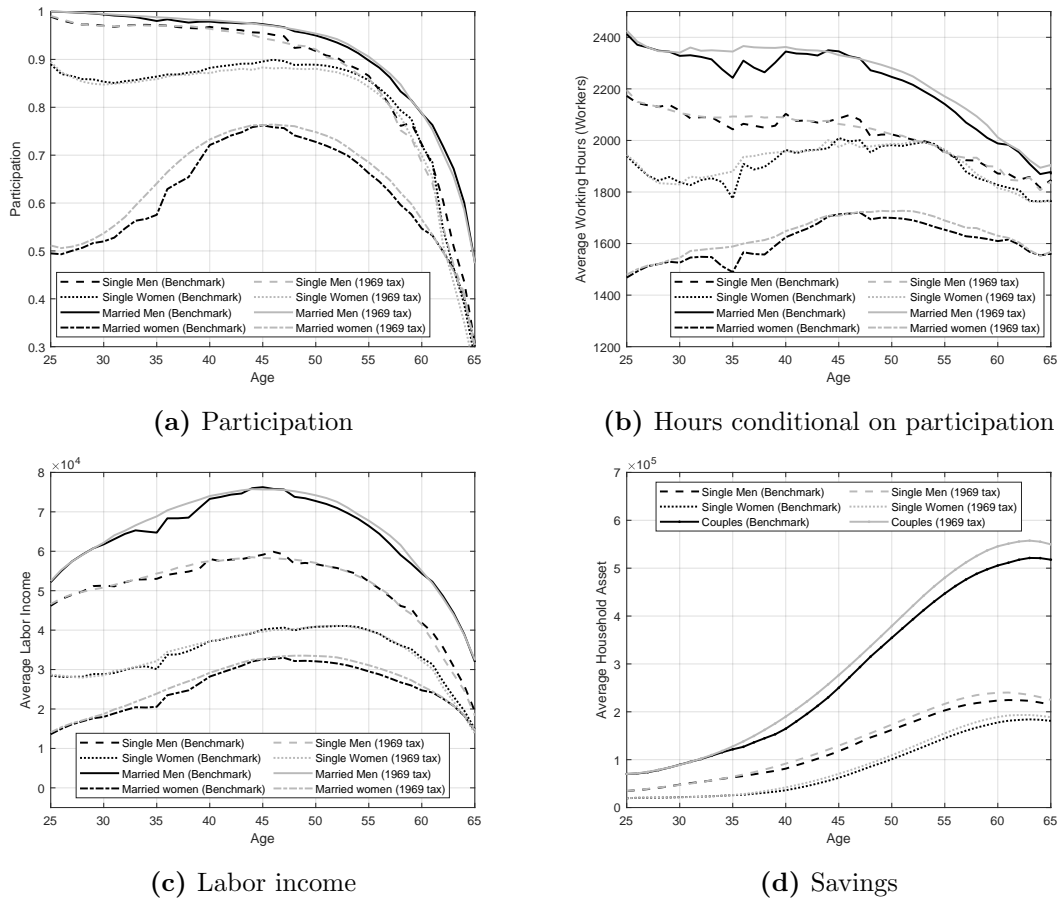**(c)** Labor income

(d) Savings

Figure 11: Comparing outcomes from our structural model with the observed variation in taxes (benchmark) with outcomes with a 1969 constant tax regime

8   Conclusions

This paper estimates effective income tax functions from 1969 to 2016 for a representative decision unit, married couples, and singles. We find substantial variation in average tax rates, marginal tax rates, and income tax progressivity across time and household types. We also compile a detailed history of income tax reforms over the last sixty years and relate nine notable tax reforms to our estimated tax functions. Finally, we use an estimated, dynamic model of couples and singles to better evaluate to what extent different tax regimes lead to different behavior responses in labor market participation, hours worked, and labor income and savings over the life cycle for married and single men and women.

We document the changes over time in average and marginal tax rates and income tax progressivity. We first do so for a representative decision unit; that is, we do not distinguish between couples and singles. We find that average and marginal tax rates display similar trends. When average tax rates increase – as is the case in the seventies and nineties – the marginal tax rates grow. When average tax rates decrease – as in the eighties, two-thousands, and twenty-tens – marginal tax rates also fall.

Second, we study the same changes over time, conditional on family structure— that is, for couples and singles. We show that tax rates and progressivity have changed significantly over time because of both different economic circumstances and policy changes. While some reforms met the goal they were meant to achieve, others did not end up having the desired effects on tax rates and progressivity.

Third, we use our estimated structural model to evaluate to what extent these tax regimes affect key economic behaviors and hence to what extent it is important to model the evolution of tax changes over time. We find not only that these tax regime changes are frequent but also that many of them imply effective tax variation that generates very different economic outcomes. For example, the increase in effective taxation that occurred during the 1973-1978 high-inflation tax period significantly and negatively affected the participation of married women, the hours worked by single and married men and women, and their labor income and savings. The 1981 Reagan tax cut also affected these behaviors, although in the opposite direction and to a slightly smaller extent. Noticeable also are the 1986 Reagan tax cut, the 1990 George H. W. Bush. tax increases, and the George W. Bush tax cuts, which especially

affected the participation of married women. Our model also predicts that the 2010 Obama tax cut increased hours worked by all four groups.

While we model tax changes over time, we assume perfect foresight. Given the frequency of these tax changes and the uncertainty surrounding the legislative process, it seems likely that economic decision-makers face a significant amount of uncertainty about the size and evolution of future taxes. While quantifying the effects of this uncertainty is very important, it makes for a major endeavor, and we leave it to future research.

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Appendices

Appendix A   Data

A.1   The PSID

The Panel Study of Income Dynamics (PSID) is a longitudinal survey of U.S. families that started in 1968 to evaluate President Johnson's War on Poverty. The original PSID sample included approximately 5000 households divided into two subsamples: the Survey Research Center (SRC) sample, which was a representative sample of the U.S. population and consisted of around 3,000 families, and the Survey of Economic Opportunity (SEO) sample, which oversampled poor families and included approximately 2000 families. We consider only the SRC sample.[7]

Data have been collected annually from 1968 to 1997 and biennially after. Income questions in the PSID are retrospective, which means that, for example, questions asked in the 2017 wave refer to income for the 2016 calendar year.

We use each PSID wave available between 1970 and 2017 (corresponding to the tax years 1969-2016) to estimate time-specific tax functions. While PSID data are available for 1967 and 1968 as well, they miss information on the transfers that we need to construct our estimation inputs, and thus we do not use them.

A.2   Income Definitions and Components

Our measure of household income is the sum of the income received by the head of the household and the spouse (if present).

Pre-tax income is defined as the sum of all monetary income received by the head of the household and the spouse (or by the head only, if single) in a given tax year. It includes labor income; the asset part of the income from farm, business, roomers, and the like.; income from rent received; interest and dividend income; and transfer income, which includes aid to dependent children (ADC, later turned into AFDC and currently TANF), Social Security benefits, income from retirement pay,

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[7]The SRC subsample is a random sample and therefore sample weights are not needed. Numerous other studies have focused on the SRC subsample only. See, for example, Heathcote, Storesletten, and Violante (2014), Blundell, Pistaferri, and Saporta-Eksten (2016), and Hryshko and Manovskii (2018).

pensions or annuities, unemployment benefits and worker's compensation, alimony and child support received, help from relatives, Supplemental Security Income (SSI), income from other sources, and other welfare income. **Post-tax income** is defined as pre-tax income minus the federal income tax liability, which includes capital gains rates, surtaxes, AMT, and refundable and nonrefundable credits, as computed by TAXSIM (the NBER microsimulation program to compute taxes).

We convert all nominal variables into real terms using the Consumer Price Index for All Urban Consumers (CPI-U) and 2016 as our base year.

A.3 Taxes

Information about federal income taxes paid is provided directly by the PSID up to 1991. After that date, we compute taxes by using the NBER's TAXSIM (we extend the program written by Kimberlin, Kim, and Shaefer (2015)). We calculate post-tax income as pre-tax income minus taxes.

A.4 Imputation of Medical Expenses

Medical expenses are needed to compute tax liabilities. We compute them using the approach of Borella, De Nardi, and Yang (2023) and as follows.

For years before 1999, data on medical expenses and charitable contributions are not available and need to be imputed, as they may be deducted from gross income (if the household chooses to itemize). We impute them by regressing the sum of the two items for the pooled years 1999-2016 and using these regression coefficients to compute fitted values for the years prior to 1999. To perform this regression we include demographic and income variables, such as family size, employment status of the head and spouse, if present, state of residence, wages, pensions, other incomes, education, number of children, age, and marital status. Then, we add an error term to that prediction to tackle the attenuation in the variance of the distribution of the imputed values, following the procedure in David, Little, Samuhel, and Triest (1986), and French and Jones (2011). Considered in more detail, the procedure is as follows. After regressing the sum of the two items on the vector of observables for the sample of heads who choose to itemize, we compute both the predicted value and the residual. So we have $deduc = z\beta + \varepsilon$. Second, for each household i for which $deduc$ is observed, we calculate the predicted value $\widehat{deduc_i} = z_i\beta$ and the residual $\hat{e}_i = deduc_i - \widehat{deduc_i}$.

Third, we sort the predicted value $\widehat{deduc}_i$ into deciles and keep track of all values of $\hat{e}_i$ within each decile. Next, for every individual j with missing $deduc$, we impute $\widehat{deduc}_j = z_j \beta$. Then, we impute $\hat{e}_j$ for households with missing $deduc$ by finding a random individual i in the non-missing sample with a value of $\widehat{deduc}_i$ in the same decile as $\widehat{deduc}_j$ and set $\hat{e}_j = \hat{e}_i$. The imputed value of $deduc$ is $\widehat{deduc}_j + \hat{e}_j$.

A.5   Marital Status

In Section 5 we estimate tax functions by marital status. We distinguish between singles, married couples, and cohabiters. We only consider to be "married," couples who are legally married and can thus file their taxes jointly, while cohabiting households are composed of two unmarried people who live together. By law, cohabiters cannot file their taxes jointly - only legally married couples can - and must file their taxes as singles. Until 1983 the PSID did not distinguish between married couples and cohabiters, so we observe cohabiters only from the 1983 wave onward.

A.6   Sample Selection

Our initial sample consists of 161,321 observations for households from the SRC subsample of the PSID.

Table 2 describes our sample selection for estimating effective tax functions for the representative decision unit. We first drop all observations with non-positive income, as we cannot compute logs for those. Then, we drop the observations for the years 1967 and 1968 because they do not contain crucial information about transfers that we need to construct our income definitions. This leaves us with 154,669 observations. Then, we trim the sample to exclude observations with pre-tax income below the 0.5th and above the 99th percentile in each year. Subsequently, we drop observations with missing values of either log pre- or post-tax income and observations with plainly incorrect values of the income component variables. This leaves us with 150,501 observations.

We further clean additional outliers using the DFBETA procedure (see for instance Bollen and Jackman (1985)). That is, before estimating our tax functions, we run year-by-year regressions of log post-tax income on log pre-tax income to compute DFBETAs. The DFBETAs cleaning methodology focuses on one coefficient – in our case, the coefficient on the logarithm of pre-tax income in Equation 4 – and

computes the difference between the estimated coefficients when a certain observation is included and when it is excluded. It then scales that difference by the estimated standard error of the coefficient. We remove observations with DFBETA greater than 1 (as done by Bollen and Jackman (1985)), which imply that a particular observation is eliminated when it shifts the estimated coefficient by at least one standard error. Our final sample for the representative decision unit consists of 150,500 observations.

Table 3 describes the sample selection for estimating effective tax functions by household type. The procedure is similar to the one for the representative decision unit, the only difference being that we perform income trimming by year and household type. The final samples consist of 50,561 observations for singles, 93,166 for married couples, and 6,845 for cohabiters.

Sample	Selected out	Selected in
Initial sample		161,321
Positive income	1,092	160,229
1969-2016	5,560	154,669
After income trimming	2,248	152,421
Has all values of income	1,914	150,507
Has consistent income	6	150,501
$|\text{DFBETA}| < 1$	1	150,500

Table 2: Sample selection for representative decision unit

Appendix B   Tax Function Fit

Among others, Heathcote, Storesletten, and Violante (2017) and Fleck, Heathcote, Storesletten, and Violante (2021) show that our log-linear tax function provides a good approximation of the federal income tax system in the United States. We corroborate this finding by dividing log pre-tax income in 50 bins and, for each of those bins, computing the average of log pre- and post-tax income at fifty quantiles. Figure 12 reports the results for six years, and shows that this relationship is approximately log-linear. The remaining PSID waves display very similar patterns.

Sample	Selected out	Selected in
Initial sample		161,321
Positive income	1,092	160,229
1969-2016	5,560	154,669
After income trimming	2,204	152,465
Has all values of income	1,870	150,595
Has consistent income	5	150,590
	Singles	
$|$DFBETA$| < 1$	1	50,561
	Married Couples	
$|$DFBETA$| < 1$	0	93,166
	Cohabiters	
$|$DFBETA$| < 1$	17	6,845

Table 3: Sample selection by household type

Appendix C   Representative Person

In Section 4, we define the representative decision unit as the household (that is, we compute income at the household level). In this appendix, we propose an alternative definition that allows us to study the representative person instead. Specifically, we duplicate married households in our dataset and run the estimation using the resulting sample. Doing so allows us to take into account that a married couple is made up of two people and thus allows us to construct a representative decision unit.

Figure 13 shows that changing the definition of the representative decision unit does not generate dramatic changes for the estimation results.
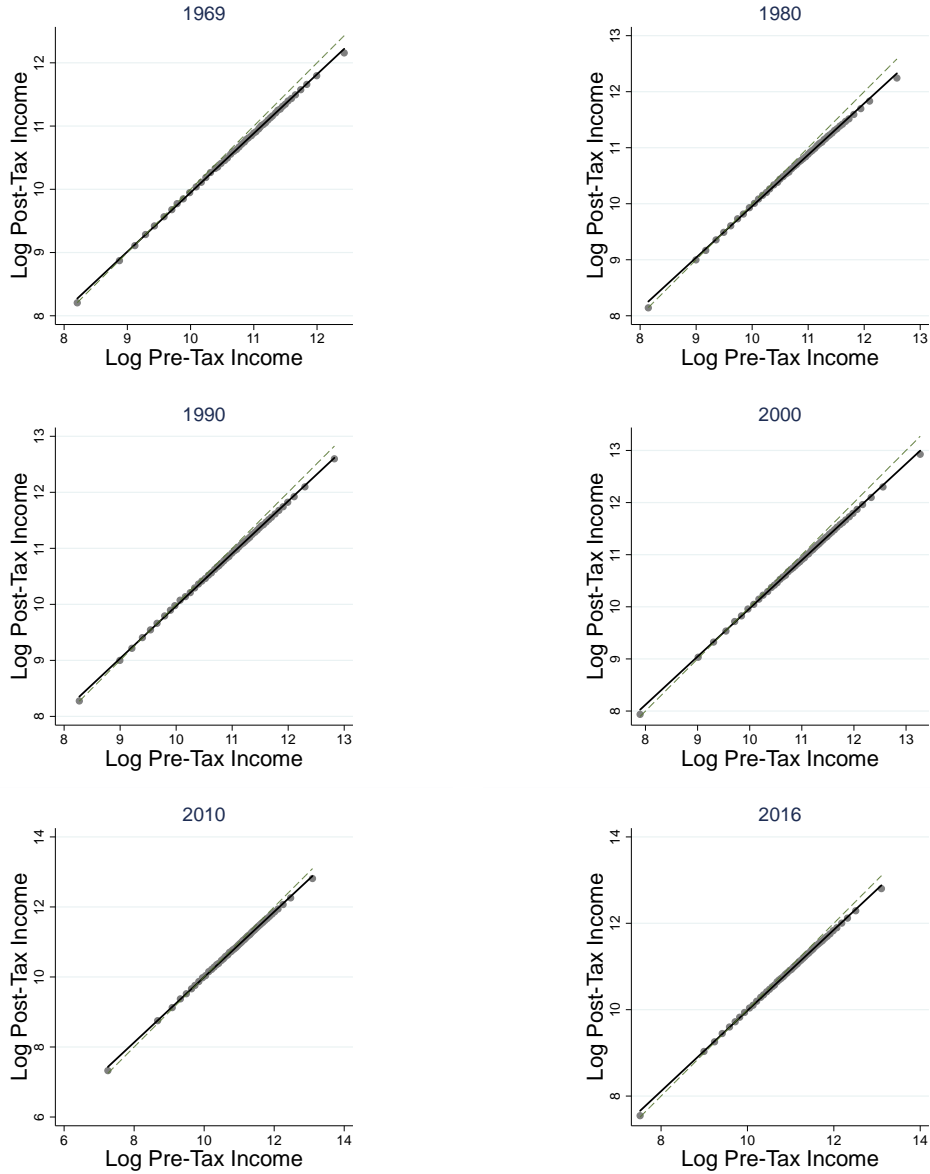
Figure 12: Log post-tax income as a function of log pre-tax income. Post-tax income is defined as pre-tax income minus federal income taxes. Each dot corresponds to a quantile of the log pre-tax income distribution and the corresponding average log post-tax income. The dashed line is the 45-degree line.
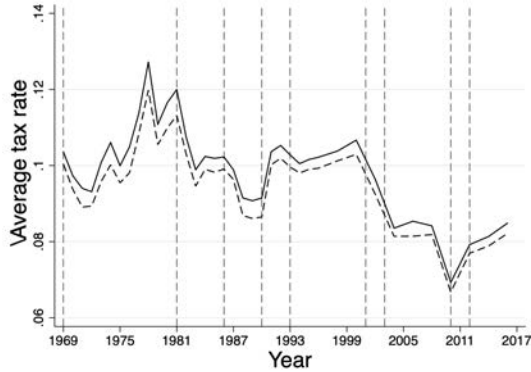
(a) Estimated Average Tax Rate (λ)
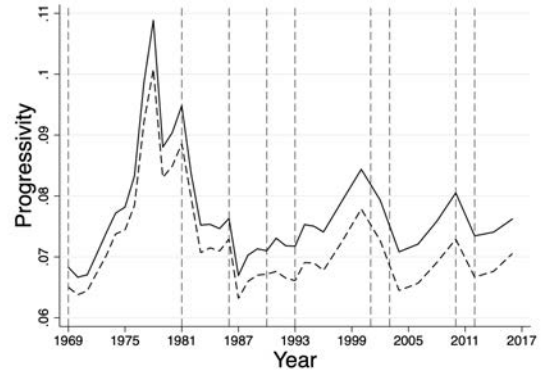
(b) Estimated Progressivity (τ)
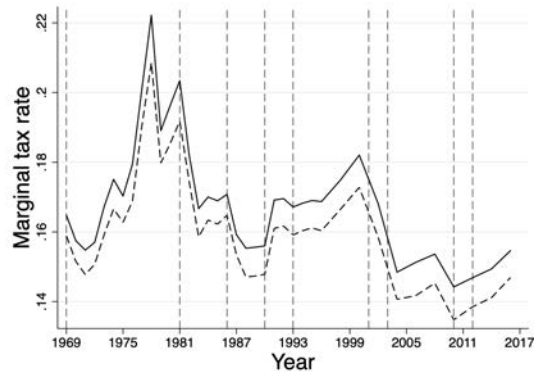
(c) Marginal Tax Rate

Figure 13: Estimation results for the representative decision unit and the representative person. The solid line is the representative decision unit, the dashed line is the representative person. Pre-tax and post-tax income used to estimate λ and τ are normalized by the median pre-tax income in each year. The dashed vertical lines correspond to the years of the tax reforms we focus on: 1969, 1981, 1986, 1990, 1993, 2001, 2003, 2010, and 2012.

Appendix D Cohabiters

Cohabiters differ from singles and married couples: while cohabiters can pool incomes together and share expenses and risks, they must file their taxes individually. In contrast, married people typically file jointly, which usually leads to a lower tax burden than filing separately. Figure 14 displays the evolution over time of the fraction of households by marital status in our PSID sample.

Married households are in the majority at the beginning of our sample, but their share declines steadily and is close to half the sample in 2017.
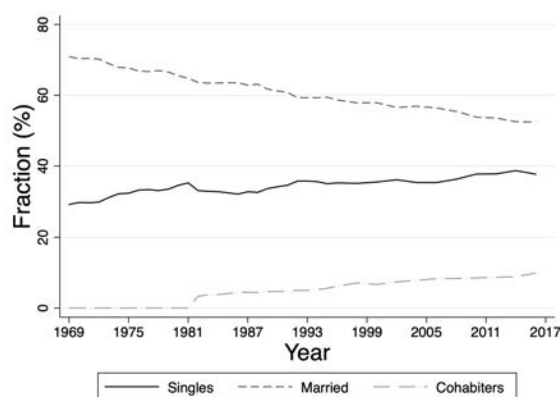
Figure 14: Fraction of households by marital status over time.

From the 1983 wave onward, the PSID has recorded married and cohabiting households separately. Before the 1983 wave, cohabiters are indistinguishable from married couples, but our results for the pre-1983 period are not significantly affected by the inclusion of cohabiters in the married group, since as Figure (14) shows, the fraction of cohabiters in our sample is very small until recent years.

D.1 Effective Taxation Over Time

Figure 15 displays the average tax rate at median income, progressivity, the marginal tax rate at median income, and pre-tax median income over time and by marital status.

Panel (a) of Figure 15 shows that the average tax rate for median cohabiters is close to that of married couples and thus higher of that of median singles. Panel (d) indicates that the cohabiter's median income is higher than that of singles. This

feature, together with the different rules applying to married and single people explain the higher average tax rate of median coahabiters compared to that of median singles. Panels (b) and (c) highlight that the progressivity parameter τ and the marginal tax rate for this group are, instead, similar to those of singles.

(a) Average Tax Rate (λ)

(b) Progressivity (τ)

(c) Marginal tax rate

(d) Median Household Income (2016 $)
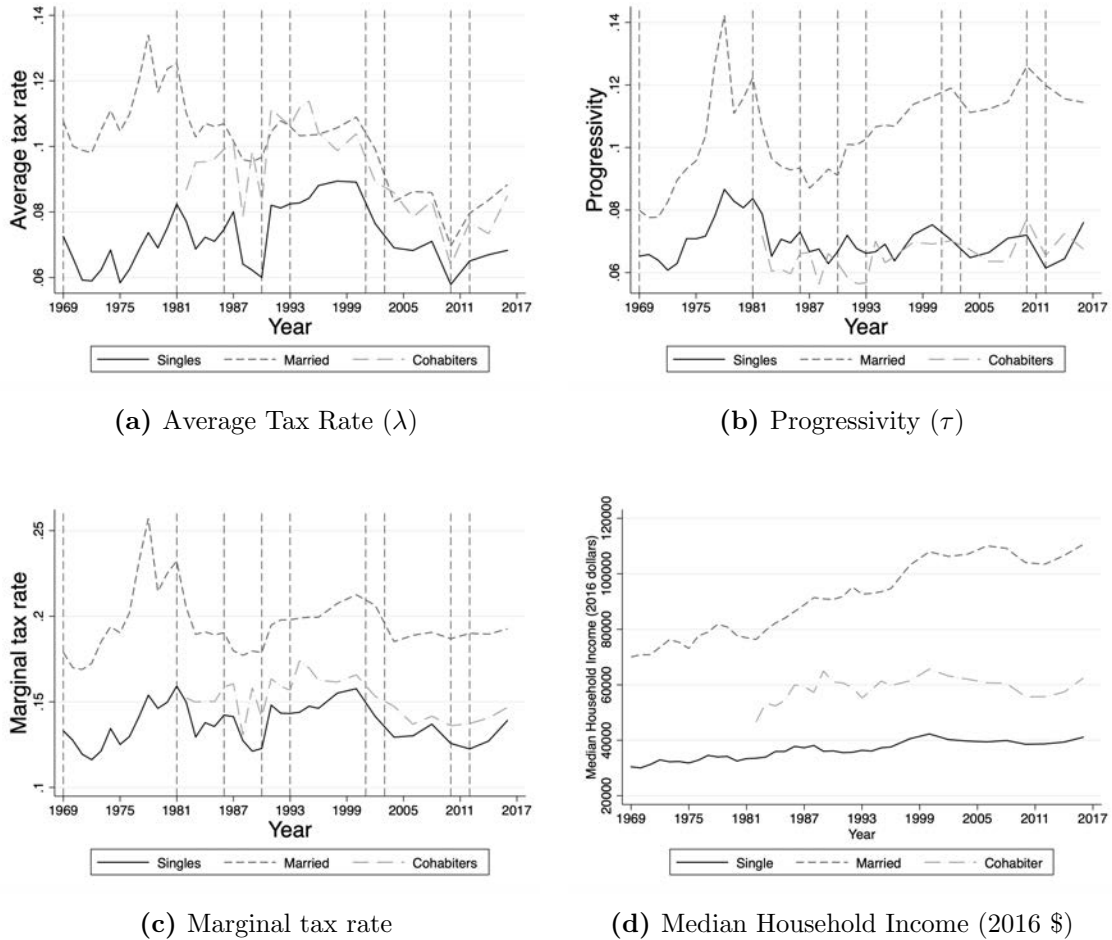
Figure 15: Estimation by household type: average tax rate, progressivity, marginal tax rate, and pre-tax median income. The average and marginal tax rates refer to the median household income for each household type and in each year. Vertical dashed lines: 1969, 1981, 1986, 1990, 1993, 2001, 2003, 2010, 2012 tax reforms.

Appendix E Structural Model

As our model comes from Borella, De Nardi, and Yang (2023), we follow its exposition closely. Net worth a_t earns a rate of return r. Our model period is one year long. There are three stages in one's life: a working stage (ages 25 to 61), an early retirement stage (ages 62 to 65), and a retirement stage (age 66 to the maximum age of 99).

During the **working stage**, single and married individuals choose how much to work and save and face wage shocks. Married people face divorce shocks, and single people might meet partners and get married. Wages are a function of one's human capital (which is endogenously accumulated while working) and are affected by shocks.

We model (and estimate) available time to be split between working and leisure and allow it to depend on one's gender and marital status. We interpret it as net of home production, child care, and elderly care that one has to perform whether working or not (and that is not easy to outsource). All workers have to pay a fixed cost of working, which depends on their age, gender, and marital status. It represents the cost of commuting, getting ready for work, making arrangements for being able to work, and so on.

Single women and married people have children, and their number depends on maternal age and marital status. We allow for both time costs and monetary costs of raising children. The time costs affect one's available time for working and enjoying leisure. The monetary costs enter our model in two ways: they affect consumption through equivalent scales, and working mothers have to pay child care costs that depend on the age and number of their children and on their own earnings. Hence, child care costs are a normal good: women with higher earnings pay for more expensive child care.

During the **early retirement stage**, people still experience wage shocks, but single people don't get married anymore, and couples no longer divorce.[8] If they claim Social Security, they can no longer work. Couples claim Social Security jointly.

During the first year of the **retirement stage**, those who have not already claimed Social Security do so and stop working. People face health shocks, out-of-pocket medical expenses, and mortality shocks. Thus, each married person faces the risk

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[8]Only 1% of couples get divorced and 4% of singles get married between ages 62 and 72 in the HRS data for our 1945 cohort.

of their spouse dying, in addition to their own death. Mortality risk and medical expenses depend on gender, age, health status, and marital status.

E.1 Preferences

Let t be age, with people entering at age 25 and dying by age 99. Given that we only have one cohort, t indexes both age and time.

Households discount the future at rate β. The superscript i denotes gender, with $i = 1, 2$ being a man or a woman, respectively. The superscript j denotes marital status, with $j = 1, 2$ being single or being in a couple, respectively.

Each **single person** has preferences over consumption and leisure, and the period flow of utility is given by the standard CRRA utility function

$$v^i(c_t, l_t, \eta_t^{i,1}) = \frac{((c_t/\eta_t^{i,1})^\omega l_t^{1-\omega})^{1-\gamma} - 1}{1 - \gamma},$$

where c_t is consumption, $\eta_t^{i,j}$ is its equivalent scale for couples and $\eta_t^{i,1}$ is the one for singles, and $l_t^{i,j}$ is leisure, which is given by

$$l_t^{i,j} = L^{i,j} - n_t^i - \Phi_t^{i,j} I_{n_t^i}, \tag{5}$$

where $L^{i,j}$ is available time, net of home production, which can be different for single and married men and women. The functional form we use for it is

$$L^{i,j} = \frac{L}{1 + \exp(FL^{i,j})}, \tag{6}$$

where we normalize L to 112 hours a week and estimate $FL^{i,j}$ using our structural model. The term n_t^i, is hours worked, and $I_{n_t^i}$ is an indicator function that equals 1 when hours worked are positive.

The term $\Phi_t^{i,j}$ is the fixed time cost of working, which depends on gender, marital status, and age. It assumes the following functional form, whose parameters we estimate using our structural model:

$$\Phi_t^{i,j} = \frac{\exp(\phi_0^{i,j} + \phi_1^{i,j} t + \phi_2^{i,j} t^2)}{1 + \exp(\phi_0^{i,j} + \phi_1^{i,j} t + \phi_2^{i,j} t^2)}. \tag{7}$$

We assume that **couples** maximize their joint utility function

$$w(c_t, l_t^1, l_t^2, \eta_t^{i,j}) = \frac{((c_t/\eta_t^{i,j})^\omega (l_t^1)^{1-\omega})^{1-\gamma} - 1}{1-\gamma} + \frac{((c_t/\eta_t^{i,j})^\omega (l_t^2)^{1-\omega})^{1-\gamma} - 1}{1-\gamma}.$$

Note that for couples, $\eta_t^{i,j}$ does not depend on gender and $j = 2$.

E.2   Human Capital and Wages

We define human capital, $\bar{y}_t^i$, as one's average past earnings at each age (see Equation (15) for a formal definition). It is therefore a function of one's initial wages (and schooling to the extent that it is reflected in one's wages) and subsequent labor market experience and wages, and not just of experience measured as the amount of time one has previously worked. Our definition has two important benefits. First, it respects the previous findings that the returns to experience depend on one's education, and thus human capital and earnings (Blundell, Costa Dias, Meghir, and Shaw (2016) and Costa Dias, Joyce, and Parodi (2018). Second, it allows us to use only one state variable to keep track of both human capital and Social Security contributions, thereby keeping our framework manageable.

Wages have two components: a deterministic function of age, gender, and human capital $e_t^i(\bar{y}_t^i)$ and a persistent shock ϵ_t^i that evolves as follows:

$$\ln \epsilon_{t+1}^i = \rho_\varepsilon^i \ln \epsilon_t^i + v_t^i, \ \ v_t^i \sim N(0, (\sigma_v^i)^2).$$

The product of $e_t^i(\cdot)$ and ϵ_t^i determines one's effective hourly wage per hour.

E.3   Marriage and Divorce

During the working period, the probability that a single person gets married at the beginning of next period depends on age, gender, and wage shock: $\nu_{t+1}(\cdot) = \nu_{t+1}(i, \epsilon_t^i)$.

To allow for assortative mating conditional on meeting a partner, we make it so that the probability of meeting with a partner p with wage shock ϵ_{t+1}^p is

$$\xi_{t+1}(\cdot) = \xi_{t+1}(\epsilon_{t+1}^p | \epsilon_{t+1}^i, i). \tag{8}$$

We assume random matching over wealth a_{t+1} and average accumulated earnings of the partner $\bar{y}^p_{t+1}$, conditional on the partner's wage shock. Thus, we have

$$\theta_{t+1}(\cdot) = \theta_{t+1}(a^p_{t+1}, \bar{y}^p_{t+1} | \epsilon^p_{t+1}). \tag{9}$$

A working-age couple can be hit by a divorce shock that depends on age and the wage shock of both partners: $\zeta_{t+1}(\cdot) = \zeta_{t+1}(\epsilon^1_t, \epsilon^2_t)$. If the couple divorces, they split their wealth equally (we experimented with different asset splits with very similar results). We abstract from alimony.

E.4 Costs of Raising Children and Running a Household

We keep track of both the total number of children and their age as a function of mothers' age and marital status. The term $f^{0,5}(i, j, t)$ is the number of children age 0-5, and $\tau^{0,5}_c$ is the child care cost for each child in that age group. Similarly, $f^{6,11}(i, j, t)$ is the number of children age 6-11, and $f^{0,5}(i, j, t)$ is the corresponding child care cost for each child. We use our structural model to estimate these costs.

E.5 Medical Expenses and Death

Once they reach age 66, we endow people with a distribution of health that depends on their marital status and gender. After that, they face survival, medical expenses, and health shocks. Health status ψ^i_t can be either good or bad and evolves according to a Markov process $\pi^{i,j}_t(\psi^i_t)$ that also depends on age, gender, and marital status. Medical expenses $m^{i,j}_t(\psi^i_t)$ are a function of age, gender, marital status, and health. Survival probabilities $s^{i,1}_t(\psi^i_t)$ are a function of age, gender, marital status, and health.

E.6 Initial Conditions

We take the fraction of single and married people at age 25 and their distribution over the relevant state variables (wealth, human capital, and wage shocks, the latter two being for each of the spouses in the case of couples) from the PSID for our cohort.

E.7 Government

Each household in our model faces the effective time-varying tax rates that it experienced in the data and that we estimate from the PSID as discussed in the main body of the paper and in several appendices. We allow our effective tax rates to depend on marital status and age for our cohort (and thus time). Taxes paid are a function of total income Y as described in Equation (1) in the main body of the paper.

The government uses a proportional payroll tax τ_t^{SS}, up to a Social Security cap $\widetilde{y}_t$, to help finance old-age Social Security benefits, which are a function of average past earnings (or human capital, as discussed in Section E.2). We also allow the payroll tax and the Social Security cap to change over time, as in the data. We thus assume that the tax changes were anticipated by the households. The insurance provided by Medicaid and SSI in old age is represented by a means-tested consumption floor, $\underline{c}(j)$, as in Hubbard, Skinner, and Zeldes (1995).[9]

E.8 Recursive formulation

We compute nine value functions for the following groups and stages of life.

E.8.1 The Value Function of Working-Age Singles

The value function of a working-age single depends on the person's age t, gender i, wealth a_t^i, persistent earnings shock ϵ_t^i, and human capital $\bar{y}_t^i$:

$$W^s(t, i, a_t^i, \epsilon_t^i, \bar{y}_t^i) = \max_{c_t, a_{t+1}, n_t^i} \left(v^i(c_t, l_t, \eta_t^{i,1}) + \beta(1 - \nu_{t+1}(i))E_t W^s(t+1, i, a_{t+1}^i, \epsilon_{t+1}^i, \bar{y}_{t+1}^i) + \right.$$

$$\left. \beta\nu_{t+1}(i)E_t\left[\hat{W}^c(t+1, i, a_{t+1}^i + a_{t+1}^p, \epsilon_{t+1}^i, \epsilon_{t+1}^p, \bar{y}_{t+1}^i, \bar{y}_{t+1}^p)\right]\right), \qquad (10)$$

subject to Equation (5) and

$$Y_t^i = e_t^{i,j}(\bar{y}_t^i)\epsilon_t^i n_t^i, \tag{11}$$

$$\tau_c(i, j, t) = \tau_c^{0,5} f^{0,5}(i, j, t) + \tau_c^{6,11} f^{6,11}(i, j, t), \tag{12}$$

---

[9]Borella, De Nardi, and French (2018) discuss Medicaid rules and observed outcomes after retirement.

$$T(\cdot) = T(ra_t + Y_t, i, j, t), \tag{13}$$

$$c_t + a_{t+1} = (1+r)a_t^i + Y_t^i(1 - \tau_c(i,j,t)) - \tau_t^{SS}\min(Y_t^i, \widetilde{y}_t) - T(\cdot), \tag{14}$$

$$\bar{y}_{t+1}^i = (\bar{y}_t^i(t - t_0) + (\min(Y_t^i, \widetilde{y}_t)))/(t + 1 - t_0), \tag{15}$$

$$a_{t+1} \geq 0, \tag{16}$$

$$n_t^i \geq 0. \tag{17}$$

The expectation of the value function for next period if one remains single integrates over one's wage shock next period. If one gets married, it also integrates over the distribution of the partner's state variables. The value function $\hat{W}^c$ is the person's discounted present value of utility once he or she is in a married relationship with someone with given state variables (see Appendix E.8.7). Equation (15) describes the evolution of human capital, measured as average accumulated earnings (up to the Social Security earnings cap $\widetilde{y}_t$) and in which $t_0 = 25$.

E.8.2 The Value Function of Singles during the Early Retirement Stage

The recursive problem for someone who has claimed Social Security at age tr is

$$S^s(t, i, a_t^i, \bar{y}_r^i, tr) = \max_{c_t, a_{t+1}} \left(v^i(c_t, L^{i,j}, \eta_t^{i,1}) + \beta E_t S^s(t+1, i, a_{t+1}^i, \bar{y}_r^i, tr) \right), \tag{18}$$

subject to equations (13), (16), and

$$Y_t = SS(\bar{y}_r^i, tr) \tag{19}$$

$$c_t + a_{t+1} = (1+r)a_t + Y_t - T(\cdot). \tag{20}$$

The term $SS(\bar{y}_r{}^i, tr)$ is a function of the income that the single person earned during his or her working life $\bar{y}_r^i$ and claiming age tr.

Let $N^s(t, i, a_t^i, \epsilon_t^i, \bar{y}_t^i)$ denote the value function of a person during the early retirement period who has not yet claimed benefits:

$$N^s(t, i, a_t^i, \epsilon_t^i, \bar{y}_t^i) = \max_{c_t, a_{t+1}, n_t^i} \left(v^i(c_t, l_t^{i,j}, \eta_t^{i,1}) + \beta E_t V^s(t+1, i, a_{t+1}^i, \epsilon_{t+1}^i, \bar{y}_{t+1}^i) \right), \tag{21}$$

subject to equations (5), (11), (13), (15), (16), (17), and

$$c_t + a_{t+1} = (1+r)a_t^i + Y_t^i - \tau_t^{SS} \min(Y_t, \widetilde{y}_t) - T(\cdot). \tag{22}$$

Let $V^s(t, i, a_t^i, \epsilon_t^i, \bar{y}_t^i)$ denote the value function for a person during the early retirement stage who has not yet claimed and who, at the beginning of each period, chooses whether to claim, where D_t^i is an indicator function for claiming

$$V^s(t, i, a_t^i, \epsilon_t^i, \bar{y}_t^i) = \max_{D_t^i} \left((1 - D_t^i)N^s(t, i, a_t^i, \epsilon_t^i, \bar{y}_t^i) + D_t^i S^s(t, i, a_t^i, \bar{y}_t^i, t) \right). \tag{23}$$

E.8.3 The Value Function of Retired Singles

The value function of a retired single with health ψ_t^i, average realized lifetime earnings $\bar{y}_r^i$, and Social Security claiming age tr is

$$R^s(t, i, a_t, \psi_t^i, \bar{y}_r^i, tr) = \max_{c_t, a_{t+1}} \left(v^i(c_t, L^{i,j}, \eta_t^{i,1}) + \beta s_t^{i,j}(\psi_t^i) E_t R^s(t+1, i, a_{t+1}, \psi_{t+1}^i, \bar{y}_r^i, tr) \right), \tag{24}$$

subject to equations (13), (16), (19), and

$$B(a_t, Y_t, \psi_t^i, \underline{c}(j)) = \max \left\{ 0, \underline{c}(j) - [(1+r)a_t + Y_t - m_t^{i,j}(\psi_t^i) - T(\cdot)] \right\} \tag{25}$$

$$c_t + a_{t+1} = (1+r)a_t + Y_t + B(a_t, Y_t, \psi_t^i, \underline{c}(j)) - m_t^{i,j}(\psi_t^i) - T(\cdot) \tag{26}$$

$$a_{t+1} = 0, \quad \text{if} \quad B(\cdot) > 0. \tag{27}$$

The term $B(a_t, Y_t^i, \psi_t^i, \underline{c}(j))$ represents old-age means-tested government transfers (such as Medicaid and SSI) that ensure a minimum consumption floor $\underline{c}(j)$.

E.8.4 The Value Function of Couples during the Working Period

The value function of a married couple at this stage depends on both partners' state variables, where 1 and 2 refer to gender and $j = 2$:

$$W^c(t, a_t, \epsilon_t^1, \epsilon_t^2, \bar{y}_t^1, \bar{y}_t^2) = \max_{c_t, a_{t+1}, n_t^1, n_t^2} \left(w(c_t, l_t^{1,j}, l_t^{2,j}, \eta_t^{i,j}) \right.$$

$$+ (1 - \zeta_{t+1}(\cdot))\beta E_t W^c(t+1, a_{t+1}, \epsilon_{t+1}^1, \epsilon_{t+1}^2, \bar{y}_{t+1}^1, \bar{y}_{t+1}^2) \quad (28)$$

$$\left. + \zeta_{t+1}(\cdot)\beta \sum_{i=1}^{2} \left(E_t W^s(t+1, i, a_{t+1}/2, \epsilon_{t+1}^i, \bar{y}_{t+1}^i) \right) \right),$$

subject to equations (5), (11), (12), (15), and

$$T(\cdot) = T(ra_t + Y_t^1 + Y_t^2, i, j, t) \tag{29}$$

$$c_t + a_{t+1} = (1+r)a_t + Y_t^1 + Y_t^2(1 - \tau_c(2, 2, t)) - \tau_t^{SS}(\min(Y_t^1, \tilde{y}_t) + \min(Y_t^2, \tilde{y}_t)) - T(\cdot) \tag{30}$$

$$a_t \geq 0, \quad n_t^1, n_t^2 \geq 0. \tag{31}$$

The expected value of the couple's value function is taken with respect to the conditional probabilities of the wage shocks for each of the spouses (we assume independent draws). The expected values for the newly divorced people are taken using the appropriate conditional distribution for their own wage shocks. The term $\zeta_{t+1}(\cdot)$ represents the probability of divorce.

E.8.5 The Value Function of Couples during the Early Retirement Period

The recursive problem for couples that have claimed Social Security at age tr is

$$S^c(t, a_t, \bar{y}_r^1, \bar{y}_r^2, tr) = \max_{c_t, a_{t+1}} \left(w(c_t, L^{1,j}, L^{2,j}, \eta_t^{i,j}) + \beta E_t S^c(t+1, a_{t+1}, \bar{y}_r^1, \bar{y}_r^2, tr) \right), \tag{32}$$

subject to equations (13), (20), (16), and

$$Y_t = \max\left\{ (SS(\bar{y}_r^1, tr) + SS(\bar{y}_r^2, tr), \frac{3}{2}\max(SS(\bar{y}_r^1, tr), SS(\bar{y}_r^2, tr)) \right\}. \tag{33}$$

The variable Y_t represents Social Security spousal benefits: married people receive the highest amount between their own benefit and half of their spouse's benefit.

The value function of a couple that has not yet claimed benefits is

$$
\begin{aligned}
N^c(t, a_t, \epsilon_t^1, \epsilon_t^2, \bar{y}_t^1, \bar{y}_t^2) = \max_{c_t, a_{t+1}, n_t^1, n_t^2} \bigg(& w(c_t, l_t^{1,j}, l_t^{2,j}, \eta_t^{i,j}) \\
& + \beta E_t V^c(t+1, a_{t+1}, \epsilon_{t+1}^1, \epsilon_{t+1}^2, \bar{y}_{t+1}^1, \bar{y}_{t+1}^2) \bigg),
\end{aligned}
\tag{34}
$$

subject to equations (5), (11), (15), (29), (31), and

$$
c_t + a_{t+1} = (1+r)a_t + Y_t^1 + Y_t^2 - \tau_t^{SS}(\min(Y_t^1, \widetilde{y}_t) + \min(Y_t^2, \widetilde{y}_t)) - T(\cdot).
\tag{35}
$$

The value function of a married couple during the early retirement stage that has not yet claimed Social Security benefits is

$$
V^c(t, a_t, \epsilon_t^1, \epsilon_t^2, \bar{y}_t^1, \bar{y}_t^2) = \max_{D_t} \Big((1 - D_t) N^c(t, a_t, \epsilon_t^1, \epsilon_t^2, \bar{y}_t^1, \bar{y}_t^2) + D_t S^c(t, a_t, \bar{y}_t^1, \bar{y}_t^2, t) \Big).
\tag{36}
$$

E.8.6 The Value Function of Couples during Retirement

During this stage, the married couple's recursive problem $(j = 2)$ depends on each spouse's health shocks ψ_t^i, and there are survival shocks $s_t^{i,2}(\psi_t^i)$. We assume that the health shocks of each spouse are independent of each other and that the death shocks of each spouse are also independent of each other:

$$
\begin{aligned}
R^c(t, a_t, \psi_t^1, \psi_t^2, \bar{y}_r^1, \bar{y}_r^2, tr) = \max_{c_t, a_{t+1}} \bigg(& w(c_t, L^{1,j}, L^{2,j}, \eta_t^{i,j}) + \\
& \beta s_t^{1,j}(\psi_t^1) s_t^{2,j}(\psi_t^2) E_t R^c(t+1, a_{t+1}, \psi_{t+1}^1, \psi_{t+1}^2, \bar{y}_r^1, \bar{y}_r^2, tr) + \\
& \beta s_t^{1,j}(\psi_t^1)(1 - s_t^{2,j}(\psi_t^2)) E_t R^s(t+1, 1, a_{t+1}, \psi_{t+1}^1, \bar{\bar{y}}_r^1, tr) + \\
& \beta s_t^{2,j}(\psi_t^2)(1 - s_t^{1,j}(\psi_t^1)) E_t R^s(t+1, 2, a_{t+1}, \psi_{t+1}^2, \bar{\bar{y}}_r^2, tr) \bigg),
\end{aligned}
\tag{37}
$$

subject to equations (13), (16), (27), (33), and

$$
\bar{\bar{y}}_r^i = \max(\bar{y}_r^1, \bar{y}_r^2),
\tag{38}
$$

66

$$B(a_t, Y_t, \psi_t^1, \psi_t^2, \underline{c}(j)) = \max\Big\{0, \underline{c}(j) - \big[(1+r)a_t + Y_t - m_t^{1,j}(\psi_t^1) - m_t^{2,j}(\psi_t^2) - T(\cdot)\big]\Big\},$$

$$\tag{39}$$

$$c_t + a_{t+1} = (1+r)a_t + Y_t + B(a_t, Y_t, \psi_t^1, \psi_t^2, \underline{c}(j)) - m_t^{1,j}(\psi_t^1) - m_t^{2,j}(\psi_t^2) - T(\cdot). \tag{40}$$

Survivors collect benefits based on the higher amount between their own contributions and those of their deceased spouse (Equation (38)).

E.8.7 The Value Functions of Individuals in Couples

We have to compute the joint value function of the couple to appropriately compute joint labor supply and savings under the married couple's available resources. However, when computing the value of getting married for a single person, the relevant object for that person is his or her discounted present value of utility in the marriage. We thus compute this object for person of gender i who is married with a specific partner.

Let $\hat{c}_t(\cdot)$, $\hat{l}_t^{i,j}(\cdot)$, $\hat{a}_{t+1}(\cdot)$, and $\hat{D}_t(\cdot)$ denote, respectively, the optimal consumption, leisure, saving, and claiming decision for an individual of gender i in a couple with a given set of state variables. During the working period, we have

$$\hat{W}^c(t, i, a_t, \epsilon_t^1, \epsilon_t^2, \bar{y}_t^1, \bar{y}_t^2) = v^i(\hat{c}_t(\cdot), \hat{l}_t^{i,j}, \eta_t^{i,j}) +$$
$$\beta(1 - \zeta(\cdot))E_t\hat{W}^c(t+1, i, \hat{a}_{t+1}(\cdot), \epsilon_{t+1}^1, \epsilon_{t+1}^2, \bar{y}_{t+1}^1, \bar{y}_{t+1}^2) + \tag{41}$$
$$\beta\zeta(\cdot)E_t W^s(t+1, i, \hat{a}_{t+1}(\cdot)/2, \epsilon_{t+1}^i, \bar{y}_{t+1}^i).$$

During the early retirement period, we have

$$\hat{N}^c(t, i, a_t, \epsilon_t^1, \epsilon_t^2, \bar{y}_t^1, \bar{y}_t^2) = v^i(\hat{c}_t(\cdot), \hat{l}_t^{i,j}, \eta_t^{i,j})$$
$$+ \beta E_t\hat{V}^c(t+1, i, \hat{a}_{t+1}(\cdot), \epsilon_{t+1}^1, \epsilon_{t+1}^2, \bar{y}_{t+1}^1, \bar{y}_{t+1}^2) \tag{42}$$

$$\hat{S}^c(t, i, a_t, \bar{y}_r^1, \bar{y}_r^2, tr) = v^i(\hat{c}_t(\cdot), L^{i,j}, \eta_t^{i,j}) + \beta E_t S^c(t+1, i, \hat{a}_{t+1}(\cdot), \bar{y}_r^1, \bar{y}_r^2, tr) \tag{43}$$

$$\hat{V}^c(t, i, a_t, \epsilon_t^1, \epsilon_t^2, \bar{y}_t^1, \bar{y}_t^2) = (1 - \hat{D}_t(\cdot))\hat{N}^c(t, i, a_t, \epsilon_t^1, \epsilon_t^2, \bar{y}_t^1, \bar{y}_t^2) + \hat{D}_t(\cdot)\hat{S}^c(t, i, a_t, \bar{y}_r^1, \bar{y}_r^2, t).$$

$$\tag{44}$$

During the retirement period, we have

$$
\begin{aligned}
\hat{R}^c(t, i, a_t, \psi_t^1, \psi_t^2, \bar{y}_r^1, \bar{y}_r^2, tr) = {} & v^i(\hat{c}_t(\cdot), L^{i,j}, \eta_t^{i,j}) + \\
& \beta s_t^{i,j}(\psi_t^i) s_t^{p,j}(\psi_t^p) E_t \hat{R}^c(t+1, i, \hat{a}_{t+1}(\cdot), \psi_{t+1}^1, \psi_{t+1}^2, \bar{y}_r^1, \bar{y}_r^2, tr) + \\
& \beta s_t^{i,j}(\psi_t^i)(1 - s_t^{p,j}(\psi_t^p)) E_t R^s(t+1, i, \hat{a}_{t+1}(\cdot), \psi_{t+1}^i, \bar{\bar{y}}_r^i, tr),
\end{aligned}
\tag{45}
$$

where $s_t^{p,j}(\psi_t^p)$ is the survival probability of the partner of the person of gender i.

E.9 Estimation

We estimate the model by adopting a two-step estimation strategy (as Gourinchas and Parker (2002)). In the first step, we use data on the initial distributions at age 25 for our model's state variables and estimate or calibrate those parameters that can be cleanly identified outside our model.

In the second step, we use the MSM. We normalize the time endowment for single men and estimate 19 model parameters (β, ω, ($\phi_0^{i,j}, \phi_1^{i,j}, \phi_2^{i,j}$), ($\tau_c^{0,5}, \tau_c^{6,11}$), $L^{i,j}$). The data that inform the estimation of the parameters of our model are composed of the following 448 moments:

1. Labor market participation of married and single men and women age 25-65

2. Hours worked, conditional on working, for married and single men and women age 25-65

3. Wealth for couples and single men and women age 26-65.

Appendix F Selected Tax Reforms for the Representative Decision Unit

The Tax Reform Act of 1969. The effects of the Tax Reform Act of 1969 on tax rates for the representative decision unit fade within four years of its implementation. Panel (a) of Figure 16 shows that the average tax rate decreases every year between 1969 and 1971 at all income levels, stays constant between 1971 and 1972, and increases in 1973. Comparing the tax schedule between 1969 and 1973 shows

that the post-reform (1973) average tax rate is lower than the pre-reform one (1969) for incomes up to $200,000 and the same afterward. Panel (b) of Figure 16 presents the evolution of the marginal tax rate: it decreases markedly between 1969 and 1970 and remains stable between 1970 and 1972. Comparing 1969 and 1973, we see that the post-reform tax rate is very close to the pre-reform one, especially in the $75,000 to $175,000 income range.

(a) Average Tax Rate, RDU   **(b)** Marginal Tax Rate, RDU

Figure 16: Tax Reform Act of 1969, Average and Marginal Tax Rates. The panel on the left reports the average tax rate; and the panel on the right reports the marginal tax rate. Tax rates are reported as a function of pre-tax household income. We construct the representative decision unit (RDU) using household-level data and not distinguishing between household types.

The Economic Recovery Tax Act of 1981. The Economic Recovery Tax Act lowered income tax rates for the representative decision unit. Panel (a) of Figure 17 shows that the average tax rate decreases each year between 1981 and 1983, while it increases slightly between 1983 and 1984. Panel (b) of Figure 17 shows that the marginal tax rate follows similar dynamics: it decreases each year between 1981 and 1983 and is stable between 1983 and 1984.

The Tax Reform Act of 1986. The Tax Reform Act of 1986 lowered income tax rates for the representative decision unit even further than the Economic Recovery Tax Act of 1981 did. Panel (a) of Figure 18 shows that the average tax rate decreases between 1986 and 1987 and between 1987 and 1988. The reduction in the average tax rate between 1986 and 1987 is particularly visible for annual incomes greater than

(a) Average Tax Rate, RDU.

(b) Marginal Tax Rate, RDU.

Figure 17: Economic Recovery Tax Act of 1981, Average and Marginal Tax Rates. The panel on the left reports the average tax rate; the panel on the right reports the marginal tax rate. Tax rates are reported as a function of pre-tax household income.

$100,000, while the decrease between 1987 and 1988, although of smaller magnitude, is observable across all income levels. Panel (b) of Figure 18 shows that the marginal tax rate decreases for all income levels between 1986 and 1988.

(a) Average Tax Rate, RDU.
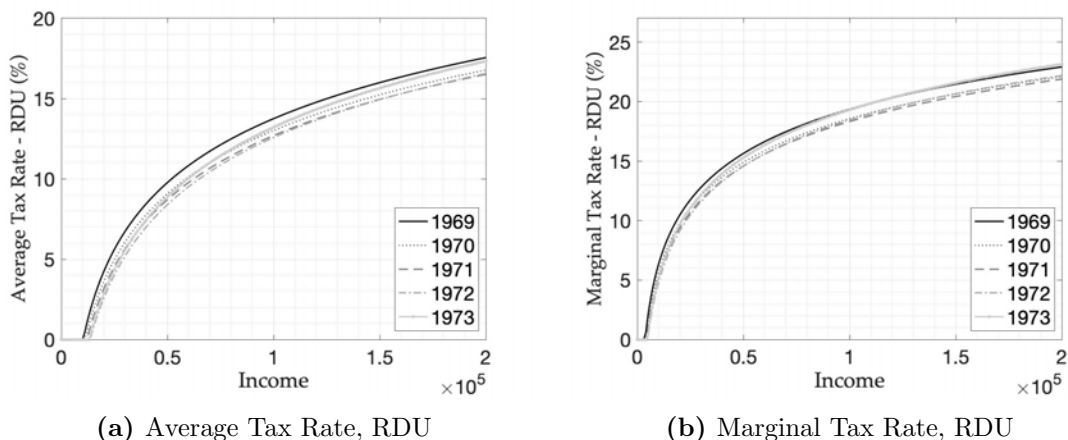
(b) Marginal Tax Rate, RDU.
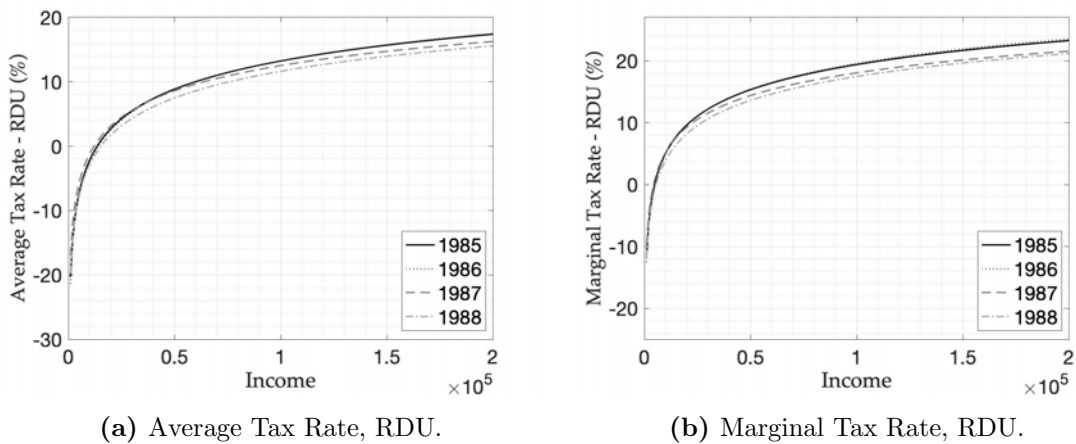
Figure 18: Tax Reform Act of 1986, Average and Marginal Tax Rates. The panel on the left reports the average tax rate; the panel on the right reports the marginal tax rate. Tax rates are reported as a function of pre-tax household income. We construct the representative decision unit using household-level data and not distinguishing between household types.

The Omnibus Budget Reconciliation Act of 1990. The Omnibus Budget Reconciliation Act of 1990 increased income tax rates for the representative decision unit. Panel (a) and Panel (b) of Figure 19 show that the average and marginal tax rates increase at all income levels between 1990 and 1991.

(a) Average Tax Rate, RDU.   (b) Marginal Tax Rate, RDU.

Figure 19: Omnibus Budget Reconciliation Act of 1990, Average and Marginal Tax Rates. The panel on the left reports the average tax rate; the panel on the right reports the marginal tax rate. Tax rates are reported as a function of pre-tax household income.

The Omnibus Budget Reconciliation Act of 1993. Despite President Clinton's goal of raising taxes, the Omnibus Budget Reconciliation Act did not significantly affect income tax rates for the representative decision unit. Panel (a) and Panel (b) of Figure 20 show that the average and marginal tax rates are unchanged between 1992 and 1993.

The Economic Growth and Tax Relief Reconciliation Act of 2001 and the Jobs and Growth Tax Relief Reconciliation Act of 2003. The Economic Growth and Tax Relief Reconciliation Act decreased income tax rates for the representative decision unit. In contrast, the Jobs and Growth Tax Relief Reconciliation Act did not affect income taxes. Panel (a) and Panel (b) of Figure 21 show that the average and marginal tax rates drop between 2002 and 2004 but are the same between 2004 and 2006.

(a) Average Tax Rate, RDU.　　　　**(b)** Marginal Tax Rate, RDU.

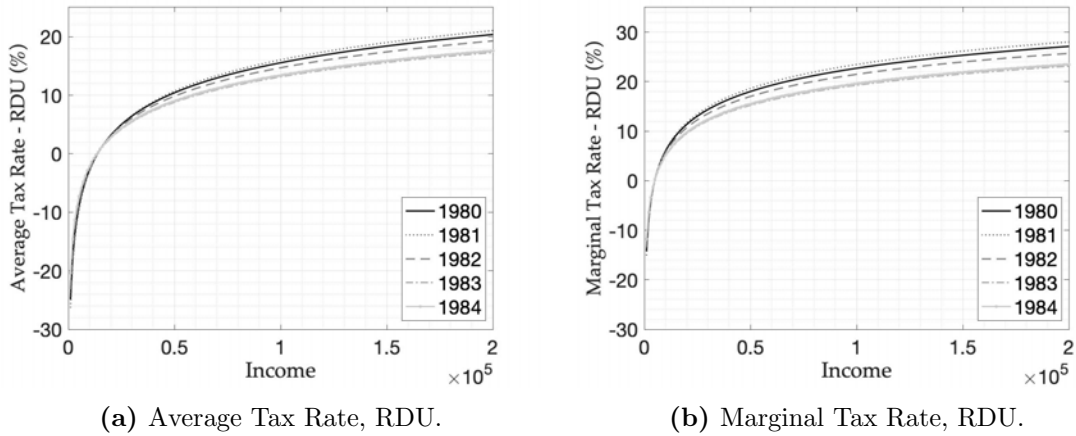**Figure 20:** Omnibus Budget Reconciliation Act of 1993, Average and Marginal Tax Rates. The panel on the left reports the average tax rate; the panels on the right reports the marginal tax rate. Tax rates are reported as a function of pre-tax household income. We construct the representative decision unit using household-level data and not distinguishing between household types.
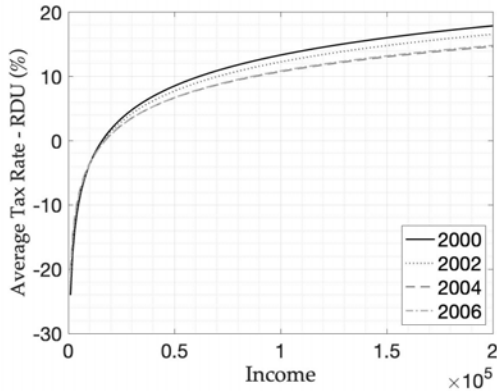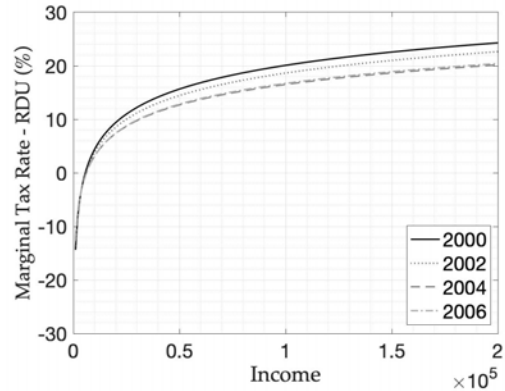
(a) Average Tax Rate, RDU.　　　　**(b)** Marginal Tax Rate, RDU.

**Figure 21:** Economic Growth and Tax Relief Reconciliation Act of 2001 and Jobs and Growth Tax Relief Reconciliation Act of 2003, Average and Marginal Tax Rates. The panel on the left reports the average tax rate; the panel on the right reports the marginal tax rate. Tax rates are reported as a function of pre-tax household income. We construct the representative decision unit using household-level data and not distinguishing between household types.

The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010. The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 slightly increased the representative decision unit's average tax rate and kept its marginal tax rate stable. Panel (a) of Figure 22 shows that

the average tax rate increases slightly between 2010 and 2012, especially for incomes lower than $100,000 a year. Panel (b) of Figure 22 shows that the marginal tax rate is roughly the same in 2010 and 2012.

(a) Average Tax Rate, RDU.

(b) Marginal Tax Rate, RDU.
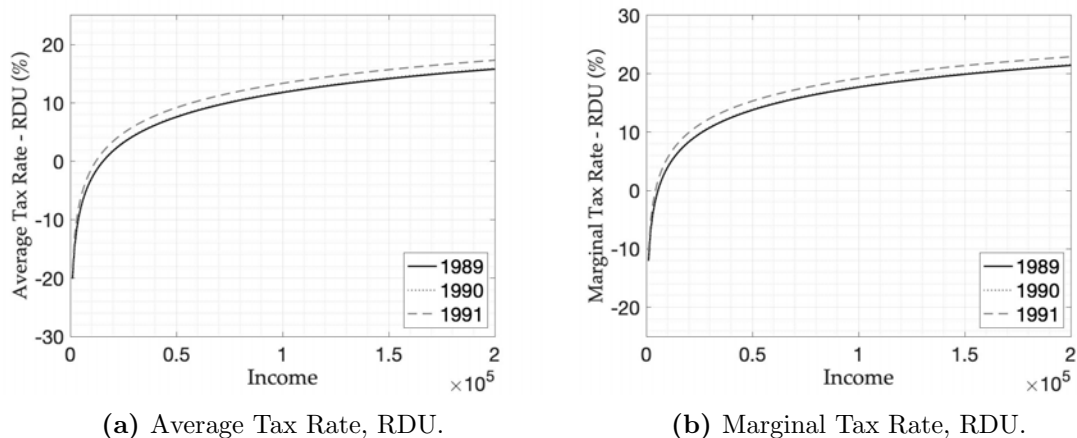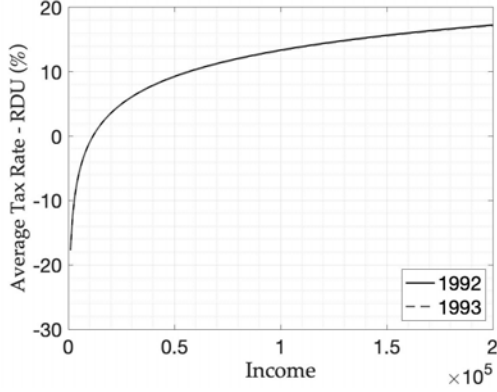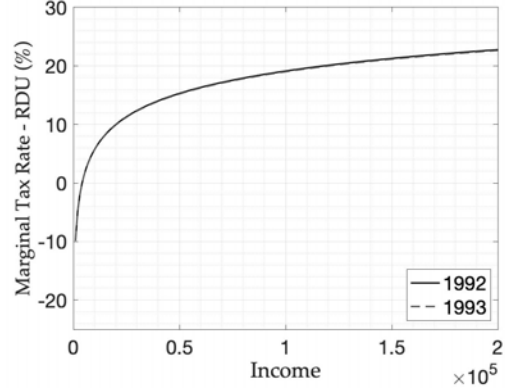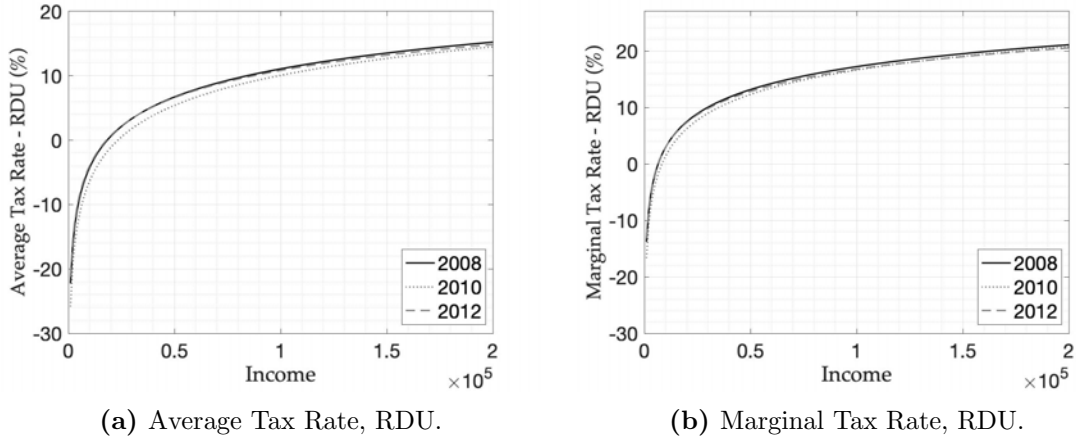
Figure 22: Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, Average and Marginal Tax Rates. The panel on the left reports the average tax rate; the panel on the left reports the marginal tax rate. Tax rates are reported as a function of pre-tax household income. We construct the representative decision unit using household-level data and not distinguishing between household types.

Online Appendix: A History of Major Changes in the US Tax Law, 1962-2018

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Nicolò Russo, and Fang Yang

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4

Introduction

Our main goal in writing this document is to provide additional background that helps understand how and why taxes on household income have changed over time in the United States during the time period covered by the Panel Study of Income Dynamics (PSID). As a result, this document covers the history of tax code changes since the 1960s and focuses on individual income taxation. It includes summaries of the relevant provisions of each tax law and some history, including the main rationales given for adopting the law. We do not discuss some laws (and some provisions within the laws that we discuss) because we do not deem them to be relevant. The Tax Policy Center's website ("Laws & Proposals," n.d.) is the main source for this document.

1 President Lyndon B. Johnson (1963-1969)

1.1 1964 Revenue Act

While there were no major tax policy changes during Kennedy's time as president, Kennedy did set the stage for the first major tax reform passed during the tenure of his successor, President Lyndon B. Johnson. Kennedy was a proponent of what would eventually be passed posthumously as the Revenue Act of 1964. In his 1963 State of the Union, Kennedy said, "if we are to prevail in the long run, we must expand the long-run strength of our economy." To do this, he called for "a substantial reduction and revision in Federal income taxes," which he said would "increase the purchasing power of American families and business enterprises in every tax bracket, with greatest increase going to our low-income

consumers" and "encourage the initiative and risk-taking on which our free system depends—induce more investment, production, and capacity use—help provide the 2 million new jobs we need every year—and reinforce the American principle of additional reward for additional effort." He called for, among other changes, lowering the marginal individual income tax brackets from their range of "20 and 91 percent, to a more sensible range of 14 to 65 percent" (Kennedy 1963a).

Kennedy's focus on the benefits of a tax cut was reiterated in a speech on September 18, 1963, in which he argued that following a tax cut, "as the national income grows, the federal government will ultimately end up with more revenues" (Kennedy 1963b).

After Kennedy's assassination, President Johnson advocated for the passage of the act. In Johnson's 1964 State of the Union, perhaps best known for his declaration of an "unconditional war on poverty in America," Johnson also pressed Congress for swift passage of the act: "The new budget clearly allows it [the act]. Our taxpayers surely deserve it. Our economy strongly demands it. And every month of delay dilutes its benefits in 1964 for consumption, for investment, and for employment" (Johnson 1964). Ultimately, "the President signed [the bill] on February 26, 1964" (Morrison 2013). Romer and Romer (2009) summarize the rationale for this act as "faster long-run growth" (38).

The Revenue Act of 1964 as actually enacted differs slightly from Kennedy's initial 1963 proposal. A main change the law instigated was the lowering of individual income tax. In 1964, there was a change featuring "individual rates starting at 16% and rising to a top of 77% (instead of prior rates of 20% to 91%)... On January 1, 1965, the second and final step of the bill goes into effect. Individual rates drop to a 14% starting point and range to a maximum of 70%" (Caplin 1964, 858).

The exact changes in the marginal individual income tax brackets are shown in more detail in the tables in Appendix A, including the tax rates for married and single people.

Apart from this change, the act contained "a series of 'base-broadening' amendments, i.e., provisions which limit special deductions or which tax on the same basis varying types of income, regardless of their source" (Caplin 1964, 860). In addition, the act made changes to the computation of the standard deduction:

> Under preexisting provisions a taxpayer was given the option of itemizing and deducting his "other" deductions or taking a standard deduction of 10 percent of his adjusted gross income. The standard deduction was limited to $1,000 except in the case of married persons filing separate returns where the ceiling on the standard deduction was $500 for each spouse. The 1964 Act provides that the taxpayer who elects the standard deduction shall deduct the larger of the 10 percent deduction or a new minimum standard deduction of $200 ($100 in the case of a married person filing a separate return), plus $100 times the number of exemptions claimed by the taxpayer. The ceilings for the minimum standard deduction are the same as the ceilings on the 10 percent deduction. (Lowndes 1964, 691)

1.2   1968 Revenue and Expenditure Control Act

By 1967, the Vietnam War was happening, with an estimated "485,000 American troops in Vietnam" at the time that President Johnson gave his State of the Union address on January 10 (Glass 2019). In his address, Johnson asked Congress to pass "a surcharge of 6

percent on both corporate and individual income taxes—to last for 2 years or for so long as the unusual expenditures associated with [the U.S.'s] efforts in Vietnam continue" (Johnson 1967a). Johnson also proposed some exemptions for lower-income taxpayers. Johnson framed this tax increase as simply a partial reversal of the tax cuts from the Revenue Act of 1964 "in order to try to hold our budget deficit in fiscal 1968 within prudent limits and to give our country and to give our fighting men the help they need in this hour of trial" (Johnson 1967a).

This proposal was revised by Johnson in his "Special Message to Congress: The State of the Budget and the Economy," on August 3, 1967, in which he said that federal government outlays in fiscal year 1968 might be higher than expected and that revenues would be lower than expected "even with a 6% tax surcharge." Johnson therefore called for a "three point tax program" consisting of "extending these excise taxes" on "automobiles" and "telephone service," a "temporary surcharge of 10%. . . on corporate income tax liabilities, effective July 1, 1967," and a "temporary surcharge of 10%. . . on individual income tax liabilities, effective October 1, 1967." The last two "would expire on June 30, 1969, or continue for so long as the unusual expenditures associated with our efforts in Vietnam require higher revenues." As in his 1967 State of the Union, Johnson billed this tax increase as simply a partial reversal of the tax cuts from the Revenue Act of 1964, albeit a slightly higher one (Johnson 1967b).

In his State of the Union on January 17, 1968, Johnson cited avoiding inflation as a primary reason for passing the new tax bill. He said, "I warn the Congress and the Nation tonight that this failure to act on the tax bill will sweep us into an accelerating spiral of price increases, a slump in homebuilding, and a continuing erosion of the American dollar" (Johnson 1968). Consistently, Romer and Romer (2009) categorize the impetus for this act

as "to prevent the economy from overheating" (48).

Ultimately, "the Revenue and Expenditure Control Act of 1968 was signed into law by the President on June 28" (Okun 1971, 169).

As actually in practice, due to extensions by later tax reforms, the surcharge was 7.5% of annual tax liability in 1968, 10% in 1969, and 2.5% in 1970. In addition, the surcharge was phased in. For example, in 1968, people filing as single or married filing separately paid no surcharge if their tax amount was less than $148, while people filing married filing jointly paid no surcharge if their tax amount was less than $293. The 7.5% surcharge rate applied to the (entire) tax amount if the tax amount was $734 or more. The surcharge was enacted by the Revenue and Expenditure Control Act of 1968 and extended by Public Law 91-53 and the Tax Reform Act of 1969 (Internal Revenue Service 1968, 1970; "Text - H.R.9951" 1969; Staff of the Joint Committee on Taxation 1970).[1]

2 President Richard M. Nixon (1969-1974)

2.1 1969 Tax Reform Act

President Nixon pushed for tax reform in a "Special Message to the Congress" on April 21, 1969, saying that "we must reform our tax structure to make it more equitable and efficient; we must redirect our tax policy to make it more conducive to stable economic growth and responsive to urgent social needs." He called for changes such as "a 'minimum income tax' for citizens with substantial incomes," the "enactment of a 'low income allowance'" to "assure that persons or families in poverty pay no Federal income taxes," and a combination

1. For more details on the Tax Reform Act of 1969, see Section 2.1.

of "investment tax credit repeal" and the "extension of the full surcharge [of 10% from the Revenue and Expenditure Control Act of 1968] only to January 1, 1970, with a reduction to 5% on January 1" (Nixon 1969a).

Both branches of Congress were controlled by the Democrats ("91st Congress (1969-1971)," n.d.; "Complete List of Majority and Minority Leaders," n.d.). Once Congress actually started working on the legislation, the actual bill appears to have shifted from Nixon's intentions. On October 12, 1969, Nixon said, "I ask that Congress not convert this historic tax reform legislation into a sharp tax reduction that would unbalance the federal budget and neutralize our campaign to halt the rising cost of living" ("Text of Nixon's Message on Legislative Programs" 1969). Nixon's signing statement on December 30, 1969 was ambivalent, saying that "Congress has passed an unbalanced bill that is both good and bad. The tax reforms, on the whole, are good; the effect on the budget and on the cost of living is bad" (Nixon 1969b).

The Tax Reform Act contained numerous provisions that directly affected individual income taxes. We separate these provisions into three main areas: (1) general tax changes, (2) exemptions and deductions, and (3) miscellaneous.

With respect to the first area, the Tax Reform Act of 1969 enacted "a new rate schedule for single persons under which the tax is no more than 20% greater than that paid on a joint return with the same amount of taxable income, and a new rate schedule for heads of households halfway between the single persons and the joint return schedules" (Weiss 1970, 975). These measures began in 1971. This change can be seen in Appendix B, which also shows tax brackets for married people and singles.

In addition, the tax surcharge established in the Revenue and Expenditure Control Act

of 1968 was extended such that there would be a surcharge of 2.5% of 1970 tax liability (Staff of the Joint Committee on Taxation 1970, 186).

The law also adjusted "the top bracket for [earned] income to 50%" for "taxable years beginning after December 31, 1970" (Weiss 1970, 975–6).

An important change the Tax Reform Act of 1969 made was that it "established individual and corporate minimum taxes" ("Major Enacted Tax Legislation, 1960-1969," n.d.). This was a precursor to the modern Alternative Minimum Tax (AMT). This tax "was an add-on minimum tax. That is, it was a tax that was paid in addition to the regular income tax. The tax rate for the add-on minimum tax was 10% and the tax base consisted of eight tax preference items, the most significant of which was the portion of capital gains income that was excluded from tax under the regular income tax" (Maguire 2012, 1).

The second major area of changes concerns exemptions and deductions. Table 1 summarizes the changes the law made to the personal exemption and the standard deduction to the personal exemption and the standard deduction, as described in Weiss (1970).

Table 1: Information about personal exemption and standard deduction changes under the Tax Reform Act of 1969, as described in Weiss (1970). **Note that the changes described in this table do not necessarily represent the tax law changes that would be actually implemented, as the Revenue Act of 1971 would modify some of them (see Section 2.2).**

	Before 1970	1970	1971	1972	After 1972
Personal Exemption (per dependent)	$600	$625[2]	$650	$700	$750
Standard Deduction percentage of AGI	10%	10%	13%	14%	15%
Standard Deduction ceiling	$1,000	$1,000	$1,500	$2,000	$2,000

Weiss (1970) also describes the low-income allowance as follows: "Under prior law, a minimum standard deduction was allowed of $200 plus $100 for each personal exemption.

2. "The new law increases the personal exemption to $625 for calendar year 1970, (by increasing it to $650 on July 1, 1970 for withholding purposes)" (Weiss 1970, 975).

Under the new legislation [the Tax Reform Act of 1969], a low-income allowance is substituted for the minimum standard deduction. For 1970, the low income allowance is $1,100, with the excess over the present minimum standard deduction being reduced $1 for every $2 of income above the new nontaxable levels. For 1971, the low-income allowance is $1,050, with the excess over the present minimum standard being reduced $1 for every $15 of income above the new non-taxable levels. For 1972 and thereafter, the low-income allowance is $1,000 with no reduction."

The low income allowance appears to be slightly different for those filing as married filing separately. The act states that "in the case of a married taxpayer filing a separate return—the low income allowance is an amount equal to the basic allowance, and the basic allowance is an amount (not in excess of $500) equal to the sum of—$100, plus $100, multiplied by the number of exemptions" (*Tax Reform Act of 1969* 1969, 677).

Finally, there were many additional miscellaneous provisions in the law; for example, it repealed the investment tax credit ("Major Enacted Tax Legislation, 1960-1969," n.d.).

Many sources have pointed out the role of the Tax Reform Act of 1969 in creating or enlarging the marriage penalty (see, e.g., Richards 1970; Pignataro 2015; Gerzog 1978). For example, Richards (1970) points out that provisions such as "the substitution of a low income allowance for the old minimum standard deduction" (301), "the implementation of a higher standard deduction ceiling" (303), and "the enactment of a lower tax rate schedule for single persons" (303) contributed to this.

2.2   1971 Revenue Act

In a speech on August 15, 1971, amidst growing economic problems including "unemployment, inflation, and international speculation," Nixon said that "prosperity without war requires action on three fronts: We must create more and better jobs; we must stop the rise in the cost of living; we must protect the dollar from the attacks of international money speculators." He called for, among other policy changes, changes to tax policy such as "speed[ing] up the personal income tax exemptions scheduled for January 1, 1971 to January 1, 1972" (Nixon 1971a). According to Romer and Romer (2009)'s classification, this act "was designed to raise growth above normal, and thereby lower unemployment" (55).

In contrast to the Tax Reform Act of 1969, Nixon appears to have viewed the final bill of this tax reform more favorably. He said on October 6, 1971, that "today's vote by the House of Representatives in favor of the tax bill reflects an overwhelming national will for prompt legislative measures to stimulate the economy, create jobs, and halt inflation" (Nixon 1971c), and said on December 10, the day of the signing, that the final bill "is the kind of Christmas bill we like to get" (Nixon 1971b).

According to the Joint Committee on Internal Revenue Taxation, the act also "increased the personal exemption to $675 for 1971 and removed the 'phaseout' on the low-income allowance, making it a flat $1,050, to provide tax relief to lower income taxpayers for 1971" (Staff of the Joint Committee on Internal Revenue Taxation 1972, 49).

For 1972 and beyond, the law "increased the amount of the personal exemption (and the gross income limit in the case of a dependent)" (50) and allowed for "a low-income allowance of $1,300 and a percentage standard deduction of 15 percent of adjusted gross

income with a $2,000 ceiling" (Married taxpayers filing separate returns could claim "a low-income allowance of $650 each or a maximum percentage standard deduction of $1,000 each") (51).

3 President Gerald R. Ford (1974-1977)

3.1 1975 Tax Reduction Act

In his 1975 State of the Union address, President Ford laid out a grim outlook for the United States. He summarized that "the state of the Union is not good," saying that "the emphasis on our economic efforts must now shift from inflation to jobs." He called for both a temporary "1-year tax reduction of $16 billion" of which "three-quarters would go to individuals and one-quarter to promote business investment" and a more permanent measure to "primarily benefit lower- and middle-income taxpayers" by "raising the low-income allowance and reducing tax rates" (Ford 1975a).

Once the bill passed Congress, President Ford signed the Tax Reduction Act on March 29, 1975 ("Actions Overview H.R.2166" 1975). He did so reluctantly, saying that "the most troublesome defect of this bill is the fact that the Congress added to an urgently needed anti-recession tax reduction a lot of extraneous changes in our tax laws, some well-intentioned but very ill-considered." However, he concluded that "any damage the [bill] do[es] is outweighed by the urgent necessity of an anti-recession tax reduction right now" (Ford 1975b, 320). Shabecoff in the *New York Times* commented, "In the inflated dollars of 1975, the tax cut is the biggest in history, but it does not come close to being the biggest by any other test"

(Shabecoff 1975). Meeropol (2001) argues that the law "was targeted at low- and moderate-income families and helped to stimulate private consumption, putting the economy back on its feet." According to Romer and Romer (2009), the impetus for this act was "to try to return economic growth to normal" from its "weak" position at the time (58).

The bill contains five main relevant provisions, all of which were temporary. First, it introduced a 10 percent rebate on the 1974 taxes, of which the minimum rebate amount would be the lesser of the 1974 tax liability and "$100 ($50 in the case of a married individual filing a separate return)," and the maximum possible payment would be "$200 ($100 in the case of a married individual filing a separate return)" in most cases (*Tax Reduction Act of 1975* 1975).

The second through fifth provisions were all in effect only for 1975. The second provision was an increase in the "low income allowance" to $1,900 for married couples filing jointly or "a surviving spouse," $1,600 for singles, and $950 "in the case of a married individual filing a separate return" (*Tax Reduction Act of 1975* 1975).

The third provision was an "increase in [the] percentage standard deduction" that made it "an amount equal to 16 percent of adjusted gross income but not to exceed" $2,600 for married couples filing jointly or "a surviving spouse," $2,300 for singles, and $1,300 "in the case of a married individual filing a separate return" (*Tax Reduction Act of 1975* 1975).

The fourth provision was a nonrefundable general tax credit of $30, "multiplied by each exemption for which the taxpayer is entitled for the taxable year" (*Tax Reduction Act of 1975* 1975).

The fifth relevant provision was the introduction of the Earned Income Tax Credit (EITC) (the name for it at the time was the "Earned Income Credit"). If a person's earned income

was \$4,000 or below, the credit amount was 10% of earned income; the credit amount would decrease for incomes in the range \$4,000 to \$8,000 and would be \$0 for incomes of \$8,000 or above (Internal Revenue Service 1975). To be eligible for the EITC, taxpayers had to meet certain requirements, such as having children (Internal Revenue Service 1975). In addition, although married taxpayers generally had to file a joint return to claim the credit, "certain married persons living apart with a dependent child" were also "eligible to claim the credit" (8).

3.2   1975 Revenue Adjustment Act

After passing the Tax Reduction Act of 1975, on December 23, 1975, President Ford signed the Revenue Adjustment Act of 1975 (Congress.gov 1975). In general, this act extended "through the first six months of 1976, with some significant modifications and expansions, the individual and corporate tax reductions that have been in effect for 1975" (Shanahan 1975). However, all of the provisions of the 1975 Revenue Adjustment Act appear to have been rendered moot or superseded by the Tax Reform Act of 1976.

Despite this, we report, for reference, that the provisions of this act stated that "from January 1, 1976 through June 30, 1976, the minimum standard deduction (low-income allowance) shall be \$1,500 for single persons and \$1,700 for joint returns." It said that "the percentage standard deduction shall be 16 percent to a maximum of \$2,200 for single persons and \$2,400 for joint returns" and approved "an earned income credit equal to five percent of the first \$4,000 of earnings for the taxable year." The act also extended the general tax credit to 1976, except that the calculation mechanism was "one percent of income not exceeding

$4,500, or $17.50" (Congress.gov 1975).

3.3 1976 Tax Reform Act

In his 1976 State of the Union, Ford gave a more optimistic evaluation of the country, saying that "the state of our Union is better–in many ways a lot better–but still not good enough." He said, "By holding down the growth of Federal spending, we can afford additional tax cuts and return to the people who pay taxes more decisionmaking power over their own lives" (Ford 1976a).

As with the Tax Reduction Act of 1975, Ford was reluctant to sign the Tax Reform Act of 1976, although the reasons for his disagreement were slightly different. In his signing statement, Ford said, "On balance, the beneficial effects of good provisions in this massive piece of legislation substantially outweigh the detrimental effects of the provisions which I find objectionable." He also said, "This act does temporarily continue the tax reductions enacted last year, but it fails to include my proposals for permanent, deepened tax cuts" (Ford 1976b). President Ford signed the act into law on October 4, 1976 ("Actions Overview H.R.10612" 1976).

A report by the Joint Committee on Taxation said that some of the goals of the act were to "improve the equity of the tax system at all income levels without impairing economic efficiency and growth," add "important simplifications of the tax system," "extend the fiscal stimulus" of the two tax acts in 1975, and "make a major revision in the estate and gift taxes" (Staff of the Joint Committee on Taxation 1976, 1). Romer and Romer (2009) similarly state that the impetus for this act "was clearly improved efficiency and equity" (60).

The act contained five main provisions. The first and second were changes to the standard deduction. The Joint Committee on Taxation stated that

> the Act permanently increases the minimum standard deduction (or low-income allowance) from $1,300 to $1,700 for single returns and to $2,100 for joint returns. It increases the percentage standard deduction from 15 percent to 16 percent. Also, it increases the maximum standard deduction from $2,000 to $2,400 for single returns and to $2,800 for joint returns....This increase in the standard deduction represents a major simplification of the individual income tax, since it will make it worthwhile for filers of 9 million tax returns to switch to the standard deduction. (Staff of the Joint Committee on Taxation 1976, 9)

Third, the committee's report goes on to note that the act "extends through 1977 the general tax credit for individuals adopted in the Revenue Adjustment Act...This credit equals the greater of $35 for each taxpayer and dependent or 2 percent of the first $9,000 of taxable income" (10). Fourth, the act contained "an extension of the earned income credit through 1977" (9). Fifth, there were changes to the Alternative Minimum Tax. The report states that "the Act raises the minimum tax rate from 10 percent to 15 percent. In place of the existing $30,000 exemption and the deduction for regular income taxes, the Act has an exemption for individuals equal to one-half of regular income taxes or $10,000, whichever is greater" (3).

Apart from these provisions, there are some others. For example, the act "created [a] unified rate schedule for estate and gift taxes with [a] $175,000 exemption" and "increased [the] long-term capital gains holding period from 6 months to 1 year" ("Major Enacted Tax

18

Legislation, 1970-1979," n.d.). In addition, the law made "major changes in the treatment of child and dependent care expenses," turning them from an "itemized deduction, subject to some complicated limitations" to "a 20-percent credit, so that [the credit would] be available to those who use the standard deduction as well as to itemizers and so that it [would] provide the same tax relief to taxpayers in low brackets as to those in high brackets" (Staff of the Joint Committee on Taxation 1976, 7). This new credit was nonrefundable (Internal Revenue Service 1976a). It applied beginning in 1976 (Internal Revenue Service 1976b).

4 President Jimmy Carter (1977-1981)

Carter entered office in January 1977 amidst problems with stagflation: the combination of high unemployment and high inflation. During the presidential campaign, Carter had mentioned tax policy. For example, during his acceptance speech at the 1976 Democratic National Convention, he said, "It is time for a complete overhaul of our income tax system. I still tell you: It is a disgrace to the human race" (Carter 1976).

4.1 1977 Tax Reduction and Simplification Act

Carter's initial proposal focused in part on "[a] one-shot, $50 tax rebate to virtually all taxpayers," in addition to "direct spending for job creation" and "build[ing] the standard personal deduction...right into the tax tables so as to simplify tax calculation for the majority of taxpayers" (Kantowicz 1985, 223). In a televised speech on February 2, 1977, Carter argued that "these one-time tax rebates are the only quick, effective way to get money into the economy and create those jobs." He also said in that speech that "reducing taxes

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permanently by increasing the standard deduction...will also be a major step toward tax simplification, allowing 75 percent of all taxpayers to take the standard deduction and to file a very simple tax return" (Carter 1977a). Ultimately, a legislative impasse, combined with Carter's changes to the initial proposal, would lead to delays in the passage of the bill (Kantowicz 1985).

At the bill's signing ceremony on May 23, 1977, Carter summarized that the main stated goals of the bill were "to greatly simplify the income tax codes of our Nation, to provide greater equity and, also, substantially to reduce taxes among our people" (Carter 1977b). Romer and Romer (2009)'s view is that that this act "was designed to raise growth above normal and reduce the unemployment rate" (62).

The bill contained three main provisions related to individual income taxes. First, it removed "the standard deduction, replacing it with a zero bracket amount which is incorporated in the tax tables" and put "the zero bracket amount (effectively the equivalent of a flat standard deduction) at \$3,200 for joint returns and surviving spouses, \$2,200 for unmarried individuals, \$1,600 for married individuals filing separately, and zero in any other case." Second, it extended "the general tax credit to taxable years beginning before 1978, and the earned income credit to taxable years beginning before 1979." Third, it increased "the income level at which a tax return must be filed to \$2,950 for a single person and \$4,700 for a joint return" and reduced "the withholding of wages beginning June 1, 1977" (Congress.gov 1977).

Because of these provisions, particularly the first one, directly comparing the 1976 and 1977 marginal individual income tax tables in the "Federal Individual Income Tax Rates History" document (Tax Foundation 2013) may create the misleading impression that taxes

were considerably reduced, especially for lower-income individuals. However, it is important to note that from 1977 onward, the standard deduction was, in effect, incorporated into these tables (instead of being considered separately), making it appear that there was a sudden reduction in marginal tax rates. The practice of incorporating the standard deduction in these tables as a 0 percent bracket would be discontinued after the 1986 tax tables (Tax Foundation 2013).

4.2   1978 Revenue Act

In his 1978 State of the Union address, President Carter signaled his intent to push for further tax reform. He said, "Our main task at home this year, with energy a central element, is the Nation's economy. We must continue the recovery and further cut unemployment and inflation." As a rationale for his tax reform plans, he said, "We can make our tax laws fairer, we can make them simpler and easier to understand, and at the same time, we can—and we will—reduce the tax burden on American citizens by \$25 billion" (Carter 1978). Overall, Romer and Romer (2009) categorize the impetus for this act as a "desire to raise real growth from normal to above normal" (64).

On November 6, 1978, President Carter signed the Revenue Act (Congress.gov 1978). We divide the act's major relevant provisions into four sections: (1) changes to individual income taxes, (2) tax credits, (3) capital gains changes, and (4) deductions.

Changes to individual income taxes took effect starting in 1979. Briner (1979) notes that the "number of brackets has been decreased [from 25] to fifteen for joint and sixteen for single returns. The tax rates still range from a low of 14% to a high of 70%; however,

the rationale for the change is to prevent higher earnings due to inflation from being pushed into higher tax brackets" (Briner 1979, 530). Moreover, "the personal exemption for each taxpayer and his dependents has been increased from $750 to $1,000. This increase also affects additional exemptions for blindness and those over age 65" (530-1). In addition, "the zero bracket amount which replaced the standard deduction has been increased" (530), see Table 2.

Table 2: Upper Bound of Zero Percent Tax Bracket, 1978-79. Reprinted from Briner 1979, 530.

	1978	1979
Single taxpayer	2,200	2,300
Married taxpayer filing jointly	3,200	3,400
Married taxpayer filing separately	1,600	1,700
Surviving spouse	3,200	3,400

The changes to the zero percent tax bracket and other changes to and features of the marginal tax brackets, such as those for married people versus singles, are in Appendix C.

The second major area of change is tax credits. The Revenue Act made many miscellaneous changes to tax credits, such as "[providing] for a 15% tax credit on the first $2,000, limited to the taxpayer's tax liability, energy conserving expenditures which have an expected life of at least three years" (540). Furthermore, "the general tax credit which was introduced into the Code in the Tax Reduction Act of 1975 as an antirecession measure was eliminated" (543). This was the fourth provision discussed in Section 3.1.

In addition, the Earned Income Tax Credit "was made permanent....The earned income credit for 1979 and thereafter is equal to 10% of the first $5,000 of an individual's earned taxable income. However, to the extent the individual's income exceeds $6,000, the credit will be reduced by 12.5% of the amount by which his earned income exceeds $6,000" (543).

The third category of provisions is changes to the treatment of capital gains. For example, the "capital gains exclusion" was "increased...from 50% to 60%" ("Major Enacted Tax Legislation, 1970-1979," n.d.). In addition, the act created a new, second system for calculating the Alternative Minimum Tax. The system was implemented in 1979. Briner (1979) describes it in the following way: "The alternative minimum tax is computed by adding taxable income, long-term capital gain preferences and adjusted itemized deduction preferences and subtracting from that amount a $20,000 exemption to determine the base amount. The base amount of the taxable income is then subject to the following [marginal] tax rates:

- $1 to $40,000: 10%

- $40,001 to $80,000: 20%

- $80,000 and above: 25%

The taxpayer compares the alternative minimum tax to his regular tax, and pays whichever is higher, but not both" (535). Note that "if married filing separately or an estate or trust," the exemption amount would be $10,000, not $20,000, and the income cutoffs in the marginal tax brackets above would be cut in half (Internal Revenue Service 1979).

This new system "was an entirely new tax" and not just a revision of the AMT system created in 1969; as such, "between [1979] and 1982, individuals were subject to both the add-on minimum tax and the alternative minimum tax" (Maguire 2012, 2).[3]

3. Note: the original quote from Maguire (2012) says 1978, but Briner (1979) and Congress.gov (1978) say that the new AMT system starts in 1979. Thus, we add brackets to the quote from Maguire to reflect the information from Briner.

The fourth category of changes is deductions. There were many changes to allowable itemized deductions. One notable example prohibited deductions "for expenses incurred in connection with an entertainment facility" (Briner 1979, 516). In addition, the act "repealed [the] nonbusiness deduction for state and local gasoline taxes" ("Major Enacted Tax Legislation, 1970-1979," n.d.).

5 President Ronald Reagan (1981-1989)

5.1 1981 Economic Recovery Tax Act (ERTA)

When President Reagan entered office in January 1981, there were many economic problems, including stagflation. In a televised address from the White House on February 5, 1981, he delineated these problems, which included the federal government deficit, high inflation rates, high interest rates, high unemployment, burdensome regulations, low productivity growth, and "excessive taxation of individuals." He said that "we must go forward with a tax relief package" (Reagan 1981b).

Reagan outlined a more detailed version of his policy proposal in a speech before Congress on February 18, in which he was "proposing a comprehensive four-point program" regarding the economy, including welfare reform and more state and local control of programs like Medicaid. As part of his economic policy proposal, he called for an individual income tax cut, saying, "It's time to create new jobs, to build and rebuild industry, and to give the American people room to do what they do best." While he called other tax reforms "desirable and needed," he said that "our program for economic recovery is so urgently needed to begin to

bring down inflation that I'm asking you to act on this plan first and with great urgency" and focus on these other tax reforms later (Reagan 1981a). In another address before Congress on April 28, Reagan urged Congress to act, saying, "High taxes and excess spending growth created our present economic mess; more of the same will not cure the hardship, anxiety, and discouragement it has imposed on the American people." He framed his tax proposal as follows: "A gigantic tax increase has been built into the system. We propose nothing more than a reduction of that increase. The people have a right to know that even with our plan they will be paying more in taxes, but not as much more as they will without it" (Reagan 1981c).

Romer and Romer (2009) state that the motivations for this act on the presidential side were focused around "the ideological motivation of reducing the role of the federal government" and "long-term reasons," not short-term ones (68). On the congressional side, they write that ideological, long-term, and, to a lesser extent, short-term considerations drove the act (69).

President Reagan signed the ERTA on August 13, 1981, roughly three weeks after its initial introduction in the House of Representatives (Congress.gov 1981). At the time, the House was controlled by Democrats ("97th Congress (1981-1983)," n.d.), and the Senate was controlled by Republicans ("Complete List of Majority and Minority Leaders," n.d.).

The provisions of the ERTA are numerous and significant. The Joint Committee on Taxation (1981) summarizes three major ones:

Individual tax rates

"The Act provides cumulative across-the-board reductions in individual income

tax rates of 1 $\frac{1}{2}$ percent in 1981, 10 percent in 1982, 19 percent in 1983, and 23 percent in 1984 and subsequent years. These tax reductions will be reflected in reductions in withholding on October 1, 1981, July 1, 1982, and July 1, 1983. The top marginal tax rate is reduced from 70 percent to 50 percent beginning January 1, 1982. The maximum tax rate on long-term capital gains is reduced to 20 percent for sales or exchanges after June 9, 1981" (5).

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"The Act adjusts the income tax brackets, zero bracket amount, and personal exemption for increases in the consumer price index, starting in 1985. The first adjustment, for 1985 tax returns, will be based on price increases between fiscal year 1983 and fiscal year 1984" (5).

Deduction for two-earner married couples

"The Act allows a two-earner married couple filing a joint return a new deduction in computing adjusted gross income. This deduction equals a percentage of the first \$30,000 of qualified income earned by whichever spouse has the lower amount of earnings. In 1982, the percentage will be five percent (\$1,500 maximum deduction). In 1983 and subsequent years, the percentage will be ten percent (\$3,000 maximum deduction)" (5).

Esenwein (2001) says that the "two-earner marital deduction helped to reduce the marriage tax penalties faced by some two-earner married couples, but it did not eliminate the penalties for all couples" (5). Furthermore, the ERTA increased "the maximum amount of employment-related expenditures eligible for the child care tax credit" and "the rate of the

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child care credit" (Staff of the Joint Committee on Taxation 1981, 5). It also created deductions "for charitable contributions for individual taxpayers who do not itemize personal deductions" (which "expires after 1986") and for certain "adoption expenses" (6).

The act also made changes to the estate tax and the gift tax. It increased "the unified credit against the estate and gift taxes," reduced "the top estate and gift tax rate," and removed "the quantitative limits on the marital deduction under both the estate and gift taxes so that no transfer tax is imposed on transfers between spouses" (11).

5.2   1982 Tax Equity and Fiscal Responsibility Act (TEFRA)

In his 1982 State of the Union address, Reagan said, "Raising taxes won't balance the budget; it will encourage more government spending and less private investment. Raising taxes will slow economic growth, reduce production, and destroy future jobs, making it more difficult for those without jobs to find them and more likely that those who now have jobs could lose them" (Reagan 1982b).

In a speech on August 16, 1982, Reagan said, with reference to the legislation that would become TEFRA, "there is a tax bill before the Congress tied to a program of further cuts in spending. It is not, however, the 'greatest single tax increase in history.' Possibly it could be called the greatest tax reform in history...I support it because it's right for America. I support it because it's fair. I support it because it will, when combined with our cuts in government spending, reduce interest rates and put more Americans back to work again" (Reagan 1982a).

TEFRA was "signed by President" Reagan on September 3, 1982 ("Actions Overview

H.R.4961" 1982). According to Romer and Romer (2009), the impetus for this act "was deficit reduction and increased fairness" (70).

With respect to the AMT, "citing the need to simplify the system and focus the tax on high-income taxpayers, Congress...repealed the add-on minimum tax [the system established in 1969], expanded the tax base of the alternative minimum tax, and changed the AMT tax rate to 20%" (Maguire 2012, 2).

5.3   1983 Social Security Amendments

While these amendments were numerous and important and included "[a] gradual increase in the age of eligibility for full retirement benefits from age 65 to age 66 in 2009 and age 67 in 2027," the most relevant components given our purposes are the following (See Kollmann (2000)). First, the "[inclusion] of up to 50 percent of Social Security benefits in the taxable income of higher-income beneficiaries." For this measure, "the income thresholds (adjusted gross income plus one-half of Social Security benefits) were set at $25,000 for single individuals, $32,000 for couples filing jointly, and zero for couples filing separately." Second, "an acceleration of scheduled tax increases for employees and employers, with an offsetting tax credit for employees for 1984" and "an increase in the rates for the self-employed to equal the combined employee/employer rate but with partially offsetting credits and deductions."

5.4   1984 Deficit Reduction Act

By 1984, Reagan seemed to view the deficit as a primary economic issue, saying that "we must bring down the deficits to ensure continued economic growth." He used the term

"down payment" to describe his initial push for address the deficit and proposed as possible measures "less contentious spending cuts that are still pending before the Congress. These could be combined with measures to close certain tax loopholes, measures that the Treasury Department has previously said to be worthy of support" (Reagan 1984). Romer and Romer (2009) summarizes the primary impetus for this act as concern about the budget deficit and the secondary one as a desire for "increased fairness and efficiency in the tax system" (74).

President Reagan signed the Deficit Reduction Act of 1984 on July 18, 1984 ("Actions Overview H.R.4170" 1984). An important provision is that it raised the EITC "from ten to 11 percent" (Congress.gov 1984). It also increased the maximum EITC credit amount (to $550), the income above which the credit amount started to decrease (to $6,500), and the maximum income cutoff (to $11,000) (Internal Revenue Service 1985). Fuerbringer (1984) states "The new law also changes many corporate, accounting and tax shelter practices to stop abuses, and it delays several scheduled tax cuts...The legislation also includes some tax cuts." The Act's income averaging provision took the form of "[decreasing] the base period for eligibility for income averaging from four taxable years to three taxable years" and "[increasing] the percentage of average base income to be taken into account for purposes of income averaging from 120 percent to 140 percent" (Congress.gov 1984). In addition, the law made some changes to the Aid to Families with Dependent Children (AFDC) program (Congress.gov 1984).

5.5   1986 Tax Reform Act (TRA)

In his 1985 State of the Union, Reagan said, "Together, we can pass, this year, a tax bill for fairness, simplicity, and growth, making this economy the engine of our dreams and America the investment capital of the world....Tax simplification will be a giant step toward unleashing the tremendous pent-up power of our economy" (Reagan 1985). A year later, Reagan said in his 1986 State of the Union, "Now history calls us to press on, to complete efforts for an historic tax reform providing new opportunity for all and ensuring that all pay their fair share, but no more....We cannot and we will not accept tax reform that is a tax increase in disguise....True reform means a tax system that at long last is profamily, projobs, profuture, and pro-America" (Reagan 1986a). Consistent with this, Romer and Romer (2009) state that the impetus for this act was "a desire to make the tax system fairer, simpler, and more conducive to long-run growth" (76).

At the time, the House was controlled by Democrats ("99th Congress (1985-1987)," n.d.), and the Senate was controlled by Republicans ("Complete List of Majority and Minority Leaders," n.d.).

On October 22, 1986, at the signing ceremony for the Tax Reform Act of 1986, Reagan said, "But for all tax reform's economic benefits, I believe that history will record this moment as something more: as the return to the first principles. This country was founded on faith in the individual, not groups or classes, but faith in the resources and bounty of each and every separate human soul" (Reagan 1986b).

The act contains numerous changes to individual income taxes. We explain the major changes to the tax brackets, the standard deduction and personal exemption, the EITC, the

AMT, and other miscellaneous provisions.

The marginal tax brackets changed, as seen in Figure 1. The number of brackets was greatly reduced from 1986 to 1988. The highest marginal tax rate decreased over this time span from 50% in 1986. There is a "rate bubble" of a marginal tax rate of 33% for middle-range incomes (in 1988, "between $71,900 and $149,250 for married filing jointly" and "between $43,150 and $89,560 for singles") (Tax Foundation 2013).

Nominal 1988

Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
15.0%	$0	$29,750	15.0%	$0	$14,875	15.0%	$0	$17,850	15.0%	$0	$23,900
28.0%	$29,750	-	28.0%	$14,875	-	28.0%	$17,850	-	28.0%	$23,900	-

(a) A 33% "rate bubble" applied between $71,900 and $149,250 for married filing jointly, between $35,950 and $113,300 for married filing separately, between $43,150 and $89,560 for singles, and between $61,650 and $123,790 for heads of households, the purpose being to recapture the revenue that upper-income taxpayers had saved by applying the 15% rate.
Note: Last law to change rates was the Tax Reform Act of 1986.

Nominal 1987

Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
11.0%	$0	$3,000	11.0%	$0	$1,500	11.0%	$0	$1,800	11.0%	$0	$2,500
15.0%	$3,000	$28,000	15.0%	$1,500	$14,000	15.0%	$1,800	$16,800	15.0%	$2,500	$23,000
28.0%	$28,000	$45,000	28.0%	$14,000	$22,500	28.0%	$16,800	$27,000	28.0%	$23,000	$38,000
35.0%	$45,000	$90,000	35.0%	$22,500	$45,000	35.0%	$27,000	$54,000	35.0%	$38,000	$80,000
38.5%	$90,000	-	38.5%	$45,000	-	38.5%	$54,000	-	38.5%	$80,000	-

Note: Last law to change rates was the Tax Reform Act of 1986.

Nominal 1986

Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
0.0%	$0	$3,670	0.0%	$0	$1,835	0.0%	$0	$2,480	0.0%	$0	$2,480
11.0%	$3,670	$5,940	11.0%	$1,835	$2,970	11.0%	$2,480	$3,670	11.0%	$2,480	$4,750
12.0%	$5,940	$8,200	12.0%	$2,970	$4,100	12.0%	$3,670	$4,750	12.0%	$4,750	$7,010
14.0%	$8,200	$12,840	14.0%	$4,100	$6,420	14.0%	$4,750	$7,010	14.0%	$7,010	$9,390
16.0%	$12,840	$17,270	16.0%	$6,420	$8,635	15.0%	$7,010	$9,170	17.0%	$9,390	$12,730
18.0%	$17,270	$21,800	18.0%	$8,635	$10,900	16.0%	$9,170	$11,650	18.0%	$12,730	$16,190
22.0%	$21,800	$26,550	22.0%	$10,900	$13,275	18.0%	$11,650	$13,920	20.0%	$16,190	$19,640
25.0%	$26,550	$32,270	25.0%	$13,275	$16,135	20.0%	$13,920	$16,190	24.0%	$19,640	$25,360
28.0%	$32,270	$37,980	28.0%	$16,135	$18,990	23.0%	$16,190	$19,640	28.0%	$25,360	$31,080
33.0%	$37,980	$49,420	33.0%	$18,990	$24,710	26.0%	$19,640	$25,360	32.0%	$31,080	$36,800
38.0%	$49,420	$64,750	38.0%	$24,710	$32,375	30.0%	$25,360	$31,080	35.0%	$36,800	$48,240
42.0%	$64,750	$92,370	42.0%	$32,375	$46,185	34.0%	$31,080	$36,800	42.0%	$48,240	$65,390
45.0%	$92,370	$118,050	45.0%	$46,185	$59,025	38.0%	$36,800	$44,780	45.0%	$65,390	$88,270
49.0%	$118,050	$175,250	49.0%	$59,025	$87,625	42.0%	$44,780	$59,670	48.0%	$88,270	$116,870
50.0%	$175,250	-	50.0%	$87,625	-	48.0%	$59,670	$88,270	50.0%	$116,870	-
						50.0%	$88,270	-			

Note: Last law to change rates was the Tax Reform Act of 1984.

Figure 1: *Marginal Individual Income Tax Brackets, 1986, 1987, and 1988.* Reprinted from Tax Foundation (2013).

TRA 1986 also made changes to the standard deduction and personal exemption. The zero bracket amount (which had been instituted by the Tax Reduction and Simplification Act of 1977) was replaced with a standard deduction starting in 1988 (Staff of the Joint Committee on Taxation 1987, 21). The standard deduction in 1988 was $5,000 for married filing jointly, $4,400 for head of household, $3,000 for singles, and $2,500 for married filing separately (see Table 3). From 1989 onward, the standard deduction amounts were adjusted for inflation (22).

Table 3: Standard Deduction, 1988. Reprinted from (Staff of the Joint Committee on Taxation 1987, 22).

Filing status	Standard deduction
Married individuals filing jointly; surviving spouses	$5,000
Heads of household	4,400
Single individuals	3,000
Married individuals filing separately	2,500

In addition, TRA 1986 "[increased] the personal exemption for each individual, the individual's spouse, and each eligible dependent" to $1,900 in 1987, $1,950 in 1988, and $2,000 in 1989. It will be "adjusted for inflation" in years thereafter (22–23).

The EITC was also revised. The act instituted a two-year increase in the EITC, which increased the maximum credit amount as well as the income range over which a taxpayer is eligible for the credit. The Joint Committee on Taxation noted that "the Act increases the rate and base of the earned income credit to 14 percent of the first $5,714 of an eligible individual's earned income. As a result, the maximum credit is increased to $800. The income level at which the credit is completely phased out is raised to $13,500. Starting in taxable years that begin on or after January 1, 1988, the phase-out range is raised to $9,000/$17,000" (28).

In addition, TRA 1986 provided that the EITC "is to be adjusted (beginning in 1987) for inflation." For 1987 only, there is to be a special formula: "The adjustment factor for 1987 equals the increase in the consumer price index (CPI) from August 31, 1984, to August 31, 1986" (Staff of the Joint Committee on Taxation 1987, 28).

TRA 1986 also contained provisions relating to the AMT. This act

> increased the [AMT] tax rate to 21%, changed the basic exemption amount, broadened the tax base, and revamped the alternative minimum tax credit. It also introduced a phase-out of the AMT exemption amount for taxpayers whose AMT taxable income exceeded certain limits. For taxpayers filing joint returns the AMT exemption was reduced by 25% of the amount by which the taxpayer's AMT taxable income exceeded $150,000 ($112,000 for single taxpayers and $75,000 for married taxpayers filing separately, trusts, and estates). (Maguire 2012, 2)

Additionally, "since the 1986 Act repealed the exclusion for long-term capital gains income and capital gains income was taxed in full under the regular income tax, it was no longer taxed as a tax preference item under the AMT. This change substantially reduced the number of taxpayers subject to the AMT" (2). The act established that "the maximum rate on long-term capital gain in 1987 is 28 percent" (Staff of the Joint Committee on Taxation 1987, 179).

There are many other miscellaneous provisions. The act "repealed two-earner deduction, ...state and local sales tax deduction, income averaging, and exclusion of unemployment benefits" and restricted some tax deductions ("Major Enacted Tax Legislation, 1980-1989,"

n.d.).

5.6 1987 Omnibus Budget Reconciliation Act

President Reagan signed the Omnibus Budget Reconciliation Act of 1987 on December 22, 1987 ("Actions Overview H.R.3545" 1987). Ward (1988), writing in the *New York Times*, said that the act "is intended to increase the tax base by nearly $40 billion over the next three years." Consistent with this, Romer and Romer (2009) classify the 1987 tax reform as focusing on "deficit reduction" (78).

The act made a change to social security employer taxes by including employee tips within the wages on which social security employer taxes are based. With regard to deductions and credits, it revised "the definition of 'qualified residence interest' for purposes of the income tax deduction for personal interest to distinguish between acquisition indebtedness and home equity indebtedness" and limited "to $1,000,000 and $100,000 respectively the amount of indebtedness on which interest is deductible." It also extended "through 1992 the 1987 estate and gift tax rates, the highest of which [was] 55 percent (applied to transfers over $3,000,000)," and phased out "the benefits of graduated rates and the unified credit with respect to transfers of between $10,000,000 and $21,040,000 ($18,040,000 as of 1993)" (Congress.gov 1987). The act also limited the eligibility of certain expenses toward the child-care tax credit (Ward 1988).

5.7 1988 The Family Support Act

Reagan signed the Family Support Act of 1988 on October 13, 1988 ("Actions Overview H.R.1720" 1988). The act limited "the application of the dependent care credit or assistance exclusion for nonhandicapped children to children under age 13" (under prior law, it was limited to children 14 years old or younger) and reduced "the amount of a taxpayer's expenses which are eligible for the dependent care credit by the amount excludable from such taxpayer's income under the exclusion for employer-provided dependent care assistance benefits" (Congress.gov 1988).

5.8 1988 Medicare Catastrophic Coverage Act

This act was repealed by the Medicare Catastrophic Coverage Repeal Act of 1989, so many of its provisions were never in effect. However, we still include details about the law for reference.

Reagan signed the bill on July 1, 1988 ("Actions Overview H.R.2470" 1988). Smith (1989) says that the bill "provides the greatest expansion of benefits since 1965, when Medicare, the Federal health program for those over 65 and certain disabled people, began....After considerable discussion, deficit-conscious Federal lawmakers voted for the first time to charge the entire cost of changes in the Medicare program to the beneficiaries, basing part of the payment on income."

While the bill contained many provisions, the one most relevant to income taxes themselves was the "supplemental premium." Smith (1989) explained that "everyone eligible for Medicare Part A (hospital services) will pay a supplemental premium, even if one de-

clines catastrophic coverage because one has a comprehensive employer-provided retiree or employee health-insurance plan....The supplemental premium this year [1989] will be a surcharge of 15 percent of one's income tax, ranging from $22.50 on a tax liability of $150 to a maximum surcharge of $800 per enrollee. By 1993, this surcharge will increase to 28 percent of income tax, with a cap of $1,050 per enrollee."

Christensen and Kasten (1988) clarified that "for the supplemental calculation, couples filing jointly will divide their tax liability in half. If only one of the couple is eligible for HI benefits, the supplemental rate will apply to that person's half of tax liability, subject to the ceiling of $800 in 1989. If both are eligible for HI benefits, the rate will apply to both halves of the couple's tax liability, subject to a ceiling of $1,600 in 1989" (9).

5.9   1988 Technical and Miscellaneous Revenue Act

Reagan signed the Technical and Miscellaneous Revenue Act of 1988 on November 10, 1988 ("Actions Overview H.R.4333" 1988). The bill "passed technical corrections for the Tax Reform Act of 1986" and "extended expiring provisions" such as some tax credits ("Major Enacted Tax Legislation, 1980-1989," n.d.).

6   President George H.W. Bush (1989-1993)

6.1   1989 Medicare Catastrophic Coverage Repeal Act

President Bush signed the Medicare Catastrophic Coverage Repeal Act of 1989 on December 13, 1989 ("Text - H.R.3607" 1989). It repealed the Medicare Catastrophic Coverage

Act of 1988.

Rice, Desmond, and Gabel (1990) say, "Several factors explain the repeal. Many elderly resented the idea of paying additional taxes to finance the new coverage. This would have represented a hefty burden on some, and, unlike the rest of the Medicare program, the additional benefits mandated by the act would have been financed entirely by the elderly" (76).

With regard to the "supplemental premium," an article in the *Atlanta Daily World* said, "The supplemental premium or so-called surtax that was to have been paid with a beneficiary's 1989 income tax has been eliminated. Beneficiaries who prepaid the surtax with their estimated 1989 taxes may get a refund when they file their 1989 Federal income tax returns" ("Medicare Catastrophic Health Insurance End" 1990).

6.2   1989 Omnibus Budget Reconciliation Act

President Bush signed the Omnibus Budget Reconciliation Act of 1989 on December 19, 1989 ("Actions Overview H.R.3299" 1989). The provisions of this act included miscellaneous amendments to tax laws from previous years (Congress.gov 1989), contained provisions limiting tax deductions and exclusions for employee stock ownership plans, and extended some expiring tax credits ("Major Enacted Tax Legislation, 1980-1989," n.d.). Typically, these extensions lasted until the end of September 1990 ("Text: H.R.3299" 1989).

6.3 1990 Omnibus Budget Reconciliation Act

At the 1988 Republican National Convention, Bush famously said, "Read my lips: no new taxes" (George H.W. Bush 1988). However, both the House and the Senate were controlled by Democrats ("101st Congress (1989-1991)," n.d.; "Complete List of Majority and Minority Leaders," n.d.) and negotiations on cutting the budget deficit stalled. Hence, "President Bush today broke with his vow to oppose new taxes and said any agreement with Congress would require 'tax revenue increases.'" (June 26, 1990, Rosenthal (1990)). President Bush's focus on the federal budget deficit continued with a speech on October 2, 1990, in which he said, "But here at home there's another threat, a cancer gnawing away at our nation's health. That cancer is the budget deficit" (George H.W. Bush 1990).

President Bush, in his signing statement on November 5, 1990, called the bill "the centerpiece of the largest deficit reduction package in history and an important measure for ensuring America's long-term economic growth" (George Bush 1990). Consistent with this, Romer and Romer (2009) state that "deficit reduction" primarily drove this act (79).

The act increased "the maximum marginal income tax rate to 31 percent" and repealed "the current phase-out of the 15-percent rate and personal exemptions." It also phased-out "the deduction for personal exemptions as a taxpayer's adjusted gross income exceeds a threshold amount" (Congress.gov 1990).

The income tax brackets for 1990 and 1991 are in Figure 2.

The act "adjusted EITC benefit levels and phase-in and phase-out rates for family size" and "created a low-income credit for the premium costs of health insurance that includes coverage for children" ("Major Enacted Tax Legislation, 1990-1999," n.d.). It "increased the

Nominal   **1991**

Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
15.0%	$0	$34,000	15.0%	$0	$17,000	15.0%	$0	$20,350	15.0%	$0	$27,300
28.0%	$34,000	$82,150	28.0%	$17,000	$41,075	28.0%	$20,350	$49,300	28.0%	$27,300	$70,450
31.0%	$82,150	-	31.0%	$41,075	-	31.0%	$49,300	-	31.0%	$70,450	-

Note: Last law to change rates was the Omnibus Budget Reconciliation Act of 1990.

Nominal   **1990**

Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
15.0%	$0	$32,450	15.0%	$0	$16,225	15.0%	$0	$19,450	15.0%	$0	$26,050
28.0%	$32,450	-	28.0%	$16,225	-	28.0%	$19,450	-	28.0%	$26,050	-

(a) A 33% "rate bubble" applied between $78,400 and $162,770 for married filing jointly, between $39,200 and $123,570 for married filing separately, between $47,050 and $97,620 for singles, and between $67,200 and $134,930 for heads of households, the purpose being to recapture the revenue that upper-income taxpayers had saved by applying the 15% rate.

Note: Last law to change rates was the Tax Reform Act of 1986.

Figure 2: *Marginal Individual Income Tax Brackets, 1990 and 1991.* Reprinted from Tax Foundation (2013). Note that the "rate bubble" introduced by the Tax Reform Act of 1986 was eliminated. Thus, the highest possible marginal tax rate technically decreased from 33 percent to 31 percent, and the marginal tax rate on higher incomes increased from 28 percent to 31 percent.

AMT tax rate from 21% to 24%" (Maguire 2012, 2), "capped the capital gains rate at 28 percent", and "limited [the] value of high income itemized deductions," and "reduced by 3 percent times the extent to which AGI exceeds $100,000" ("Major Enacted Tax Legislation, 1990-1999," n.d.).

The act increased "the dollar limitation on the amount of wages and self-employment income subject to the social security hospital insurance tax," required "social security coverage for State and local employees who are not covered by a State voluntary agreement or a retirement system," and subjected "such employee wages to the Federal Old-Age, Survivors, and Disability Insurance (OASDI) tax" (Congress.gov 1990).

The act extended certain tax provisions, such as some tax credits (Congress.gov 1990).

6.4   1991 Tax Extension Act

President Bush signed the Tax Extension Act of 1991 on December 11, 1991 ("Actions Overview H.R.3909" 1991). It extended a number of tax credits and other "expiring provisions" for six months (Congress.gov 1991). In general, these extensions are such that the provisions continue through the first half of 1992 ("Text: H.R.3909" 1991).

7   President Bill Clinton (1993-2001)

7.1   1993 Omnibus Budget Reconciliation Act

In a speech on February 15, 1993, President Clinton spoke negatively about the economic policies of his two predecessors, saying that "the big tax cuts for the wealthy, the growth in Government spending, and soaring health care costs all caused the Federal deficit to explode...while the deficit went up, investments in the things that make us stronger and smarter, richer and safer, were neglected: less invested in education, less in our children's future, less in transportation, less in local law enforcement" (Clinton 1993b). Two days later, speaking to Congress, Clinton previewed his economic proposals, and said, "In order to accomplish both increased investment and deficit reduction, something no American Government has ever been called upon to do at the same time before, spending must be cut and taxes must be raised" (Clinton 1993a).

When the bill was passed, both the House and the Senate were controlled by Democrats ("103rd Congress (1993-1995)," n.d.; "Complete List of Majority and Minority Leaders," n.d.) and, consistent with President Clinton's goals, Romer and Romer (2009) classify the

impetus for this act as "deficit reduction" (80).

The act increased some individual income taxes by instituting "new higher tax rates of 36 percent and 39.6 percent" ("Major Enacted Tax Legislation, 1990-1999," n.d.). These rates went into effect beginning in 1993, the year that the act was passed (Staff of the Joint Committee on Taxation 1993, 11). In addition, the act "permanently extended the itemized deduction limitation and the personal exemption phase-out legislated in OBRA 1990" ("Major Enacted Tax Legislation, 1990-1999," n.d.).

The tax bracket changes can be seen in Figure 3.

Nominal						1993					
Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
15.0%	$0	$36,900	15.0%	$0	$18,450	15.0%	$0	$22,100	15.0%	$0	$29,600
28.0%	$36,900	$89,150	28.0%	$18,450	$44,575	28.0%	$22,100	$53,500	28.0%	$29,600	$76,400
31.0%	$89,150	$140,000	31.0%	$44,575	$70,000	31.0%	$53,500	$115,000	31.0%	$76,400	$127,500
36.0%	$140,000	$250,000	36.0%	$70,000	$125,000	36.0%	$115,000	$250,000	36.0%	$127,500	$250,000
39.6%	$250,000	-	39.6%	$125,000	-	39.6%	$250,000	-	39.6%	$250,000	-

Note: Last law to change rates was the Omnibus Budget Reconciliation Act of 1993.

Nominal						1992					
Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
15.0%	$0	$35,800	15.0%	$0	$17,900	15.0%	$0	$21,450	15.0%	$0	$28,750
28.0%	$35,800	$86,500	28.0%	$17,900	$43,250	28.0%	$21,450	$51,900	28.0%	$28,750	$74,150
31.0%	$86,500	-	31.0%	$43,250	-	31.0%	$51,900	-	31.0%	$74,150	-

Note: Last law to change rates was the Omnibus Budget Reconciliation Act of 1990.

Figure 3: *Marginal Individual Income Tax Brackets, 1992 and 1993.* Reprinted from Tax Foundation (2013).

With regard to the AMT, the act

> increased the AMT exemption amounts from $40,000 to $45,000 for taxpayers
> filing joint returns, from $30,000 to $33,750 for taxpayers filing single returns,
> and from $20,000 to $22,500 for married taxpayers filing separately, estates, and
> trusts. Second, it created a twotiered tax rate structure for the AMT. A 26% tax
> rate is applicable to the first $175,000 of a taxpayer's alternative minimum tax-
> able income in excess of the exemption amount and 28% on alternative minimum
> taxable income in excess of $175,000. (Maguire 2012, 2)

Other changes the act made include expanding "the taxable portion of Social Security benefits from 50 percent to 85 percent, when modified AGI goes above $44,000 for joint returns and $34,000 for single returns," increasing "fuel taxes by 4.3 cents per gallon (plus extended the current motor fuels tax of 2.5 cents per gallon)," reducing "business meals and entertainment deduction," and extending "the EITC to single workers with no children earning $9,000 or less" ("Major Enacted Tax Legislation, 1990-1999," n.d.).

7.2 1996 Small Business Job Protection Act

The Small Business Job Protection Act of 1996 made the "Social Security tax credit...applicable to Social Security taxes paid with respect to employee cash tips." It also included "provisions allowing contributions to a spousal IRA for a non-working spouse (thus doubling potential maximum contributions from $2,000 to $4,000 for eligible participants)" and made other changes related to small businesses ("Major Enacted Tax Legislation, 1990-1999," n.d.).

It also included "provisions allowing contributions to a spousal IRA for a non-working

spouse (thus doubling potential maximum contributions from $2,000 to $4,000 for eligible participants), simplifying distributions from small business pension plans, tightening of nondiscrimination provisions, eliminating special aggregation rules applying to self-employed individual plans, and reform of miscellaneous pension rules governing state and local, special job-status or professional individuals" ("Major Enacted Tax Legislation, 1990-1999," n.d.).

7.3   1996 Health Insurance and Portability Act (HIPAA)

Among other provisions, the Health Insurance and Portability Act of 1996 created medical savings accounts (MSAs), which are "IRA-like vehicles for the tax-advantaged accumulation of assets against possible medical expenses for employees covered under an employer-sponsored high deductible plan (e.g., at least a $1,500 deductible) of a small employer and self-employed individuals, regardless of the size of the entity for which they perform work. Individual contributions to an MSA are deductible (within limits) in determining AGI (i.e., above the line); additionally, employer contributions are excludible from gross income" ("Major Enacted Tax Legislation, 1990-1999," n.d.).

In addition, some other provisions included that the "health expense deduction [was] increased for [the] self-employed," and that the act "made [IRA] withdrawals [for health care expenses] penalty free" ("Major Enacted Tax Legislation, 1990-1999," n.d.).

7.4   1997 Taxpayer Relief Act

President Clinton's signing statement for the Taxpayer Relief Act of 1997 on August 5, 1997, outlined the following key criteria that the tax cuts had to satisfy:

First, the tax cuts must be fiscally responsible by avoiding an explosion in revenue costs in years outside the budget windows. Second, the tax cuts must provide a fair balance of benefits for working Americans. Third, the tax cuts must encourage economic growth. Fourth, the tax package must reflect the terms of the bipartisan budget agreement, including a significant expansion of opportunities for higher education for Americans of all ages.

I believe that H.R. 2014 meets these tests. It will provide an estimated $95 billion in net tax cuts over the next 5 years. It is a fair plan that places a priority on education tax cuts and provides a child tax credit to families who work hard and pay taxes. It also incorporates Republican priorities in a goodfaith effort to honor the budget accord and to reach final agreement on a tax cut the American people deserve. This legislation will not only provide needed tax relief for middle-class Americans, but will also encourage economic growth. It is also fiscally responsible: the costs of these tax cuts are fully offset in accordance with the balance budget agreement. (Clinton 1997, 1192)

Romer and Romer (2009)'s view on this act is that, on the presidential side, "the tax cuts in the Taxpayer Relief Act were driven by the spending cuts" (82), and that on the congressional side, the act was motivated by "the importance of balancing the budget" and by the fact that Congress "viewed tax cuts as desirable on philosophical grounds."

The act created "a tax credit of up to $500 dollars for each qualifying child of a taxpayer," starting in 1998 (Congress.gov 1997).

With regard to education, the act created "a non-refundable HOPE credit against Federal

income taxes up to $1,500 per student per year for qualified tuition and related expenses paid for the first two years of the student's post-secondary education in a degree or certificate program" and "a nonrefundable 'Lifetime Learning' credit against Federal income taxes equal to 20 percent of qualified tuition and related expenses incurred during the taxable year on behalf of the taxpayer, the taxpayer's spouse, or any dependents" (Staff of the Joint Committee on Taxation 1997, 14–17). The act also "permits a deduction of up to $2,500 for interest paid during the first five years interest is due on a qualified higher education loan" (Congress.gov 1997).

The act reduced "the maximum capital gains rate for individuals from 28 to 20 percent." The act also "revises provisions concerning the one-time exclusion for the gain from the sale of a principal residence to, among other things: (1) increase the exclusion to $250,000 ($500,000 for certain joint returns); (2) allow the exclusion once every two years; and (3) remove the age limitation" (Congress.gov 1997).

The law created Roth IRAs (Congress.gov 1997).

The act also "established that the maximum tax rate applicable to capital gains income under the regular income tax would also apply to capital gains income under the AMT" (Maguire 2012, 2).

7.5   1999 Omnibus Consolidated and Emergency Supplemental Appropriations Act

The Omnibus Consolidated and Emergency Supplemental Appropriations Act "allowed the nonrefundable personal tax credits to offset an individual's regular income tax in full for

tax year 1998 only, even though the personal tax credits might be larger than the amount by which the taxpayer's regular income tax exceeded his tentative minimum tax. In addition, it repealed, for tax year 1998 only, the provision that reduced the additional child tax credit by the amount by which an individual's AMT exceeded his regular income tax liability" (Maguire 2012, 2–3).

7.6 1999 Ticket to Work and Work Incentives Improvement Act

7.6.1 1999 Tax Relief Extension Act

The Tax Relief Extension Act was a section of the Ticket to Work and Work Incentives Improvement Act of 1999. This act "extended, through December 31, 2001, the existing law tax provision that allows individuals to offset their regular income tax by the full amount of their nonrefundable personal tax credits regardless of the AMT" (3).

7.7 2001 Consolidated Appropriations Act

The Consolidated Appropriations Act of 2001 "increased the per-capita low-income tax credit cap from \$1.25 per capita to \$1.50 per capita in 2001 and \$1.75 in 2002" and made it "[a]djusted for inflation beginning in 2003." It "extended the \$5,000 credit for first-time homebuyers of a principal residence in the District of Columbia." Additionally, it "designated 40 renewal communities, 12 in rural areas, to receive the following tax benefits available from January 1, 2002 to December 31, 2009: a zero-percent rate for capital gain from sale of qualifying assets, a 15-percent wage credit to employers for the first \$10,000 of qualified wages, a commercial revitalization deduction, an additional \$35,000 of section 179

expensing for qualified property, [and] an expansion of the work opportunity tax credit for individuals who live in a renewal community" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8   President George W. Bush (2001-2009)

8.1   2001 Economic Growth and Tax Relief Reconciliation Act (EGTRRA)

President George W. Bush talked about tax policy during his 2000 presidential campaign. For example, at the 2000 Republican National Convention, he said,

> The last time taxes were this high as a percentage of our economy, there was a good reason; we were fighting World War II. Today our high taxes fund a surplus. Some say that growing federal surplus means Washington has more money to spend. But they've got it backwards. The surplus is not the government's money; the surplus is the people's money. I will use this moment of opportunity to bring common sense and fairness to the tax code. ("Full Text of Bush's Acceptance Speech" 2000)

At his 2001 State of the Union address, Bush proposed a number of tax policy changes, such as simplifying "the Tax Code by reducing the number of tax rates from the current five rates to four lower ones, 10 percent, 15, 25 and 33 percent," reducing "the marriage penalty," doubling "the child credit to $1,000 per child," and repealing "the death tax [estate tax]." One of the rationales he gave was that "For lower-income families, my tax plan restores basic

fairness. Right now, complicated tax rules punish hard work....But America's message must be different. We must honor hard work, never punish it" (George W. Bush 2001a).

Ultimately, the EGTRRA would be signed by President Bush on June 7, 2001. At the signing ceremony, Bush, echoing his remarks at the Republican National Convention in 2000, said, "We recognize loud and clear the surplus is not the government's money. The surplus is the people's money and we ought to trust them with their own money. This tax relief plan is principled. We cut taxes for every income taxpayer. We target nobody in, we target nobody out. And tax relief is now on the way" (George W. Bush 2001b).

At the time, the House was controlled by Republicans ("107th Congress (2001-2003)," n.d.). The Senate was controlled by Republicans from January 20, 2001 through June 6, 2001 and by Democrats afterwards ("Complete List of Majority and Minority Leaders," n.d.). Romer and Romer (2009)'s view is that the impetus for this act was due to "philosophical considerations" and "considerable concern about the health of the economy" (84-85).

The EGTRRA contained numerous changes to the tax laws. It is important to note that while some of its provisions were intended to be implemented over several years, future tax laws (such as the JGTRRA in 2003) would alter that implementation schedule. We describe the EGTRRA's original provisions when it was passed, not the actual statutory effects resulting from both EGTRRA and later tax acts.

We also note that many of the provisions of the EGTRRA were planned to no longer be in effect beginning with the 2011 tax year. However, many provisions of the EGTRRA would be prolonged by later laws (Horton 2017).

With regard to individual income taxes, the EGTRRA's implementation plan was that "when fully-phased in 2006, [it would levy] a new 10 percent rate on the first \$12,000 of

income for a married couple ($10,000 for a single head of household and $6,000 for an individual); the 15 percent rate begins thereafter," and it reduced the "28 percent rate to 25 percent, the 31 percent rate to 28 percent, the 36 percent rate to 33 percent and the 39.6 percent rate to 35 percent." The law would repeal "the phaseout of the itemized deduction and personal exemption by 2008" and make "the 10 percent bracket retroactive, resulting in refund checks of up to $300 for individuals and $600 for couples 4-5 months hence." Additionally, the act would "lower marriage penalties for couples by making the standard deduction and 15 percent bracket twice the size as for a single taxpayer" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

Gravelle (2016) points out that "in 2001, joint standard deductions were increased, so as to eliminate the marriage penalty relative to singles without children and reduce it relative to heads of household" (3).

In addition, the act "doubled the $500 per child tax credit to $1,000 and made it refundable for persons earning above $10,000 to the extent of 10 percent for every dollar of earned income above $10,000 up to the maximum per child. The refundability rate rises to 15 percent in 2005 and the $10,000 threshold is indexed for inflation." It "provided a credit of 25 percent on expenditures for employer-provided childcare and increases the dependent care and adoption credits" ("Major Enacted Tax Legislation, 2000-2009," n.d.). Horton (2017) summarizes that

the tax cuts included three components that are often referred to as 'middle-class' tax cuts. One provision created a new bottom income tax rate of 10 percent for some of the income that was previously taxed at a 15 percent rate. Another

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provision increased the Child Tax Credit from $500 to $1,000 per child and made many low-income working families eligible for the credit. The third provision was 'marriage penalty relief' — a set of changes that reduced taxes for some married couples.

Crandall-Hollick (2018) points out that the "EGTRRA reduced the EITC marriage penalty by increasing the income level at which the credit phased out for married couples. This 'marriage penalty relief' was scheduled to gradually increase to $3,000 by 2008" (9-10).

In addition, the EGTRRA "gradually reduced the estate and gift tax rate from 55 percent to 45 percent by 2007; raised the effective exemption from $1 million in 2002 to $3.5 million in 2009," and "[e]liminated the estate tax portion entirely in 2010 in lieu of a capital gains tax with high disregard ($3.3 million) for transfers to a surviving spouse." It "increased IRA annual contribution limits from $2,000 to $5,000 and 401(k) limits from $10,000 to $15,000; allowed individuals 50 and older to make larger, catch-up contributions; permitted Roth 401(k)s beginning in 2006; and established a temporary credit for retirement savings for households earning $50,000 or less." It also "allowed $4,000 maximum deduction of college tuition expenses; allowed tax-free distributions from pre-paid college tuition plans, allowed private institutions to offer these, and allowed taxpayers to simultaneously claim HOPE or Lifetime Learning credits in some instances; eliminated the 60 month limit on student loan interest deduction" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

With regard to the AMT, this act allowed "the child tax credit, the adoption tax credit, and the IRA contribution tax credit to be claimed to the extent of the full amount of

a taxpayer's regular income tax and alternative minimum tax [until 2010]. The act also temporarily increased the AMT exemption amount by \$4,000 for joint returns (\$2,000 for unmarried individuals) effective for tax years between 2001 and 2004" (Maguire 2012, 3).

8.2   2002 Job Creation and Worker Assistance Act (JCWAA)

The Job Creation and Worker Assistance Act of 2002 contained changes such as providing "up to 13 weeks of temporary extended unemployment benefits for eligible displaced workers" ("Major Enacted Tax Legislation, 2000-2009," n.d.). It also "extended the temporary provisions, first enacted in 1998, that allowed individuals to use all personal tax credits against both their regular and AMT tax liabilities. This change was effective through December 31, 2003" (Maguire 2012, 3). Romer and Romer (2009)'s view is that impetus for this act "was to offset adverse macroeconomic shocks, especially those resulting from the terrorist attacks of September 11, 2001" (87).

8.3   2003 Jobs and Growth Tax Relief Reconciliation Act (JGTRRA)

At his 2002 State of the Union address, Bush commented, "Congress listened to the people and responded by reducing tax rates, doubling the child credit, and ending the death tax. For the sake of long-term growth and to help Americans plan for the future, let's make these tax cuts permanent" (George W. Bush 2002). A year later, at the 2003 State of the Union, Bush commented on the economy, saying, "After recession, terrorist attacks, corporate scandals and stock market declines, our economy is recovering. Yet it is not growing fast enough, or strongly enough" (George W. Bush 2003b). Bush therefore called

for faster implementation of the changes set in motion by the EGTRRA: "I am proposing that all the income tax reductions set for 2004 and 2006 be made permanent and effective this year" (George W. Bush 2003b).

At the signing ceremony for the bill on May 28, 2003, Bush said, "Today we are taking essential action to strengthen the American economy. With my signature, the Jobs and Growth Tax Relief Reconciliation Act of 2003 will deliver substantial tax relief to 136 million American taxpayers" (George W. Bush 2003a).

At the time, both the House and the Senate were controlled by Republicans ("108th Congress (2003-2005)," n.d.; "Complete List of Majority and Minority Leaders," n.d.). Romer and Romer (2009) state that "on the administration's side, long-run considerations were important, and the weight of the evidence suggests that the short-run motive was not to offset prospective macroeconomic weakness, but to push growth above normal. On Congress's side, long-run considerations were primary, and there is no clear evidence of a belief that the cuts were needed to return growth to normal" (90).

The law "expanded [the] child tax credit to $1,000 per child for 2003-04, reverting to present law (2001-enacted phase ins and outs) in 2005; expanded 15 percent tax bracket and standard deduction for joint filers to double the ranges and levels for single filers for 2003-04, reverting to present law in 2005; expanded 10 percent bracket for 2003-04, reverting to present law in 2005" ("Major Enacted Tax Legislation, 2000-2009," n.d.). The law also accelerated "to 2003 [the] individual income tax rate reductions scheduled to begin in 2006" and maintained "that level and the sunset established under EGTRRA for years following" (Congress.gov 2003).

With regard to capital gains, the act "reduces the 10- and 20-percent rates on capital

gains to five (zero, in 2008) and 15 percent, respectively. These lower rates apply to both the regular tax and the alternative minimum tax. The lower rates apply to assets held more than one year. The provision applies to sales and exchanges (and payments received) on or after May 6, 2003, and before January 1, 2009." In addition, "dividends received by an individual shareholder from domestic and qualified foreign corporations generally are taxed at the same rates that apply to capital gains" (Joint Committee on Taxation 2003, 3).

With regard to the AMT, the law "increased the basic AMT exemption amount to $58,000 for joint returns and to $40,250 for unmarried taxpayers. These increases were in effect for tax years 2003 and 2004. JGTRRA also established that the new maximum tax rate of 15% applicable to capital gains and dividend income under the regular income tax would also apply to the taxation of capital gains and dividend income under the AMT" (Maguire 2012, 3).

8.4   2003 Military Family Tax Relief Act

The Military Family Tax Relief Act of 2003 made some changes to taxes for members of the U.S. military. For example, it "extended the five-year period utilized in determining full exclusion of gain from the sale of a principal residence up to ten years for a member of the uniformed or foreign services," "doubled from $6,000 to $12,000 military death gratuity payments and provided that the full payment is tax-exempt," "exempted distributions made from education IRAs for non-educational purposes from the 10 percent tax penalty if made for an account holder in a military academy," and "created [an] above-the-line deduction for overnight travel expenses of National Guard and reserve members traveling more than 100

miles from home" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.5   2003 Medicare Prescription Drug, Improvement, and Modernization Act

The primary change that the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 made was that it "introduced Health Savings Accounts [HSAs]," which "allowed taxpayers under age 65 to make tax-free deposits up to the deductible on a high deductible plan if they also purchase a catastrophic health policy" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.6   2004 Working Families Tax Relief Act (WFTRA)

At the signing ceremony for the Working Families Tax Relief Act on October 4, 2004, Bush described a motivation for the bill: "Some of the tax relief provisions we passed over the last 3 years were set to expire at the end of 2004....That would have been a burden for hard-working families across America. And it would have been a setback for our economy. Today we're acting to keep vital tax relief in place" (George W. Bush 2004). Bush also called for additional tax measures; he said, "For the sake of our families and small businesses and farmers, investors, and seniors, we need to make all the tax relief permanent" (George W. Bush 2004).

The main provisions of the law related to extending "expiring provisions of EGTRRA (2001) and JGTRRA (2003)." The WFTRA "extended several provisions, including the $1,000 child tax credit through 2009, the doubling of the standard deduction for joint filers

through 2008, the new 10 percent bracket through 2010, and the increased AMT exemption from the AMT through 2005. In addition, [it] accelerated the increase in the refundability of the child tax credit to 15 percent in 2004 instead of 2005" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

The WFTRA also treated "combat zone compensation (otherwise excludable from gross income) as earned income for purposes of calculating the refundable portion of the child tax credit" and allowed "taxpayers to elect, in 2004 and 2005, to treat combat zone compensation as earned income for purposes of the earned income tax credit" (Congress.gov 2004). The act also "extended other expiring tax provisions through 2005 only," such as "the tax credit for increasing research activities, the work opportunity tax credit, the welfare-to-work tax credit, the treatment of personal nonrefundable credits against the AMT, the deduction for teacher classroom expenses, tax incentives for investment in the District of Columbia, Indian employment tax credit," and others ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.7   2004 American Jobs Creation Act (AJCA)

The American Jobs Creation Act of 2004 primarily contained changes to business taxes. However, some of its provisions directly impacted taxes for individuals. These included providing "transitional relief for taxpayers subject to the ETI [extraterritorial income] repeal by allowing a tax exclusion of 80 percent in 2005 and 60 percent in 2006 of extraterritorial income" and creating " deduction relating to income attributable to U.S. production activities" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

With regard to the AMT, this act "coordinated farmer and fisherman income averaging

with the AMT so that the use of income averaging did not push taxpayers into the AMT. It repealed the 90-percent limitation on the use of the AMT foreign tax credit. The act also allowed the credits for alcohol used as a fuel and electricity produced by renewable resources to be used in full against the AMT" (Maguire 2012, 3).

8.8   2005 Energy Tax Incentives Act of the Energy Policy Act

The Energy Tax Incentives Act of the Energy Policy Act of 2005 dealt primarily with changes to taxes for businesses. However, there were a few provisions that directly impacted individuals, such as allowing "[an] individual tax credit for certain residential energy efficiency improvements before 2008 and [a] tax credit for 30 percent of expenditures made for certain residential energy efficient property" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.9   2005 Katrina Emergency Tax Relief Act

As the name of the Katrina Emergency Tax Relief Act of 2005 implies, the impetus for this act was Hurricane Katrina. At the time, the Congressional Budget Office noted that the act "gives tax relief to individuals and businesses affected by Hurricane Katrina...The legislation provides tax relief for individuals and businesses who experienced property damage, creates a number of incentives for charitable giving, and makes numerous other tax law changes. The provisions in the act will generally apply to tax years 2005 and 2006" (*Congressional Budget Office Cost Estimate: H.R. 3768* 2005, 1).

It pointed out that "the act suspends the thresholds on deductibility of personal casualty

losses for those that are attributable to Hurricane Katrina," and "individuals in the disaster area who lost income due to the hurricane will be allowed to use their 2004 income when calculating their earned income tax credit and child tax credit" (*Congressional Budget Office Cost Estimate: H.R. 3768* 2005, 2–3).

8.10   2005 Gulf Opportunity Zone Act

In 2006, the IRS summarized that "the Gulf Opportunity Zone Act of 2005, in general, expands the provisions of the Katrina Emergency Tax Relief Act of 2005 to those affected by Hurricanes Rita and Wilma as well as Katrina" (Internal Revenue Service 2006).

8.11   2005 Deficit Reduction Act

The Deficit Reduction Act of 2005 made changes to government programs like Medicare, Medicaid, Temporary Assistance for Needy Families (TANF), and student loan programs ("S.1932" 2006).

8.12   2005 Tax Increase Prevention and Reconciliation Act

The Tax Increase Prevention and Reconciliation Act of 2005 contained numerous tax changes. The law 'extended through 2010 [the] reductions in capital gains and dividends tax rates (5 percent for taxpayers in the 15 percent bracket and 15 percent for others) enacted by JGTRRA (2003)." It "increased the AMT tax exemption, last altered in 2004 under WFTRA (2004), to $42,500 for single filers and $62,550 for married filers, and extended this through 2006" ("Major Enacted Tax Legislation, 2000-2009," n.d.). It also "extended,

through 2006, the provisions allowing nonrefundable personal tax credits to offset AMT tax liability in full" (Maguire 2012, 3).

Other miscellaneous changes included accelerating "the inflation adjustment to the exclusion amount for foreign earned income to 2006 from 2008; also, [extending] through 2008 certain exemptions for income of controlled foreign companies," allowing "taxpayers to convert traditional IRA balances into Roth IRAs; [eliminating] the income limit ($100,000) on Roth IRA conversions starting in 2010," and increasing "the age of minor children whose unearned income is taxed as if parent's income from 14 to 18 years old" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.13 2006 Pension Protection Act

The Pension Protection Act of 2006 contained numerous miscellaneous changes, mainly concerning Individual Retirement Accounts (IRAs). They included making "permanent the pension and IRA provisions in EGTRRA (increased contribution limits to IRAs and 401(k)s to $5,000 and $15,000 respectively and catch-up contributions for IRAs, increased limitation on exclusion for elective deferrals, increased annual addition limitation for defined contribution plans)," indexing "certain income limits for IRA contributions for inflation beginning in 2007," and allowed "direct rollovers from retirement plans to ROTH IRAs," and "direct deposit of tax refunds into IRAs," and allowing "tax-free distributions from IRAs to certain public charities from age 70 $\frac{1}{2}$ and older, not to exceed $100,000 per taxpayer" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.14   2006 Tax Relief and Health Care Act

The Tax Relief and Health Care Act of 2006 contains numerous miscellaneous changes to the tax laws, including "extensions and modifications of certain deductions...through 2007." The law also "extended election to include combat pay that is otherwise excluded from gross income in earned income for Earned Income Tax Credit" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

With regard to the AMT, this act

> made the credit for prior year minimum tax liability refundable. Under the act, taxpayers can claim an AMT refundable credit amount that is the greater of (1) the lesser of $5,000 or the unused minimum credit, or (2) 20% of the unused minimum credit. The unused credit is the credit attributable to the previous three tax years. The AMT refundable credit is reduced for taxpayers with adjusted gross incomes in excess of certain threshold amounts. (For joint returns in 2009, the threshold was $250,200.) This provision applies to tax years beginning before January 1, 2013. (Maguire 2012, 3–4)

8.15   2007 U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act

The U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act of 2007 "allowed the tax credits for the work opportunity credit and the credit for taxes paid with respect to employee cash tips to be used in full against both the corporate and individual alternative minimum taxes" (4).

8.16 2007 Mortgage Forgiveness Debt Relief Act

The Mortgage Forgiveness Debt Relief Act of 2007 "excluded debt forgiven on a principal residence from taxable income through 2009" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.17 2007 Tax Increase Prevention Act

The Tax Increase Prevention Act of 2007 "increased the AMT tax exemption to $44,350 for single filers and $66,250 for married filers and extended this through 2007." It also "[e]xtended the allowance of personal nonrefundable credits against the AMT through 2007" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.18 2008 Economic Stimulus Act

On February 13, 2008, at the signing ceremony for the Economic Stimulus Act, President Bush talked about providing "a booster shot for our economy – a package that is robust, temporary, and puts money back into the hands of American workers and businesses" ("President Bush Signs H.R. 5140" 2008).

The law granted "tax rebates of the lesser of net income tax liability or $600 to individual taxpayers ($1,200 for married taxpayers filing joint returns)" and allowed "additional rebates of $300 for each child of an eligible taxpayer." It provided "for a minimum tax rebate of $300 ($600 for married taxpayers filing joint returns) for taxpayers with earned income of at least $3,000" and included "social security retirement benefits and compensation and pension benefits paid to disabled veterans for purposes of determining income eligibility for rebates."

There was a phaseout to these rebates: the act reduced "the amount of such rebates by 5% of the amount that exceeds an adjusted gross income of \$75,000 (\$150,000 for married taxpayers filing joint returns)" (Congress.gov 2008b).

8.19 2008 Housing Assistance Tax Act of the Housing and Economic Recovery Act

Insofar as the Housing Assistance Tax Act relates to taxes, it relates primarily to housing. For example, the law "created a property tax deduction for non-itemizers and a refundable credit for first-time homebuyers" and "increased and simplified the Low Income Housing Tax Credit; simplified the rules for tax-exempt housing bonds; and temporarily extended the state and local mortgage revenue bond program" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

8.20 2008 Public Law 110-343

Public Law 110-343 is commonly referred to as the "Emergency Economic Stabilization Act of 2008." However, this law contains 3 divisions in total:

- Division A: Emergency Economic Stabilization Act

- Division B: Energy Improvement and Extension Act

- Division C: Tax Extenders and Alternative Minimum Tax Relief Act

Before signing the act, President Bush said, "By coming together on this legislation, we have acted boldly to help prevent the crisis on Wall Street from becoming a crisis in

communities across our country. We have shown the world that the United States of America will stabilize our financial markets and maintain a leading role in the global economy." He highlighted the provisions relating to the AMT. He also provided a rationale for the bill as a whole, saying that "as a strong supporter of free enterprise, I believe government intervention should occur only when necessary. In this situation, action is clearly necessary" (George W. Bush 2008).

This law was signed into law on October 3, 2008 ("Actions Overview H.R.1424" 2008). Nolen (2020) describes the bill as "designed to prevent the collapse of the U.S. financial system during the subprime mortgage crisis."

8.20.1 Division A: Emergency Economic Stabilization Act

In addition to establishing the Troubled Asset Relief Program (TARP), Division A of the law included tax provisions like denying "certain employers whose assets have been purchased under the Troubled Asset Relief Program (TARP) a tax deduction for the payment of compensation or other benefits in excess of $500,000 to their executives or other highly compensated employees" and making "tax penalties for excess parachute payments applicable to employers who participate in TARP and their executives" (Congress.gov 2008a).

8.20.2 Division B: Energy Improvement and Extension Act

Some of Division B's provisions relevant to taxes included that it extended "through 2016 the tax credit for residential energy efficient property," eliminated "the limitation on the tax credit for solar electric property," and allowed "a residential energy tax credit for 30% of small wind energy and geothermal heat pump property expenditures" (Congress.gov 2008a).

8.20.3 Division C: Tax Extenders and Alternative Minimum Tax Relief Act

The provisions of Division C that related to individual taxes included that it "increased the AMT tax exemption to $46,200 for single filers and $69,950 for married filers and extended this through 2008" and "extended the allowance of personal nonrefundable credits against the AMT through 2008." The law "extended through 2009 the deduction of state and local sales taxes in lieu of state and local income taxes; the deduction for qualified tuition expenses; the deduction for expenses of school teachers; and the additional standard deduction for real property taxes." Furthermore, it "lowered the threshold for determining the refundable portion of the child tax credit to $8,500 in 2008; extended the tax credit for corporate research activities through 2009; and extended the new markets tax credit through 2009" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

9 President Barack Obama (2009-2017)

9.1 2009 American Recovery and Reinvestment Act (ARRA)

The American Recovery and Reinvestment Act of 2009 was signed into law on February 17, 2009 (Congress.gov 2009). It was intended to address the economic effects of the Great Recession (Levy 2022).

At the signing ceremony, President Obama called ARRA "a balanced plan with a mix of tax cuts and investments" and also said,

> Today does mark the beginning of the end – the beginning of what we need to do
> to create jobs for Americans scrambling in the wake of layoffs; the beginning of

what we need to do to provide relief for families worried they won't be able to pay next month's bills; the beginning of the first steps to set our economy on a firmer foundation, paving the way to long-term growth and prosperity....The [bill]...is the most sweeping economic recovery package in our history. ("Remarks" 2009)

The provisions of the act were numerous, and many are not directly related to taxes. The act says that "the Secretary of the Treasury shall disburse a \$250 payment" (*American Recovery and Reinvestment Act of 2009,* n.d.) "to each eligible individual age 18 or over who, during the three-month period immediately preceding enactment of this Act, was entitled to Social Security benefits, railroad retirement benefits, or veterans disability benefits" (Congress.gov 2009).

There was a tax credit, called the Making Work Pay Credit, of "an amount equal to the lesser of– (1) 6.2 percent of earned income for the taxpayer, or (2) \$400 (\$800 in the case of a joint return)," with a decrease if the "taxpayer's modified adjusted gross income...exceeds \$75,000 (\$150,000 in the case of a joint return)" (*American Recovery and Reinvestment Act of 2009,* n.d.).

The law "increased the AMT tax exemption to \$46,700 for single filers and \$70,950 for married filers and extended this through 2009" and "extended the allowance of personal nonrefundable credits against the AMT through 2009" ("Major Enacted Tax Legislation, 2000-2009," n.d.).

Other tax provisions included that the act "increases in 2009 and 2010 the refundable portion of the child tax credit," "increases to 45% in 2009 and 2010 the rate of the earned income tax credit for taxpayers with three or more qualifying children" and "increases the

threshold amount for the phase-out of such credit for married couples filing jointly," "increases in 2009 and 2010 the Hope Scholarship tax credit for tuition and related expenses and makes a portion of such credit refundable," and "extends the first-time homebuyer tax credit through November 2009" and "increases the amount of such credit to $8,000" (Congress.gov 2009).

The act also "allows an exclusion from gross income in 2009 for up to $2,400 of unemployment compensation" (Congress.gov 2009).

9.2   2010 Patient Protection and Affordable Care Act (ACA) and Health Care and Education Reconciliation Act

These acts created many changes and reforms to health care and health insurance. Most relevant to individual income taxes, they "established [a] penalty for not maintaining minimum essential [health] coverage to be assessed as an additional Federal tax, phased in beginning in 2014" ("Major Enacted Tax Legislation, 2000-2009," n.d.). This penalty is commonly referred to as the individual mandate.

9.3   2010 Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act

The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act was signed into law on December 17, 2010 ("Actions Overview H.R.4853" 2010). President Obama called the act "a substantial victory for middle class families across the country" (Obama 2010). He also said, with regard to the bill,

This bipartisan effort was prompted by the fact that tax rates for every American were poised to automatically increase on January 1 [owing to the expiration of tax laws like EGTRRA and JGTRRA]. If that had come to pass, the average middle class family would have had to pay an extra $3,000 in taxes next year. That wouldn't have just been a blow to them, it would have been a blow to our economy, just as we're climbing out of a devastating recession. (Obama 2010)

At the time, both the House and Senate were controlled by Democrats ("111th Congress (2009-2011)," n.d.; "Complete List of Majority and Minority Leaders," n.d.).

It made four major changes. First, the act states that it

extends through December 31, 2012: (1) the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA), Public Law 107-16; (2) provisions of the Jobs and Growth Tax Relief Reconciliation Act of 2003, Public Law 108-27, reducing income tax rates on dividend and capital gain income; (3) increases in the Hope Scholarship tax credit, the child tax credit, and the earned income tax credit; and (4) increases in the tax credit for adoption expenses and the tax exclusion for employer-provided adoption assistance. (Congress.gov 2010)

Second, it increased "the AMT exemption to $47,450 for single filers and $72,450 for married couples filing jointly through 2011" and extended "the allowance of personal nonrefundable credits against the AMT through 2011" ("Major Enacted Tax Legislation, 2010-2019," n.d.).

Third, it reinstated "the estate, gift, and generation-skipping transfer tax," and allowed "estates of decedents dying after December 31, 2009, and before January 1, 2011, an election

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to apply current estate tax provisions of EGTRRA." However, it made changes to "allow an estate tax exclusion of $5 million, adjusted for inflation for estates of decedents who die in a calendar year after 2011; and...establish a maximum estate tax rate of 35%." Furthermore, the law terminated "the estate, gift, and generation-skipping transfer provisions of EGTRRA and the provisions of this title after December 31, 2012," which meant that from 2013 onwards, the pre-EGTRRA laws on the estate tax would come back and apply (Congress.gov 2010).

Fourth, the act provided a "temporary payroll tax cut" by reducing "the employee Old Age, Survivors, and Disability Insurance (OASDI) tax rate by two percentage points to 4.2 percent for 2011" and reducing "the Self Employment Contributions Act (SECA) tax rate by two percentage points to 10.4 percent for 2011" ("Major Enacted Tax Legislation, 2010-2019," n.d.).

9.4   2011 Temporary Payroll Tax Cut Continuation Act

The Temporary Payroll Tax Cut Continuation Act was signed into law by President Obama on December 23, 2011 ("Actions Overview H.R.3765" 2011). It extended some provisions from the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 relating to the fourth major change discussed in Section 9.3 "for the first two months of 2012" ("Major Enacted Tax Legislation, 2010-2019," n.d.).

The Middle Class Tax Relief and Job Creation Act of 2012 modified the provisions of this act.

9.5   2012 Middle Class Tax Relief and Job Creation Act

The Middle Class Tax Relief and Job Creation Act was signed into law by President Obama on February 22, 2012 ("Actions Overview H.R.3630" 2012). It amended "the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 to extend through the remainder of 2012 the 2% reduction in employment tax rates for employees and self-employed individuals" (Congress.gov 2012). Thus, this law in effect extended some extensions from the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 and the Temporary Payroll Tax Cut Continuation Act of 2011.

9.6   2012 American Taxpayer Relief Act (ATRA)

President Obama signed ATRA into law on January 2, 2013 ("Actions Overview H.R.8" 2013). The day before, he said, "Thanks to the votes of Democrats and Republicans in Congress, I will sign a law that raises taxes on the wealthiest 2 percent of Americans while preventing a middle-class tax hike that could have sent the economy back into recession and obviously had a severe impact on families all across America" (*President Obama Remarks on Fiscal Cliff Agreement Passage* 2013).

The House was controlled by Republicans ("112th Congress (2011-2013)," n.d.), and the Senate was controlled by Democrats ("Complete List of Majority and Minority Leaders," n.d.).

This act was related to addressing the "fiscal cliff": "Numerous tax cuts enacted between 2001 and 2010 were scheduled to expire after 2012, part of the "fiscal cliff" that threatened to cut short nascent recovery from the Great Recession....Congress passed the American

Taxpayer Relief Act of 2012 (ATRA) early on January 1, 2013, to prevent most of the sunsetting tax cuts from expiring" ("What Did the American Taxpayer Relief Act of 2012 Do?," n.d.).

Hook, Boles, and Hughes (2013) said in the *Wall Street Journal* that "the compromise bill, which blocked most impending tax increases and postponed spending cuts largely by raising taxes on upper-income Americans, left a host of issues unresolved and guaranteed continued budget clashes between the parties."

In the provision that is perhaps most relevant to individual income taxes, the law made "permanent the Economic Growth and Tax Relief Reconciliation Act of 2001 for individual taxpayers whose taxable income is at or below a $400,000 threshold amount ($450,000 for married couples filing a joint return)," and amended

> the Internal Revenue Code to: (1) revise income tax rates for individual taxpayers whose taxable income is at or below the $400,000 threshold amount ($450,000 for married couples filing a joint return) and increase the rate to 39.6% for taxpayers whose taxable income exceeds the threshold, (2) set the threshold for the phaseout of personal tax exemptions and itemized deductions at $250,000 for individual taxpayers ($300,000 for married couples filing a joint return), and (3) increase the top marginal estate tax rate from 35% to 40%. (Congress.gov 2013)

The new marginal rates can be seen in Figure 4 (2013 is the first year in which those changes were in effect).

The law established "a permanent $78,750 exemption from the alternative minimum tax (AMT) for married taxpayers filing a joint tax return ($50,600 for individual taxpayers)"

	Nominal							2013				
Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
10.0%	$0	$17,850	10.0%	$0	$8,925	10.0%	$0	$8,925	10.0%	$0	$12,750
15.0%	$17,850	$72,500	15.0%	$8,925	$36,250	15.0%	$8,925	$36,250	15.0%	$12,750	$48,600
25.0%	$72,500	$146,400	25.0%	$36,250	$73,200	25.0%	$36,250	$87,850	25.0%	$48,600	$125,450
28.0%	$146,400	$223,050	28.0%	$73,200	$111,525	28.0%	$87,850	$183,250	28.0%	$125,450	$203,150
33.0%	$223,050	$398,350	33.0%	$111,525	$199,175	33.0%	$183,250	$398,350	33.0%	$203,150	$398,350
35.0%	$398,350	$450,000	35.0%	$199,175	$225,000	35.0%	$398,350	$400,000	35.0%	$398,350	$425,000
39.6%	$450,000		39.6%	$225,000		39.6%	$400,000		39.6%	$425,000	

Note: Last law to change rates was the American Taxpayer Relief Act of 2012.

	Nominal							2012				
Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
10.0%	$0	$17,400	10.0%	$0	$8,700	10.0%	$0	$8,700	10.0%	$0	$12,400
15.0%	$17,400	$70,700	15.0%	$8,700	$35,350	15.0%	$8,700	$35,350	15.0%	$12,400	$47,350
25.0%	$70,700	$142,700	25.0%	$35,350	$71,350	25.0%	$35,350	$85,650	25.0%	$47,350	$122,300
28.0%	$142,700	$217,450	28.0%	$71,350	$108,725	28.0%	$85,650	$178,650	28.0%	$122,300	$198,050
33.0%	$217,450	$388,350	33.0%	$108,725	$194,175	33.0%	$178,650	$388,350	33.0%	$198,050	$388,350
35.0%	$388,350	-	35.0%	$194,175	-	35.0%	$388,350	-	35.0%	$388,350	-

Note: Last law to change rates was the Jobs and Growth Tax Relief Reconciliation Act of 2003.

Figure 4: *Marginal Individual Income Tax Brackets, 2012 and 2013.* Reprinted from Tax Foundation 2013. Note that the rate structure remains very similar after ATRA, except for the addition of a 39.6% rate.

and provided "for an annual inflation adjustment to such exemption amounts" starting in 2013 (Congress.gov 2013).

In addition, the law extended through 2013 "expiring tax provisions relating to individual taxpayers" and certain "expiring energy-related tax provisions" (Congress.gov 2013). Also, the law retained "0/15 percent tax rates on long-term capital gains and qualified dividends for all taxpayers except those in the top income tax bracket" ("Major Enacted Tax Legislation, 2010-2019," n.d.). For those in the "top income tax bracket," the law increased "the capital gains tax rate from 15% to 20%" (Congress.gov 2013).

9.7   2014 Tax Increase Prevention Act

The Tax Increase Prevention Act of 2014 was signed into law on December 19, 2014 ("Actions Overview H.R.5771" 2014). It extended "through 2014" a variety of tax deductions and

credits, such as "the tax deduction of expenses of elementary and secondary school teachers" and the "the tax credit for residential energy efficiency improvements" (Congress.gov 2014).

9.8   2016 Consolidated Appropriations Act

The Consolidated Appropriations Act was signed into law on December 18, 2015 ("Actions Overview H.R.2029" 2015). The Protecting Americans from Tax Hikes Act of 2015 (PATH) was included as a division of it. Provisions of the Consolidated Appropriations Act that were not a part of PATH included delaying "until 2020 the excise tax (Cadillac tax) on the excess benefit from high cost employer-sponsored health care plans" (Congress.gov 2015).

9.8.1   2015 Protecting Americans from Tax Hikes Act (PATH)

The PATH Act, a division of the Consolidated Appropriations Act of 2016, is focused primarily on taxes. It "permanently extended a variety of expiring tax provisions, including the American opportunity tax credit, earnings thresholds for the additional child tax credit and earned income tax credit, the research and experimentation tax credit, and deductibility of sales taxes in lieu of income taxes under the state and local sales tax (SALT) deduction" ("Major Enacted Tax Legislation, 2010-2019," n.d.).

With regard to the "additional child tax credit," the Joint Committee on Taxation explains that

> The credit is allowable against both the regular tax and the alternative minimum tax ("AMT"). To the extent the child tax credit exceeds the taxpayer's tax liability, the taxpayer is eligible for a refundable credit (the additional child

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tax credit) equal to 15 percent of earned income in excess of a threshold dollar amount (the "earned income" formula). This threshold dollar amount is \$10,000 indexed for inflation from 2001. The American Recovery and Reinvestment Act, as subsequently extended by the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 and the American Taxpayer Relief Act of 2012, set the threshold at \$3,000 for taxable years 2009 to 2017....The provision [in PATH] makes permanent the earned income threshold of \$3,000. (Staff of the Joint Committee on Taxation 2015, 2–3)

With regard to the EITC, the Joint Committee on Taxation points out, "A temporary provision most recently extended in the American Taxpayer Relief Act of 2012 ("ATRA") allows taxpayers with three or more qualifying children to claim a credit of 45 percent for taxable years through 2017....Under an additional provision most recently extended in ATRA, the phase-out thresholds for married couples were raised to an amount \$5,000 (indexed for inflation from 2009) above that for other filers. The increase is \$5,520 for 2015." The PATH Act "makes permanent the EITC rate of 45 percent for taxpayers with three or more qualifying children" and "makes permanent the higher phase-out thresholds for married couples filing joint returns" (7–8).

In addition, the act extended through 2016 a number of tax credits, including some relating to energy, like a "tax credit for residential energy efficiency improvements" (Congress.gov 2015).

10 President Donald J. Trump (2017-2021)

10.1 2017 Disaster Tax Relief and Airport and Airway Extension Act

The Disaster Tax Relief and Airport and Airway Extension Act was signed into law by President Trump on September 29, 2017 ("Actions Overview H.R.3823" 2017). It allowed "various tax credits, deductions, and modifications to existing rules for individuals and businesses affected by Hurricanes Harvey, Irma, and Maria." For example, some changes included waiving "the 10% additional tax on early distributions from retirement plans for up to $100,000 in distributions made on or after August 23, 2017, and before January 1, 2019" and making it so that "for the purposes of determining earned income for the earned income tax credit and the child tax credit, taxpayers in the hurricane disaster areas may use earned income from the immediately preceding years" (Congress.gov 2017b).

10.2 2017 Tax Cuts and Jobs Act (TCJA)

The Tax Cuts and Jobs Act was signed into law by President Trump on December 22, 2017 ("Actions Overview H.R.1" 2017). Bender, Hook, and Rubin (2017) said that "at the heart of the plan—the most sweeping since 1986—is a cut in the corporate tax rate to 21% from 35% that is expected to provide a stimulus to the U.S. economy as soon as next year. The tax plan also cuts individual tax rates and aims to simplify the tax code by eliminating some deductions, trimming others, and jettisoning a personal exemption."

Many provisions of the TCJA are temporary through 2025 (Congress.gov 2017a).

The TCJA contained many temporary reductions in marginal tax rates through 2025 (Congress.gov 2017a).

These changes to the individual tax rate brackets can be seen in Table 4 and Table 5, which show the brackets in 2017 and 2018 for those who filed single and married filing jointly:

Table 4: "Tax brackets for single filers," 2017-18. Reprinted from Cole (2018).

2017		2018	
10%	$0 − $9,325	10%	$0 − $9,525
15%	$9,326 − $37,950	12%	$9,526 − $38,700
25%	$37,951 − $91,900	22%	$38,701 − $82,500
28%	$91,901 − $191,650	24%	$82,501 − $157,500
33%	$191,651 − $416,700	32%	$157,501 − $200,000
35%	$416,701 − $418,400	35%	$200,001 − $500,000
39.6%	$418,401 or more	37%	$500,001 or more
Standard deduction:	$6,350	Standard deduction:	$12,000
Personal Exemption:	$4,050	10%	Eliminated

Table 5: "Tax brackets for married taxpayers filing jointly," 2017-18. Reprinted from Cole (2018).

2017		2018	
10%	$0 − $18,650	10%	$0 − $19,050
15%	$18,651 − $75,900	12%	$19,051 − $77,400
25%	$75,901 − $153,100	22%	$77,401 − $165,000
28%	$153,101 − $233,350	24%	$165,001 − $315,000
33%	$233,351 − $416,700	32%	$315,001 − $400,000
35%	$416,701 − $470,700	35%	$400,001 − $600,000
39.6%	$470,701 or more	37%	$600,000 or more
Standard deduction:	$12,700	Standard deduction:	$24,000
Personal Exemption:	$8,100	10%	Eliminated

Note that the tax brackets for the other two filing categories (married filing separately and head of household) also changed.

TCJA "temporarily increases the standard deduction to $24,000 for married individuals filing a joint return, to $18,000 for head-of-household filers, and to $12,000 for all other taxpayers. The amount of the standard deduction is indexed for inflation after 2018 using the

chained CPI." TCJA also "suspends the deduction for personal exemptions" (Congress.gov 2017a).

In addition to these rate changes, there are a number of other provisions. For example, TCJA "requires the chained Consumer Price Index to be used to index the brackets for inflation." TCJA also "modifies the child tax credit to temporarily: (1) increase the credit to \$2,000 (\$1,000 under current law) per qualifying child under the age of 17, and (2) allow a \$500 nonrefundable credit for each dependent of the taxpayer who is not a qualifying child under age 17. The credit is phased out at AGI levels of \$400,000 for married taxpayers filing joint returns and \$200,000 for individuals. The refundable portion of the credit is limited to \$1,400 per qualifying child" (Congress.gov 2017a).

TCJA also "temporarily increases both the exemption amount and the exemption amount phaseout thresholds for the individual AMT. The exemption amount is increased to \$109,400 for married taxpayers filing a joint return (half this amount for married taxpayers filing a separate return), and \$70,300 for all other taxpayers (other than estates and trusts). The phaseout thresholds are increased to \$1 million for married taxpayers filing a joint return, and \$500,000 for all other taxpayers (other than estates and trusts). The amounts are indexed for inflation after 2018" (Congress.gov 2017a).

TCJA also "suspends the overall limitation on itemized deductions, which currently applies when AGI exceeds a specified amount" and "doubles the estate and gift tax exemption amount for decedents dying or gifts made after December 31, 2017, and before January 1, 2026, by increasing the basic exclusion amount from \$5 million to \$10 million. (Under current law, the amount is indexed for inflation occurring after 2011)" (Congress.gov 2017a).

TCJA also "repeals the penalty for individuals who fail to maintain minimum essential

health coverage as required by the Patient Protection and Affordable Care Act (commonly referred to as the individual mandate)" (Congress.gov 2017a).

10.3 2018 Bipartisan Budget Act

The Bipartisan Budget Act of 2018 was signed into law on February 9, 2018 ("Actions Overview H.R.1892" 2018).

This act makes changes to allow "various tax credits, deductions, and modifications to existing rules for individuals and businesses affected by wildfires in California." For example, some changes include waiving "the 10% additional tax on early distributions from retirement plans for up to $100,000 in qualified wildfire distributions" and making it so that "for the purposes of determining earned income for the earned income tax credit and the child tax credit, certain taxpayers affected by the California wildfires may use earned income from the immediately preceding year." In addition, it extended "through 2017" numerous miscellaneous tax credits and other provisions (Congress.gov 2018).

10.4 2018 Fourth Continuing Appropriations, Federal Register Printing Savings, Healthy Kids, Health-Related Taxes, and Budgetary Effects

The Fourth Continuing Appropriations, Federal Register Printing Savings, Healthy Kids, Health-Related Taxes, and Budgetary Effects delayed the "implementation of the medical device excise tax and the high cost employer-sponsored health coverage excise tax ('Cadillac' tax) until 2020 and 2022 respectively" ("Major Enacted Tax Legislation, 2010-2019," n.d.).

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A   Appendix A: Marginal Tax Rates, 1963-1965

	Nominal			1963							
Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets		Marginal Tax Rate	Tax Brackets		Marginal Tax Rate	Tax Brackets		Marginal Tax Rate	Tax Brackets	
	Over	But Not Over		Over	But Not Over		Over	But Not Over		Over	But Not Over
20.0%	$0	$4,000	20.0%	$0	$2,000				20.0%	$0	$2,000
22.0%	$4,000	$8,000	22.0%	$2,000	$4,000	Same as			21.0%	$2,000	$4,000
26.0%	$8,000	$12,000	26.0%	$4,000	$6,000	Married Filing Separately			24.0%	$4,000	$6,000
30.0%	$12,000	$16,000	30.0%	$6,000	$8,000				26.0%	$6,000	$8,000
34.0%	$16,000	$20,000	34.0%	$8,000	$10,000				30.0%	$8,000	$10,000
38.0%	$20,000	$24,000	38.0%	$10,000	$12,000				32.0%	$10,000	$12,000
43.0%	$24,000	$28,000	43.0%	$12,000	$14,000				36.0%	$12,000	$14,000
47.0%	$28,000	$32,000	47.0%	$14,000	$16,000				39.0%	$14,000	$16,000
50.0%	$32,000	$36,000	50.0%	$16,000	$18,000				42.0%	$16,000	$18,000
53.0%	$36,000	$40,000	53.0%	$18,000	$20,000				43.0%	$18,000	$20,000
56.0%	$40,000	$44,000	56.0%	$20,000	$22,000				47.0%	$20,000	$22,000
59.0%	$44,000	$52,000	59.0%	$22,000	$26,000				49.0%	$22,000	$24,000
62.0%	$52,000	$64,000	62.0%	$26,000	$32,000				52.0%	$24,000	$28,000
65.0%	$64,000	$76,000	65.0%	$32,000	$38,000				54.0%	$28,000	$32,000
69.0%	$76,000	$88,000	69.0%	$38,000	$44,000				58.0%	$32,000	$38,000
72.0%	$88,000	$100,000	72.0%	$44,000	$50,000				62.0%	$38,000	$44,000
75.0%	$100,000	$120,000	75.0%	$50,000	$60,000				66.0%	$44,000	$50,000
78.0%	$120,000	$140,000	78.0%	$60,000	$70,000				68.0%	$50,000	$60,000
81.0%	$140,000	$160,000	81.0%	$70,000	$80,000				71.0%	$60,000	$70,000
84.0%	$160,000	$180,000	84.0%	$80,000	$90,000				74.0%	$70,000	$80,000
87.0%	$180,000	$200,000	87.0%	$90,000	$100,000				76.0%	$80,000	$90,000
89.0%	$200,000	$300,000	89.0%	$100,000	$150,000				80.0%	$90,000	$100,000
90.0%	$300,000	$400,000	90.0%	$150,000	$200,000				83.0%	$100,000	$150,000
91.0%	$400,000	-	91.0%	$200,000	-				87.0%	$150,000	$200,000
									90.0%	$200,000	$300,000
									91.0%	$300,000	-

Note: Last law to change rates was the Internal Revenue Code of 1954.

Figure 5: *Marginal Individual Income Tax Brackets, 1963.* Reprinted from Tax Foundation 2013. Note that the brackets for "Married Filing Jointly" have income levels double those of Single/"Married Filing Separately."

	Married Filing Jointly			Married Filing Separately			Single			Head of Household	
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
16.0%	$0	$1,000	16.0%	$0	$500				16.0%	$0	$1,000
16.5%	$1,000	$2,000	16.5%	$500	$1,000		Same as		17.5%	$1,000	$2,000
17.5%	$2,000	$3,000	17.5%	$1,000	$1,500	**Married Filing Separately**			19.0%	$2,000	$4,000
18.0%	$3,000	$4,000	18.0%	$1,500	$2,000				22.0%	$4,000	$6,000
20.0%	$4,000	$8,000	20.0%	$2,000	$4,000				23.0%	$6,000	$8,000
23.5%	$8,000	$12,000	23.5%	$4,000	$6,000				27.0%	$8,000	$10,000
27.0%	$12,000	$16,000	27.0%	$6,000	$8,000				29.0%	$10,000	$12,000
30.5%	$16,000	$20,000	30.5%	$8,000	$10,000				32.0%	$12,000	$14,000
34.0%	$20,000	$24,000	34.0%	$10,000	$12,000				34.0%	$14,000	$16,000
37.5%	$24,000	$28,000	37.5%	$12,000	$14,000				37.5%	$16,000	$18,000
41.0%	$28,000	$32,000	41.0%	$14,000	$16,000				39.0%	$18,000	$20,000
44.5%	$32,000	$36,000	44.5%	$16,000	$18,000				42.5%	$20,000	$22,000
47.5%	$36,000	$40,000	47.5%	$18,000	$20,000				43.5%	$22,000	$24,000
50.5%	$40,000	$44,000	50.5%	$20,000	$22,000				45.5%	$24,000	$26,000
53.5%	$44,000	$52,000	53.5%	$22,000	$26,000				47.0%	$26,000	$28,000
56.0%	$52,000	$64,000	56.0%	$26,000	$32,000				48.5%	$28,000	$32,000
58.5%	$64,000	$76,000	58.5%	$32,000	$38,000				51.5%	$32,000	$36,000
61.0%	$76,000	$88,000	61.0%	$38,000	$44,000				53.0%	$36,000	$38,000
63.5%	$88,000	$100,000	63.5%	$44,000	$50,000				54.0%	$38,000	$40,000
66.0%	$100,000	$120,000	66.0%	$50,000	$60,000				56.0%	$40,000	$44,000
68.5%	$120,000	$140,000	68.5%	$60,000	$70,000				58.5%	$44,000	$50,000
71.0%	$140,000	$160,000	71.0%	$70,000	$80,000				59.5%	$50,000	$52,000
73.5%	$160,000	$180,000	73.5%	$80,000	$90,000				61.0%	$52,000	$60,000
75.0%	$180,000	$200,000	75.0%	$90,000	$100,000				62.0%	$60,000	$64,000
76.5%	$200,000	$400,000	76.5%	$100,000	$200,000				63.5%	$64,000	$70,000
77.0%	$400,000	-	77.0%	$200,000	-				65.0%	$70,000	$76,000
									66.0%	$76,000	$80,000
									67.0%	$80,000	$88,000
									69.0%	$88,000	$90,000
									69.5%	$90,000	$100,000
									71.0%	$100,000	$120,000
									72.5%	$120,000	$140,000
									74.0%	$140,000	$160,000
									75.0%	$160,000	$180,000
									75.5%	$180,000	$200,000
									77.0%	$200,000	-

Note: Last law to change rates was the Tax Reform Act of 1964.

Figure 6: *Marginal Individual Income Tax Brackets, 1964.* Reprinted from Tax Foundation 2013.

Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Over	But Not Over	Marginal Tax Rate	Over	But Not Over	Marginal Tax Rate	Over	But Not Over	Marginal Tax Rate	Over	But Not Over
14.0%	$0	$1,000	14.0%	$0	$500				14.0%	$0	$1,000
15.0%	$1,000	$2,000	15.0%	$500	$1,000	Same as			16.0%	$1,000	$2,000
16.0%	$2,000	$3,000	16.0%	$1,000	$1,500	**Married Filing Separately**			18.0%	$2,000	$4,000
17.0%	$3,000	$4,000	17.0%	$1,500	$2,000				20.0%	$4,000	$6,000
19.0%	$4,000	$8,000	19.0%	$2,000	$4,000				22.0%	$6,000	$8,000
22.0%	$8,000	$12,000	22.0%	$4,000	$6,000				25.0%	$8,000	$10,000
25.0%	$12,000	$16,000	25.0%	$6,000	$8,000				27.0%	$10,000	$12,000
28.0%	$16,000	$20,000	28.0%	$8,000	$10,000				31.0%	$12,000	$14,000
32.0%	$20,000	$24,000	32.0%	$10,000	$12,000				32.0%	$14,000	$16,000
36.0%	$24,000	$28,000	36.0%	$12,000	$14,000				35.0%	$16,000	$18,000
39.0%	$28,000	$32,000	39.0%	$14,000	$16,000				36.0%	$18,000	$20,000
42.0%	$32,000	$36,000	42.0%	$16,000	$18,000				40.0%	$20,000	$22,000
45.0%	$36,000	$40,000	45.0%	$18,000	$20,000				41.0%	$22,000	$24,000
48.0%	$40,000	$44,000	48.0%	$20,000	$22,000				43.0%	$24,000	$26,000
50.0%	$44,000	$52,000	50.0%	$22,000	$26,000				45.0%	$26,000	$28,000
53.0%	$52,000	$64,000	53.0%	$26,000	$32,000				46.0%	$28,000	$32,000
55.0%	$64,000	$76,000	55.0%	$32,000	$38,000				48.0%	$32,000	$36,000
58.0%	$76,000	$88,000	58.0%	$38,000	$44,000				50.0%	$36,000	$38,000
60.0%	$88,000	$100,000	60.0%	$44,000	$50,000				52.0%	$38,000	$40,000
62.0%	$100,000	$120,000	62.0%	$50,000	$60,000				53.0%	$40,000	$44,000
64.0%	$120,000	$140,000	64.0%	$60,000	$70,000				55.0%	$44,000	$50,000
66.0%	$140,000	$160,000	66.0%	$70,000	$80,000				56.0%	$50,000	$52,000
68.0%	$160,000	$180,000	68.0%	$80,000	$90,000				58.0%	$52,000	$64,000
69.0%	$180,000	$200,000	69.0%	$90,000	$100,000				59.0%	$64,000	$70,000
70.0%	$200,000	-	70.0%	$100,000	-				61.0%	$70,000	$76,000
									62.0%	$76,000	$80,000
									63.0%	$80,000	$88,000
									64.0%	$88,000	$100,000
									66.0%	$100,000	$120,000
									67.0%	$120,000	$140,000
									68.0%	$140,000	$160,000
									69.0%	$160,000	$180,000
									70.0%	$180,000	-

Note: Last law to change rates was the Tax Reform Act of 1964.

Figure 7: *Marginal Individual Income Tax Brackets, 1965.* Reprinted from Tax Foundation 2013.

B   Appendix B: Marginal Tax Rates, 1970-1971

<div align="center">Nominal   1970</div>

Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal	Tax Brackets		Marginal	Tax Brackets		Marginal	Tax Brackets		Marginal	Tax Brackets	
Tax Rate	Over	But Not Over	Tax Rate	Over	But Not Over	Tax Rate	Over	But Not Over	Tax Rate	Over	But Not Over
14.0%	$0	$1,000	14.0%	$0	$500				14.0%	$0	$1,000
15.0%	$1,000	$2,000	15.0%	$500	$1,000		Same as		16.0%	$1,000	$2,000
16.0%	$2,000	$3,000	16.0%	$1,000	$1,500		**Married Filing Separately**		18.0%	$2,000	$4,000
17.0%	$3,000	$4,000	17.0%	$1,500	$2,000				20.0%	$4,000	$6,000
19.0%	$4,000	$8,000	19.0%	$2,000	$4,000				22.0%	$6,000	$8,000
22.0%	$8,000	$12,000	22.0%	$4,000	$6,000				25.0%	$8,000	$10,000
25.0%	$12,000	$16,000	25.0%	$6,000	$8,000				27.0%	$10,000	$12,000
28.0%	$16,000	$20,000	28.0%	$8,000	$10,000				31.0%	$12,000	$14,000
32.0%	$20,000	$24,000	32.0%	$10,000	$12,000				32.0%	$14,000	$16,000
36.0%	$24,000	$28,000	36.0%	$12,000	$14,000				35.0%	$16,000	$18,000
39.0%	$28,000	$32,000	39.0%	$14,000	$16,000				36.0%	$18,000	$20,000
42.0%	$32,000	$36,000	42.0%	$16,000	$18,000				40.0%	$20,000	$22,000
45.0%	$36,000	$40,000	45.0%	$18,000	$20,000				41.0%	$22,000	$24,000
48.0%	$40,000	$44,000	48.0%	$20,000	$22,000				43.0%	$24,000	$26,000
50.0%	$44,000	$52,000	50.0%	$22,000	$26,000				45.0%	$26,000	$28,000
53.0%	$52,000	$64,000	53.0%	$26,000	$32,000				46.0%	$28,000	$32,000
55.0%	$64,000	$76,000	55.0%	$32,000	$38,000				48.0%	$32,000	$36,000
58.0%	$76,000	$88,000	58.0%	$38,000	$44,000				50.0%	$36,000	$38,000
60.0%	$88,000	$100,000	60.0%	$44,000	$50,000				52.0%	$38,000	$40,000
62.0%	$100,000	$120,000	62.0%	$50,000	$60,000				53.0%	$40,000	$44,000
64.0%	$120,000	$140,000	64.0%	$60,000	$70,000				55.0%	$44,000	$50,000
66.0%	$140,000	$160,000	66.0%	$70,000	$80,000				56.0%	$50,000	$52,000
68.0%	$160,000	$180,000	68.0%	$80,000	$90,000				58.0%	$52,000	$64,000
69.0%	$180,000	$200,000	69.0%	$90,000	$100,000				59.0%	$64,000	$70,000
70.0%	$200,000	-	70.0%	$100,000	-				61.0%	$70,000	$76,000
									62.0%	$76,000	$80,000
									63.0%	$80,000	$88,000
									64.0%	$88,000	$100,000
									66.0%	$100,000	$120,000
									67.0%	$120,000	$140,000
									68.0%	$140,000	$160,000
									69.0%	$160,000	$180,000
									70.0%	$180,000	-

Note: Rates given here exclude the effect of a 2.5 percent surtax. Last law to change rates was the Tax Reform Act of 1969.

Figure 8: *Marginal Individual Income Tax Brackets, 1970.* Reprinted from Tax Foundation 2013. Note that the single and married filing separately statuses use the same tax brackets.

	Nominal			1971							
Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
14.0%	$0	$1,000	14.0%	$0	$500	14.0%	$0	$500	14.0%	$0	$1,000
15.0%	$1,000	$2,000	15.0%	$500	$1,000	15.0%	$500	$1,000	16.0%	$1,000	$2,000
16.0%	$2,000	$3,000	16.0%	$1,000	$1,500	16.0%	$1,000	$1,500	18.0%	$2,000	$4,000
17.0%	$3,000	$4,000	17.0%	$1,500	$2,000	17.0%	$1,500	$2,000	19.0%	$4,000	$6,000
19.0%	$4,000	$8,000	19.0%	$2,000	$4,000	19.0%	$2,000	$4,000	22.0%	$6,000	$8,000
22.0%	$8,000	$12,000	22.0%	$4,000	$6,000	21.0%	$4,000	$6,000	23.0%	$8,000	$10,000
25.0%	$12,000	$16,000	25.0%	$6,000	$8,000	24.0%	$6,000	$8,000	25.0%	$10,000	$12,000
28.0%	$16,000	$20,000	28.0%	$8,000	$10,000	25.0%	$8,000	$10,000	27.0%	$12,000	$14,000
32.0%	$20,000	$24,000	32.0%	$10,000	$12,000	27.0%	$10,000	$12,000	28.0%	$14,000	$16,000
36.0%	$24,000	$28,000	36.0%	$12,000	$14,000	29.0%	$12,000	$14,000	31.0%	$16,000	$18,000
39.0%	$28,000	$32,000	39.0%	$14,000	$16,000	31.0%	$14,000	$16,000	32.0%	$18,000	$20,000
42.0%	$32,000	$36,000	42.0%	$16,000	$18,000	34.0%	$16,000	$18,000	35.0%	$20,000	$22,000
45.0%	$36,000	$40,000	45.0%	$18,000	$20,000	36.0%	$18,000	$20,000	36.0%	$22,000	$24,000
48.0%	$40,000	$44,000	48.0%	$20,000	$22,000	38.0%	$20,000	$22,000	38.0%	$24,000	$26,000
50.0%	$44,000	$52,000	50.0%	$22,000	$26,000	40.0%	$22,000	$26,000	41.0%	$26,000	$28,000
53.0%	$52,000	$64,000	53.0%	$26,000	$32,000	45.0%	$26,000	$32,000	42.0%	$28,000	$32,000
55.0%	$64,000	$76,000	55.0%	$32,000	$38,000	50.0%	$32,000	$38,000	45.0%	$32,000	$36,000
58.0%	$76,000	$88,000	58.0%	$38,000	$44,000	55.0%	$38,000	$44,000	48.0%	$36,000	$38,000
60.0%	$88,000	$100,000	60.0%	$44,000	$50,000	60.0%	$44,000	$50,000	51.0%	$38,000	$40,000
62.0%	$100,000	$120,000	62.0%	$50,000	$60,000	62.0%	$50,000	$60,000	52.0%	$40,000	$44,000
64.0%	$120,000	$140,000	64.0%	$60,000	$70,000	64.0%	$60,000	$70,000	55.0%	$44,000	$50,000
66.0%	$140,000	$160,000	66.0%	$70,000	$80,000	66.0%	$70,000	$80,000	56.0%	$50,000	$52,000
68.0%	$160,000	$180,000	68.0%	$80,000	$90,000	68.0%	$80,000	$90,000	58.0%	$52,000	$64,000
69.0%	$180,000	$200,000	69.0%	$90,000	$100,000	69.0%	$90,000	$100,000	59.0%	$64,000	$70,000
70.0%	$200,000	-	70.0%	$100,000	-	70.0%	$100,000	-	61.0%	$70,000	$76,000
									62.0%	$76,000	$80,000
									63.0%	$80,000	$88,000
									64.0%	$88,000	$100,000
									66.0%	$100,000	$120,000
									67.0%	$120,000	$140,000
									68.0%	$140,000	$160,000
									69.0%	$160,000	$180,000
									70.0%	$180,000	-

Note: Last law to change rates was the Tax Reform Act of 1969.

Figure 9: *Marginal Individual Income Tax Brackets, 1971.* Reprinted from Tax Foundation 2013. Note that the single and married filing separately statuses now have distinct tax brackets, with slightly different marginal tax rates in places.

C   Appendix C: Marginal Tax Rates, 1978-1979

	Nominal			1978							
Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
0.0%	$0	$3,200	0.0%	$0	$1,600	0.0%	$0	$2,200	0.0%	$0	$2,200
14.0%	$3,200	$4,200	14.0%	$1,600	$2,100	14.0%	$2,200	$2,700	14.0%	$2,200	$3,200
15.0%	$4,200	$5,200	15.0%	$2,100	$2,600	15.0%	$2,700	$3,200	16.0%	$3,200	$4,200
16.0%	$5,200	$6,200	16.0%	$2,600	$3,100	16.0%	$3,200	$3,700	18.0%	$4,200	$6,200
17.0%	$6,200	$7,200	17.0%	$3,100	$3,600	17.0%	$3,700	$4,200	19.0%	$6,200	$8,200
19.0%	$7,200	$11,200	19.0%	$3,600	$5,600	19.0%	$4,200	$6,200	22.0%	$8,200	$10,200
22.0%	$11,200	$15,200	22.0%	$5,600	$7,600	21.0%	$6,200	$8,200	23.0%	$10,200	$12,200
25.0%	$15,200	$19,200	25.0%	$7,600	$9,500	24.0%	$8,200	$10,200	25.0%	$12,200	$14,200
28.0%	$19,200	$23,200	28.0%	$9,500	$11,600	25.0%	$10,200	$12,200	27.0%	$14,200	$16,200
32.0%	$23,200	$27,200	32.0%	$11,600	$13,600	27.0%	$12,200	$14,200	28.0%	$16,200	$18,200
36.0%	$27,200	$31,200	36.0%	$13,600	$15,600	29.0%	$14,200	$16,200	31.0%	$18,200	$20,200
39.0%	$31,200	$35,200	39.0%	$15,600	$17,600	31.0%	$16,200	$18,200	32.0%	$20,200	$22,200
42.0%	$35,200	$39,200	42.0%	$17,600	$19,600	34.0%	$18,200	$20,200	35.0%	$22,200	$24,200
45.0%	$39,200	$43,200	45.0%	$19,600	$21,600	36.0%	$20,200	$22,200	36.0%	$24,200	$26,200
48.0%	$43,200	$47,200	48.0%	$21,600	$23,600	38.0%	$22,200	$24,200	38.0%	$26,200	$28,200
50.0%	$47,200	$55,200	50.0%	$23,600	$27,600	40.0%	$24,200	$28,200	41.0%	$28,200	$30,200
53.0%	$55,200	$67,200	53.0%	$27,600	$33,600	45.0%	$28,200	$34,200	42.0%	$30,200	$34,200
55.0%	$67,200	$79,200	55.0%	$33,600	$39,600	50.0%	$34,200	$40,200	45.0%	$34,200	$38,200
58.0%	$79,200	$91,200	58.0%	$39,600	$45,600	55.0%	$40,200	$46,200	48.0%	$38,200	$40,200
60.0%	$91,200	$103,200	60.0%	$45,600	$51,600	60.0%	$46,200	$52,200	51.0%	$40,200	$42,200
62.0%	$103,200	$123,200	62.0%	$51,600	$61,600	62.0%	$52,200	$62,200	52.0%	$42,200	$46,200
64.0%	$123,200	$143,200	64.0%	$61,600	$71,600	64.0%	$62,200	$72,200	55.0%	$46,200	$52,200
66.0%	$143,200	$163,200	66.0%	$71,600	$81,600	66.0%	$72,200	$82,200	56.0%	$52,200	$54,200
68.0%	$163,200	$183,200	68.0%	$81,600	$91,600	68.0%	$82,200	$92,200	58.0%	$54,200	$66,200
69.0%	$183,200	$203,200	69.0%	$91,600	$101,600	69.0%	$92,200	$102,200	59.0%	$66,200	$72,200
70.0%	$203,200	-	70.0%	$101,600	-	70.0%	$102,200	-	61.0%	$72,200	$78,200
									62.0%	$78,200	$82,200
									63.0%	$82,200	$90,200
									64.0%	$90,200	$102,200
									66.0%	$102,200	$122,200
									67.0%	$122,200	$142,200
									68.0%	$142,200	$162,200
									69.0%	$162,200	$182,200
									70.0%	$182,200	-

Note: Last law to change rates was the Revenue Act of 1978.

Figure 10: *Marginal Individual Income Tax Brackets, 1978.* Reprinted from Tax Foundation 2013.

Nominal						1979					
Married Filing Jointly			Married Filing Separately			Single			Head of Household		
Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over	Marginal Tax Rate	Tax Brackets Over	But Not Over
0.0%	$0	$3,400	0.0%	$0	$1,700	0.0%	$0	$2,300	0.0%	$0	$2,300
14.0%	$3,400	$5,500	14.0%	$1,700	$2,750	14.0%	$2,300	$3,400	14.0%	$2,300	$4,400
16.0%	$5,500	$7,600	16.0%	$2,750	$3,800	16.0%	$3,400	$4,400	16.0%	$4,400	$6,500
18.0%	$7,600	$11,900	18.0%	$3,800	$5,950	18.0%	$4,400	$6,500	18.0%	$6,500	$8,700
21.0%	$11,900	$16,000	21.0%	$5,950	$8,000	19.0%	$6,500	$8,500	22.0%	$8,700	$11,800
24.0%	$16,000	$20,200	24.0%	$8,000	$10,100	21.0%	$8,500	$10,800	24.0%	$11,800	$15,000
28.0%	$20,200	$24,600	28.0%	$10,100	$12,300	24.0%	$10,800	$12,900	26.0%	$15,000	$18,200
32.0%	$24,600	$29,900	32.0%	$12,300	$14,950	26.0%	$12,900	$15,000	31.0%	$18,200	$23,500
37.0%	$29,900	$35,200	37.0%	$14,950	$17,600	30.0%	$15,000	$18,200	36.0%	$23,500	$28,800
43.0%	$35,200	$45,800	43.0%	$17,600	$22,900	34.0%	$18,200	$23,500	42.0%	$28,800	$34,100
49.0%	$45,800	$60,000	49.0%	$22,900	$30,000	39.0%	$23,500	$28,800	46.0%	$34,100	$44,700
54.0%	$60,000	$85,600	54.0%	$30,000	$42,800	44.0%	$28,800	$34,100	54.0%	$44,700	$60,600
59.0%	$85,600	$109,400	59.0%	$42,800	$54,700	49.0%	$34,100	$41,500	59.0%	$60,600	$81,800
64.0%	$109,400	$162,400	64.0%	$54,700	$81,200	55.0%	$41,500	$55,300	63.0%	$81,800	$108,300
68.0%	$162,400	$215,400	68.0%	$81,200	$107,700	63.0%	$55,300	$81,800	68.0%	$108,300	$161,300
70.0%	$215,400	-	70.0%	$107,700	-	68.0%	$81,800	$108,300	70.0%	$161,300	-
						70.0%	$108,300	-			

Note: Last law to change rates was the Revenue Act of 1978.

Figure 11: *Marginal Individual Income Tax Brackets, 1979.* Reprinted from Tax Foundation 2013.