
Middle-Income Tax Rates: Trends and Prospects

By Troy A. Davig and C. Alan Garner

Benjamin Franklin observed that nothing in life is certain except death and taxes. But he was referring to the *existence* of taxes, not the amount. The federal tax liabilities of different income groups change constantly in response to new tax laws and shifting economic circumstances. For example, in recent years, Congress has lowered individual income tax rates, increased child and dependent care credits, and reduced taxes on dividends and capital gains. Much of the economic analysis and political debate about these federal tax changes concerns the impact on upper- or lower-income groups, while the impact on middle-income taxpayers sometimes gets forgotten.

The trends in tax rates can be difficult for middle-income taxpayers, themselves, to discern. Modest revisions to the federal tax code may hardly be noticed in any given year; yet these revisions could build over time into a large change in the middle-income tax rate. Some taxpayers may also find it difficult to determine whether changes in their tax liability are due to legislated changes in the federal tax code or shifts in their own circumstances. For example, shifts in the composition of a household's income between labor income and capital gains could alter the household's tax liability, as could the birth of a new child or unusually large medical bills.

Troy A. Davig is a senior economist and C. Alan Garner is an assistant vice president and economist at the Federal Reserve Bank of Kansas City. Brent Bundick, a research associate at the bank, helped prepare the article. This article is on the bank's website at www.KansasCityFed.org.

This article shows that, while federal tax rates paid by middle-income households have generally declined in recent years, they are likely to rise in the future. The first section defines the effective federal tax rate for middle-income households and discusses the problems in computing this measure. The second section finds that the effective federal tax rate facing middle-income households has trended downward over the last 25 years and is currently low by historical standards. Moreover, the composition of middle-income tax liabilities over this period has shifted away from individual income taxes toward payroll taxes. Finally, the third section shows that under current tax law middle-income taxes are projected to rise in the future.

I. MEASURING MIDDLE-INCOME TAX RATES

People often talk about the tax rate on middle-income Americans, but both “tax rate” and “middle-income” are harder to define than might appear. The tax rate is hard to define partly because households pay a variety of taxes, both directly and indirectly. Likewise, a middle-income group can be defined in various ways, and the tax rates facing two households in the same income category may still turn out to be different. This section summarizes the simplest computation of a household’s federal income tax liability. It then defines effective federal tax rate and middle-income household. Finally, it discusses some of the limitations of these concepts.

Calculating tax liability

To understand the effects that changes in tax laws have on middle-income households, it is useful to briefly describe how the federal government determines a household’s tax liability using the 1040-EZ form (Table 1). This “simple” tax form has 36 pages of instructions, so the discussion omits many details.

Taxable income is calculated as

$$\begin{aligned} \text{Taxable Income} &= \text{Gross Income} - \text{Adjustments} \\ &\quad - \text{Deductions} - \text{Personal Exemptions,} \end{aligned}$$

Table 1

MIDDLE-INCOME HOUSEHOLDS: COMPUTING TAXABLE INCOME AND FEDERAL INCOME TAX, 2006

Gross Income	Includes wages, interest, and pension income
– Adjustments	Includes contributions to retirement plans, moving expenses, and interest paid on educational loans
– Deductions	\$10,000 standard deduction for married couple filing jointly
– Exemptions	\$3,200 for each member of the household
<hr/>	
= Taxable Income	
<hr/>	
10% of taxable income up to \$15,100	
+ 15% of taxable income from \$15,100 to \$61,300	
+ 25% of taxable income from \$61,300 to \$123,700	
– Tax Credits	[= \$700 per child + other dependent care credits]
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= Federal Income Tax	
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where *gross income* includes all income from wages, interest, and pensions. *Adjustments* include contributions to retirement plans, moving expenses, and interest paid on educational loans. A household takes the greater of either the “standard” deduction or their “itemized” deductions. In 2005, the standard deduction for a household with a married couple filing jointly was \$10,000. *Itemized deductions* equal the sum of expenses, such as medical expenses, mortgage interest, charitable contributions, and state and local taxes. *Personal exemptions* work exactly like adjustments and deductions, in that they reduce a household’s taxable income. For the majority of middle-income households, the personal exemption is equal to \$3,200 multiplied by the number of individuals in the household.

Changes in the tax law can be “targeted” when policymakers want to alter the tax treatment for a specific group or activity, or “general” when the intent is to implement a broad-based change in the tax code. For example, a targeted change in the tax law intended to affect households

with children would alter the child tax credit. An example of a general change in the tax law impacting all households would be an increase in the amount of each personal exemption, although this change would affect households unequally depending on the size of the household. A general change in the tax law affecting middle-income households more equally would be to adjust the tax rate schedule or income brackets to which the existing tax rates apply.

What is an effective tax rate?

To summarize broader trends in middle-income tax liabilities, it is desirable to consider more comprehensive measures of taxes and household income. This article relies primarily on the effective tax rates computed by the Congressional Budget Office (CBO). According to the CBO (2004), “Effective tax rates equal the taxes paid by or imputed to households divided by their pretax income.” The effective tax rate in this article is therefore an average tax rate.¹ The taxes paid directly by households include the individual income tax and payroll taxes to fund Social Security and the hospitalization portion of Medicare. In addition, some high-income households are subject to the alternative minimum tax (AMT), although the AMT currently affects few of the middle-income households considered in this article.

Besides the taxes that are paid directly by households to the federal government, the effective tax rate includes taxes imputed to the household sector. In particular, business payroll taxes also help fund Social Security and Medicare’s hospitalization insurance, and corporations pay an income tax based on their profits. Businesses also pay federal excise taxes on various goods and services, such as cigarettes, alcohol, and motor fuels. Although businesses write checks to the government to pay these taxes, economic theory implies that such business taxes are ultimately shifted to households. Thus, to correctly measure the tax rate facing middle-income households, analysts must estimate what share of business taxes is shifted to middle-income taxpayers. Business taxes are passed on to households through complex adjustments in wages, prices, and quantities traded.

Employer-paid social insurance taxes provide an example of how taxes can be shifted. Economic analysis suggests the payroll taxes paid by employers are largely shifted to workers. The exact amount of tax shifting will depend on the sensitivity of labor supply and demand to the wage rate. But if the quantity of labor supplied by workers is relatively insensitive to the after-tax wage rate, which is likely true for many U.S. households, then most of the payroll tax paid by employers will be shifted to workers through lower wages.

Corporate income taxes provide another example of tax shifting. Although corporations pay income taxes directly to the government, households ultimately bear the economic costs of corporate income taxes. Economists do not entirely agree on which households bear the economic cost of corporate income taxes. Much of the cost likely falls on shareholders of the corporation, but some of the economic cost of corporate taxation also may be shifted to workers.

In calculating an effective tax rate, the CBO must make various assumptions to impute household liabilities for taxes paid indirectly.² In particular, excise taxes for such goods as tobacco and alcohol are assigned to households in proportion to their consumption of the taxed goods. The CBO assumes that employer-paid payroll taxes fall entirely on employees. The amount of these taxes is therefore included in an employee's income and also counted as part of the employee's tax liability. Moreover, the CBO assumes corporate income taxes fall on the owners of capital. As a result, these tax payments are allocated to households in proportion to their income from interest, dividends, rents, and capital gains.³

To calculate an effective tax rate, economists must also define an appropriate income measure. The CBO adopts a more comprehensive measure of income than the taxable income measure used in computing federal income tax liabilities. The CBO's comprehensive income measure is pretax cash income plus some in-kind benefits. Pretax cash income includes wages, salaries, self-employment income, rents, interest and dividend income, realized capital gains, retirement benefits, taxes paid by businesses, and some other cash payments. In-kind benefits include Medicare, Medicaid, employer-paid health insurance premiums, food stamps, school lunches and breakfasts, and housing and energy assistance.⁴

What is a middle-income household?

To simplify the description of tax trends, this article focuses on the effective tax rate for middle-quintile taxpayers as calculated by the CBO. The CBO divides the U.S. population into quintiles, or fifths of the income distribution, using the comprehensive income measure described previously.⁵ The effective tax rate for the middle-income quintile is the sum of all taxes falling on households in this quintile divided by the sum of the pretax incomes of households in this quintile.

Although many tax studies divide taxpaying households into quintiles or similar income groups, this approach has been somewhat controversial. Analysts at the Joint Economic Committee (JEC) have criticized the use of tax distribution tables, which report estimates of how a particular tax proposal would raise or lower the tax liabilities and share of taxes paid by households in each quintile. In fact, the JEC (2000) argued that “the notion of a quintile as a fixed economic class or social reality is a statistical mirage.”

Analysts who argue that income quintiles should not be viewed as fixed economic classes raise several valid points. At any given time, two households in the same income quintile may differ greatly in their tax liabilities. For example, two married-couple households with the same income might have different tax liabilities because they have different numbers of children. Or one household might be elderly and thus able to take the tax credit for those 65 years and older, while the other household might be younger.

Moreover, income quintiles are not fixed groups because households can move from one quintile to another without any change in their underlying economic prospects. For example, a low-income worker and a medical student might be in the same tax bracket based on current earnings. But the medical student would likely have much stronger lifetime earnings prospects and might move into a higher income quintile in the near future. Economic theory suggests that consumption and borrowing decisions depend on long-run income, often called permanent income, rather than income for a particular year. Such long-term income measures might give a better basis for assessing the fairness of tax law changes.

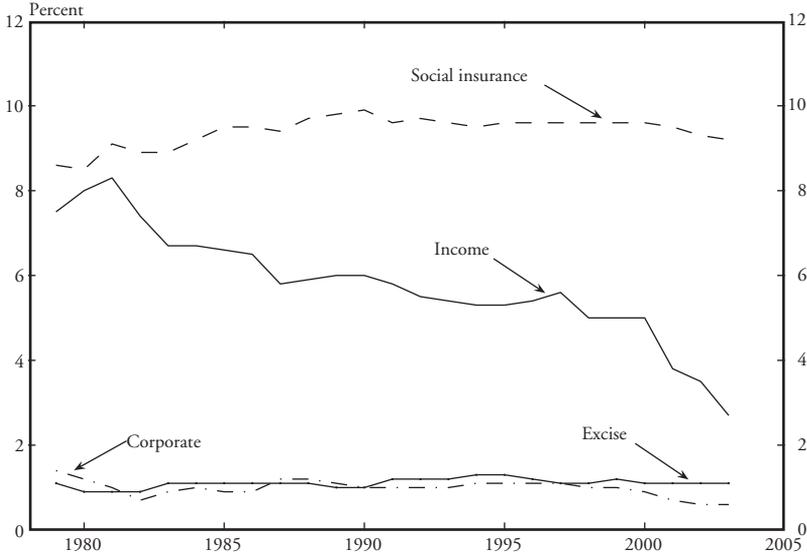
Despite the theoretical appeal of lifetime income measures, many practical difficulties hamper the use of lifetime income distributions in the analysis of tax proposals.⁶ The CBO (2005a) stated that “current data do not allow actual lifetime measures of effective tax rates.” As CBO (2003) noted, trends in the effective tax rate “reflect what has happened to people in the same parts of the distribution over time, not what has happened to the same people.” The CBO effective rates thus provide a useful benchmark for understanding trends in tax liabilities, but the CBO middle-quintile rate may not reflect the lifetime experience of a specific middle-income household or group of households.

Overall, the CBO effective tax rate for middle-quintile households provides a good description of broader tax trends affecting middle-income Americans. Detailed analysis of particular tax proposals would, no doubt, benefit by examining the effects on tax liabilities using a variety of income measures, household definitions, and so forth. Such detailed analysis is beyond the scope of this article. However, to convey some of the differences among middle-income households, this article will examine effective tax rates for certain groups in the middle quintile, such as the elderly and households with children.

II. MIDDLE-INCOME TAXES OVER THE PAST 25 YEARS

Tax policy in the United States has experienced several major changes over the past 25 years. Many of the changes were explicitly designed to benefit middle-income households. To assess the impact of these tax changes, this section documents the rather dramatic decline in federal income tax rates for middle-income households in recent decades. The more recent decline is generally widespread among middle-income households but has varied to some extent across households with different demographic characteristics. This section also documents the stable trend in payroll taxes, both across time and demographic groups. While the total federal tax liability has declined for middle-income households, the differing trends in income and payroll taxes have resulted in a larger portion of their tax liability going toward payroll taxes.

Chart 1
**EFFECTIVE FEDERAL TAX RATES
 (MIDDLE-INCOME HOUSEHOLDS)**



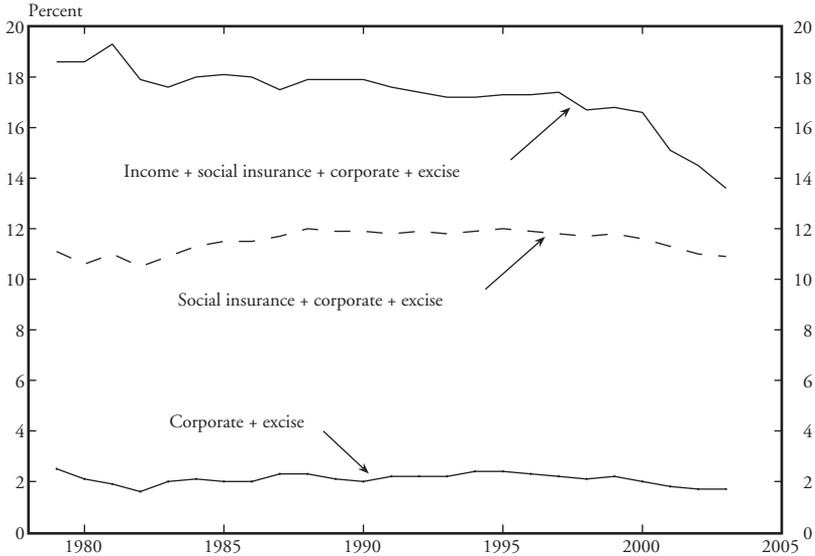
A shrinking tax liability

One clear trend emerges from the CBO calculations—namely, the effective federal income tax rate has trended sharply downward over the past 25 years (Chart 1). This trend reflects the ratification of various tax bills that reduced the federal income tax liability for middle-income households. In contrast, social insurance, corporate, and excise tax rates have remained fairly stable (although the effective tax rate for social insurance was trending up until 1990, after which it exhibits a mild decline). As a consequence, movements in the overall effective federal tax rate largely reflect movements in the income tax rate (Chart 2).

The effective federal income tax rate for middle-income households fell from 7.5 percent in 1979 to 2.7 percent in 2003. This decline can be seen by focusing on three key periods in recent U.S. tax history. The first period occurred with the tax law changes in 1981, which enacted several provisions reducing income tax liabilities.⁷ The second period followed the changes in 1986, leading to a stabilization of the effective

Chart 2

CUMULATIVE EFFECTIVE FEDERAL TAX RATES (MIDDLE-INCOME HOUSEHOLDS)



tax rates.⁸ The third period exhibited sharp declines in the effective tax rate beginning in 1997 and gained further momentum after 2000 with the passage of three new tax bills.⁹

Early in the sample, an uptick in the effective tax rate for middle-income households was evident prior to the 1981 tax reform (Chart 1). The downward trend starting in 1981 stemmed from several tax provisions, such as a general across-the-board reduction in marginal tax rates and increasing adjustments to gross income by establishing individual retirement accounts. Other provisions included relief from aspects of the tax code that increased taxes for married couples (that is, the marriage penalty) and indexing of tax brackets to inflation.¹⁰

Indexation of tax brackets is important from an economic standpoint because middle-income households' nominal, or money, income generally rises with price inflation. Without indexation, inflation pushes taxpayers into higher tax brackets and raises the real value of the taxes they pay, even though the amount of goods and services they can purchase with their income has not increased. For example, the taxable income brackets for 2006 in Table 1 are adjusted for inflation and

therefore are higher than in 2005. Currently, indexation is an important issue surrounding the alternative minimum tax, since the thresholds that trigger the AMT are not indexed to inflation. Although the AMT does not currently affect most middle-income households, inflation is projected to cause more and more households to pay the AMT in the future (box).

The changes in tax law in 1986 had a stabilizing effect on the effective federal income tax for middle-income households, although these changes increased both the amount for the personal exemption and standard deduction (Chart 1). After the changes in 1997, effective federal income tax rates began declining due to the establishment of a \$500 per child tax credit. More recently, with the post-2000 tax bills, tax rates have demonstrated a sharper decline. These modifications lowered marginal tax rates and increased deductions, exemptions, and credits. As the provisions of these changes took effect, the effective federal income tax rate for middle-income households fell from 3.5 percent in 2002 to 2.7 percent in 2003.

Effective social insurance tax rates have been relatively stable in comparison to the federal income tax rate (Chart 1). Social insurance taxes are paid to the federal government to finance Social Security benefits and a portion of Medicare. Social insurance taxes are sometimes referred to as payroll taxes, since they are deducted directly from an employee's paycheck, or FICA taxes, referring to the Federal Insurance Contributions Act that first established the taxes in 1935. By 2006 law, each employee pays 7.65 percent of their income in payroll taxes, with an equal amount matched by employers.¹¹ Although employees don't directly pay the total 15.3 percent, the CBO views employees as bearing the full cost of the tax via lower wages.¹²

The social insurance tax rate exhibited a slight upward trend early in the sample, rising from 8.6 percent in 1979 to 9.9 percent in 1990. This upward trend was due to tax legislation raising the statutory social insurance tax rate. Since 1990, the statutory tax rate has been constant, but the effective social insurance tax rate has drifted downward due to a combination of some middle-income households being net recipients of social insurance programs.

THE ALTERNATIVE MINIMUM TAX

The AMT is a rapidly growing factor in the nation's fiscal outlook. The AMT is a parallel tax system to the regular income tax with more limited tax preferences and its own exemptions and tax rate schedule. Congress enacted the AMT in 1969 to prevent high-income taxpayers from using various tax shelters to pay little or no income tax. The AMT requires households with high enough income to compute their tax liabilities under both the regular income tax and the AMT and effectively pay the higher of the two tax liabilities.

Currently, some households are more likely than others to be affected by the AMT. For example, married couples are more likely to pay the AMT than unmarried taxpayers with similar incomes because the standard deduction for married couples under the regular income tax is more generous than the exemption for married couples under the AMT. Families with many children also tend to do worse under the AMT because of the loss of their personal exemptions. In addition, residents of high-tax states and municipalities fare worse because the AMT does not allow deductions for state and local tax payments.

The AMT will affect a much broader set of taxpayers in the future unless current law is changed. Until 2000, less than 1 percent of households were affected by the AMT, and these were concentrated in the highest income quintile. Because the AMT was not indexed for inflation, price increases since 1969 have greatly reduced the real value of the AMT exemption in the original legislation. In addition, the 2001 and 2003 tax reductions made more households eligible for the AMT by reducing their liabilities under the regular income tax. The number of taxpayers affected by the AMT will rise from about 1 million in 2001 to nearly 30 million in 2010, although Congress has raised the nominal AMT exemption temporarily to keep more households from falling under the

tax (Holtz-Eakin). If the 2001 and 2003 tax breaks expire as currently scheduled, the number of households subject to the AMT would decline in 2011 but then start growing again.

Corporate and excise taxes exhibited less dramatic trends and, combined, account for a relatively small fraction of taxes paid by middle-income households. The effective federal tax rate on corporate income fell approximately 50 basis points from 1999 to 2003, primarily as a result of the changes in tax law after 2000 (Chart 1). The effective federal excise tax rate was fairly stable from 1979 to 2003, averaging 1.2 percent.

Demographic differences

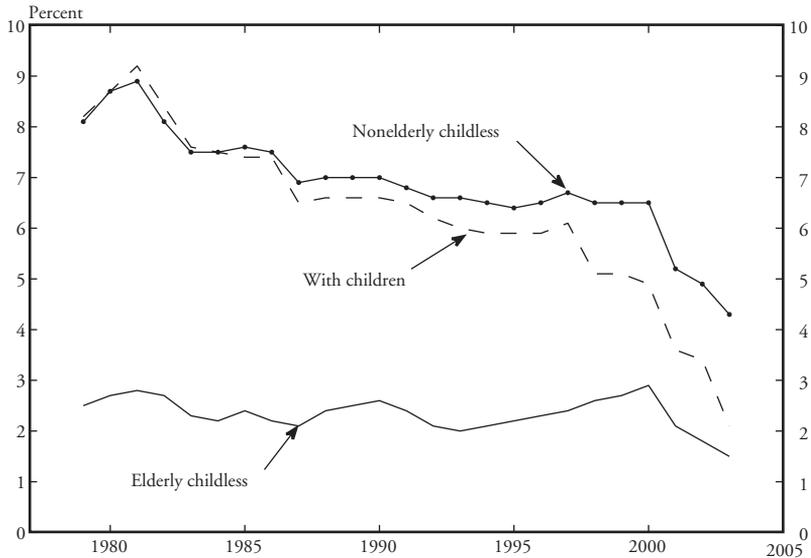
Chart 1 highlights the change in effective tax rates for middle-income households as a whole, but such analysis can mask changes occurring in this group. For example, a middle-income elderly couple with no children living at home has different tax circumstances than a middle-income family with three children. Even if each household's before-tax income is similar, the set of effective tax rates each faces can be dramatically different.

To assess the differences across demographic groups of middle-income households, the CBO reports effective federal tax rates for three demographic groups: households with children, nonelderly childless households, and elderly childless households. In calculating these rates, the CBO accounts for income differences. Accounting for income differences is important because the U.S. tax structure is progressive. Typically, households with children have a higher gross income than households without children, so they may pay higher marginal tax rates, implying higher effective tax rates.

Several trends emerge when accounting for demographic differences (Chart 3). First, the overall effective tax rate for elderly childless households has remained fairly stable, with the exception of the slight upward trend in the 1990s, reversed by the post-2000 changes in tax law. Second, the overall effective tax rate for both nonelderly house-

Chart 3

EFFECTIVE INCOME TAX RATES FOR DIFFERENT MIDDLE-INCOME GROUPS

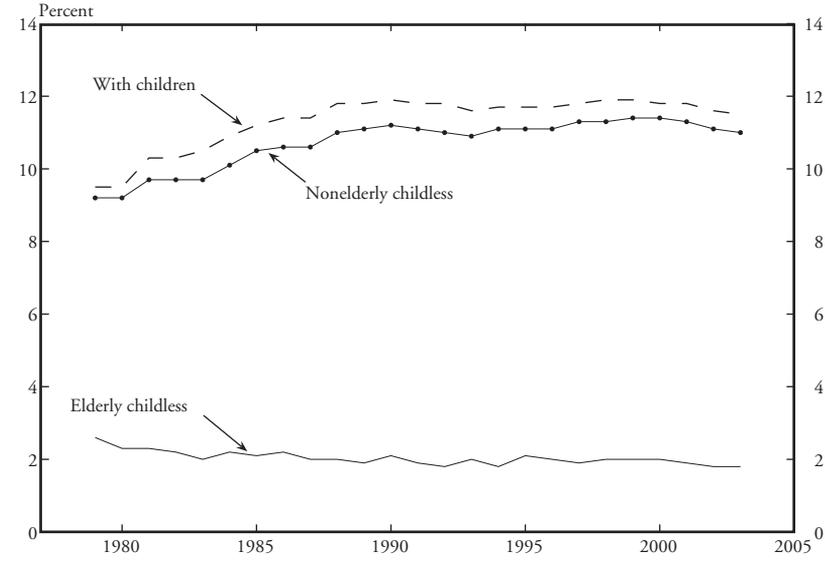


holds without children and households with children has trended down, following the general trend for all middle-income households. Further, nonelderly households with children have experienced sharper declines than households without children. More recently, households with children have experienced marked declines due primarily to the post-2000 changes. For each middle-income group, the effective federal income tax rate is at a 25-year low.

The difference in the downward trends between nonelderly childless households and households with children is a consequence of changes in tax law, instead of income differences. Prior to 1986, the differences between nonelderly childless households and those with children were modest. However, following the changes occurring in 1986, households with children began facing lower effective income tax rates than nonelderly childless households, implying that the tax code was changed to benefit households with children. Specifically, the 1986 bill increased the personal exemption amount from \$1,080 to \$2,000, which impacted all households but had a larger effect on households with children. The difference between effective income tax rates

Chart 4

EFFECTIVE PAYROLL TAX RATES FOR DIFFERENT MIDDLE-INCOME GROUPS



remained relatively stable until the changes in 1997, which established a \$500 child tax credit. Following the post-2000 changes in tax law, effective income tax rates continued to widen between these two groups due to the increases in the child tax credit and dependent care credits.

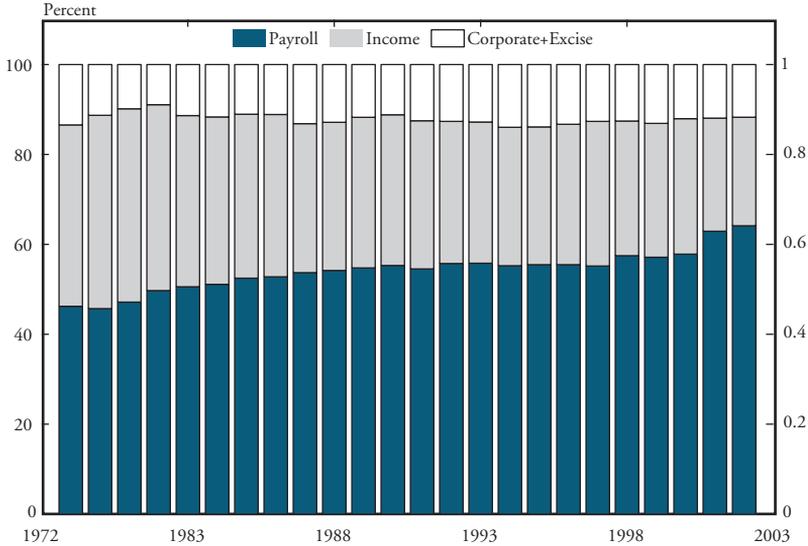
In contrast to income taxes, effective federal social insurance tax rates trended upward and leveled off around 1990 for households with children and nonelderly households without children (Chart 4). The steady rise reflected increasing statutory payroll tax rates, with the last increase occurring in 1990. Elderly households without children have seen steady social insurance tax rates, reflecting the small fraction of payroll taxes paid by elderly households who earned income subject to payroll taxes and were also eligible for old-age social security benefits.

The changing composition of the tax liability

The falling trend in federal income taxes and the rising, or steady, trend in payroll taxes have a clear implication for middle-income households. A larger fraction of their tax liability is devoted to payroll taxes.

Chart 5

SHARE OF MIDDLE-INCOME FEDERAL TAXES



That is, the mix between federal income taxes and payroll taxes has shifted decisively toward payroll taxes. Since payroll taxes are paid only up to a certain amount of income, payroll taxes comprise a larger share of the tax liability for low- and middle-income households versus high-income households. Mitrusi and Poterba (2000) estimated that payroll taxes were higher than federal income taxes for 44 percent of all U.S. households in 1979, and that percentage increased to 67 percent in 1999. This compositional shift is also evident in aggregate measures. Before 1963, revenue from federal income taxes was more than double the revenue from payroll taxes. Currently, the revenues from payroll taxes and from income taxes are nearly equal.

The magnitude of changes occurring in the composition of the tax liability for middle-income households can be quantified using CBO data. Personal federal income taxes as a share of federal taxes dropped from 40 percent in 1979 to 24 percent in 2002 (Chart 5). In contrast, payroll taxes as a share of federal taxes rose substantially, from 46 percent in 1979 to 64 percent in 2002. Corporate and excise taxes fluctuate between 9 and 14 percent, but exhibited no clear

trend. Incorporating state taxes into the tax liability would lower these percentages, but given the relative stability of state income taxes, the general trend toward a greater relative share of revenues coming from payroll taxes is the same (Appendix).

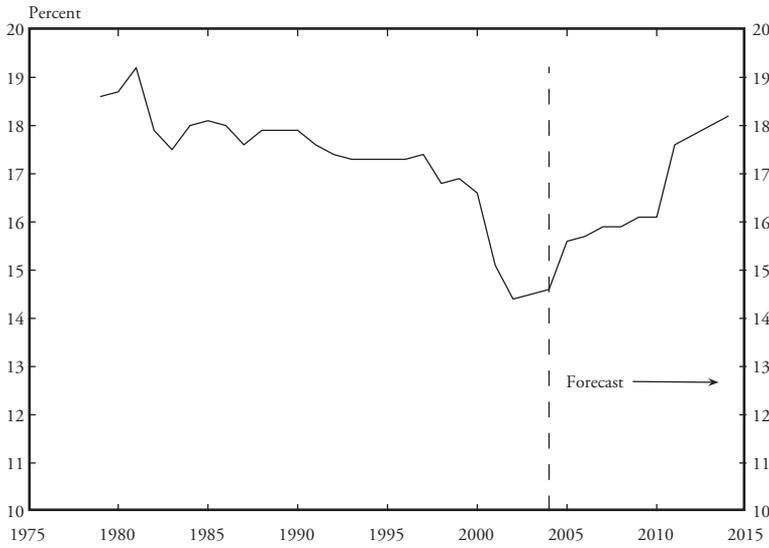
In general, one way to view the changing composition of the tax liability for middle-income households is that their total tax liability, or total tax “pie,” has shrunk; while the compositional effects indicate the share, or size of the “slices,” has clearly changed and shifted toward payroll taxes.

III. A DIFFERENT PICTURE GOING FORWARD

The post-2000 tax changes have dramatically reduced the effective tax rate on middle-income households. However, these laws are not permanent and are set to expire in the coming years. In fact, the decline in income taxes for middle-income households over the past 25 years is likely to be completely reversed over the next ten years. For example, the uniformly lower marginal tax rates established by one of the post-2000 tax bills will expire in 2011, when the lower rates will revert to considerably higher rates. Lower tax rates on capital gains and dividends will expire in 2009, and provisions extending relief from the alternative minimum tax already expired in 2005. The remaining provisions extending relief from marriage penalties, higher child credits, and dependent care credits will expire in 2011. In sum, the existing tax laws are set to impose a substantially larger tax liability on many U.S. households. This section addresses how the expiration of the post-2000 tax bills will impact the effective tax rates for middle-income households in the coming years.

A sharp reversal

The path of tax liabilities for middle-income households is set to change course in the near future due to the expiration of various tax provisions. The CBO reports ten-year forecasts of effective tax rates for each income quintile based on existing law. Of course, laws can always change, so the forecasts are conditional on the current laws not changing. Nonetheless, the federal government faces future budgetary

*Chart 6***TOTAL EFFECTIVE FEDERAL TAX RATE AND FORECAST FOR MIDDLE-INCOME HOUSEHOLDS**

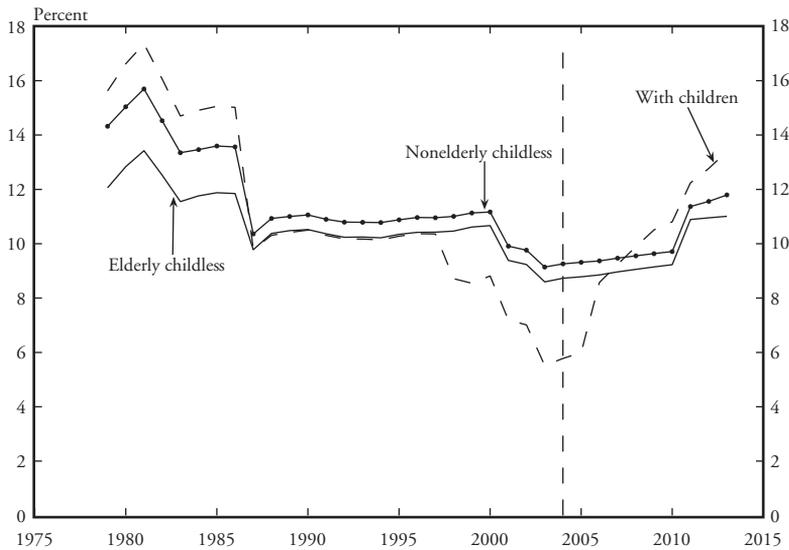
pressures from several different sources, such as fiscal obligations stemming from Social Security and Medicare, suggesting the downward trend in income taxes is unlikely to continue (Hakkio).

The lowest overall effective rates occurred from 2002 to 2005, when they ranged from 14.4 percent to 14.6 percent (Chart 6). After 2004, many features of the post-2000 legislation are set to expire, leading to a gradual rise until 2010. Key factors contributing to the rise in the effective rate until 2010 will be the impacts of the AMT, which is not indexed to adjust with inflation, and real income growth, pulling households into higher tax brackets. Other factors will include a decline in the child credit and the expiration of provisions that diminish marriage penalties.

The most dramatic change will occur in 2011, when the provisions of all three major post-2000 tax bills expire. The overall effective tax rate will jump from 16.1 percent in 2010 to 18.2 percent in 2014. After 2011, the increase will stem from projected rising real income growth, driving households into higher tax brackets, and the extending scope of the AMT.

Chart 7

EFFECTIVE FEDERAL INCOME TAX RATES FOR DIFFERENT MIDDLE-INCOME GROUPS

*Demographic differences going forward*

Among middle-income households, those with children have experienced the greatest decline in effective federal tax rates following the post-2000 tax bills. Following the changes in 1986, an elderly couple with no children at home with the same income as a household with two dependent children faced essentially the same effective tax rate. Starting with the 1997 changes, households with children have seen a dramatic fall in the federal effective tax rate, culminating with more dramatic falls with the post-2000 tax bills. However, the picture sharply reverses going forward; households with children will face the largest tax increases among middle-income households as the provisions in the post-2000 tax bills expire.

The CBO calculates effective tax rate projections for middle-income households but does not report the projections by demographic group. In this section, the demographic groups are defined essentially the same as they are by the CBO and TAXSIM, the National Bureau of Research's tax simulation program, which is used to compute the effec-

tive income tax rates for the different groups going forward.¹³ The definitions for nonelderly childless and elderly childless households are the same as the CBO. However, TAXSIM requires the exact number of children as input to compute a household's tax liability. As a benchmark, subsequent calculations refer to households with two children, noting that households with a different number face alternative tax circumstances, but the general pattern established by two-children households provides a general picture for households with children.

To assess how future tax law affects different demographic groups, the income for each group is assumed to be equal to the average income for middle-income households as reported by the CBO in 2003. Nominal household income is assumed to then grow at the sample average of 4 percent. This approach has the disadvantage of masking inherent income differences between groups but has the advantage of controlling for income, allowing a focus directly on how existing tax law differs in its treatment of various household types. To keep the analysis simple, the standard deduction is taken for each demographic group.¹⁴

Using TAXSIM, each household type experiences a sharp reversal in effective tax rates in the coming years (Chart 7). The effective federal income tax rate for households with two children is projected to double from 2004 to 2013. Elderly households and nonelderly households without children face a more gradual increase until 2011, when they experience a jump in tax rates stemming from the expiration of tax provisions. Another striking change is that each demographic group is assumed to have the same income yet faces a substantially different effective tax rate.

IV. CONCLUSION

As a result of changes in the tax laws beginning in the early 1980s and culminating in 2000, the effective income tax rates for middle-income households have reached 25-year lows. At the same time, social insurance taxes have been relatively stable, causing the composition of federal tax liabilities to shift away from individual income taxes toward payroll taxes.

Keeping middle-income tax rates at current low levels, however, will be a formidable challenge in the years ahead. Even under current law, the effective tax rates imposed on middle-income households are forecast to rise sharply. With the federal government running a substantial deficit, increases in middle-income taxes might be needed to move the budget closer to balance. A recent CBO report focusing on long-run trends in the U.S. budget reports that the deficit will be a staggering 6.5 percent of gross domestic product by 2050. Although economic growth and government spending restraint can help to narrow the deficit, much bigger fiscal problems are on the horizon. Large unfunded liabilities of Social Security and Medicare, plus the challenges facing state and local governments in funding education, Medicaid, and public employee retirement, all imply that middle-income households can expect sharp tax increases going forward. In light of these fiscal pressures, the rising tax rates under existing laws are probably best viewed as a “lower bound” on future taxes.

APPENDIX

DIFFERENCES IN STATE INCOME TAX RATES

In addition to federal taxes, state taxes play a substantial role in the total tax liability for households and the variation in state tax rates can be large (Chart 1A).¹⁶ For example, several states do not impose an income tax, some states only impose income taxes on dividend and interest income, and some states have marginal tax rates over 9.0 percent.¹⁷ In fact, the differences in income tax rates across states are greater than the recent decline in the effective federal income tax rate. States also vary dramatically in the degree of progressivity of their tax structure—for example, Missouri has ten income brackets, whereas Colorado has a 4.63 percent flat state income tax.¹⁸

Unfortunately, the CBO does not report a breakdown of effective tax rates at the state level. So, to gauge how effective tax rates vary across states, the results in this box use the National Bureau of Economic Research's TAXSIM program. TAXSIM uses U.S. tax laws and IRS data to perform a microsimulation of the tax systems at both the federal and state level. The program has encoded the tax laws from 1977 to 2013. In essence, TAXSIM is a tax calculator that simply recreates what a tax accountant would do.¹⁹

Not only do tax laws vary from state to state, but so does income, which matters when computing effective tax rates if states have a progressive tax structure. Accurately estimating effective tax rates at the state level then also requires adjusting for incomes, since household incomes can substantially vary from one region to another. For example, the median income for a four-person family in 2002 was \$82,406 in New Jersey and \$47,550 in West Virginia. Median income data, broken down by state, for four-person households from the Census Bureau is used as the income measure for a middle-income household. Using this data in TAXSIM, and assuming a four-person household has two children, allows computation of income taxes by state.

Despite a great deal of variability, the average effective state income tax rate has remained fairly stable over the past 25 years (Chart 1B). A slight surge in rates was apparent in the early 1980s, undone to some extent later that decade. However, the overall trend has been remarkably

flat, averaging just over 3 percent. To capture the variability, Chart 1B also provides the average of the ten states with the highest average effective income tax rates and the ten lowest over the sample period. The difference fluctuates around 6 percent, a rather large value that reflects the great deal of variability of tax treatment of income across states.

Chart 1A

EFFECTIVE STATE INCOME TAX RATE DISTRIBUTION, 2002

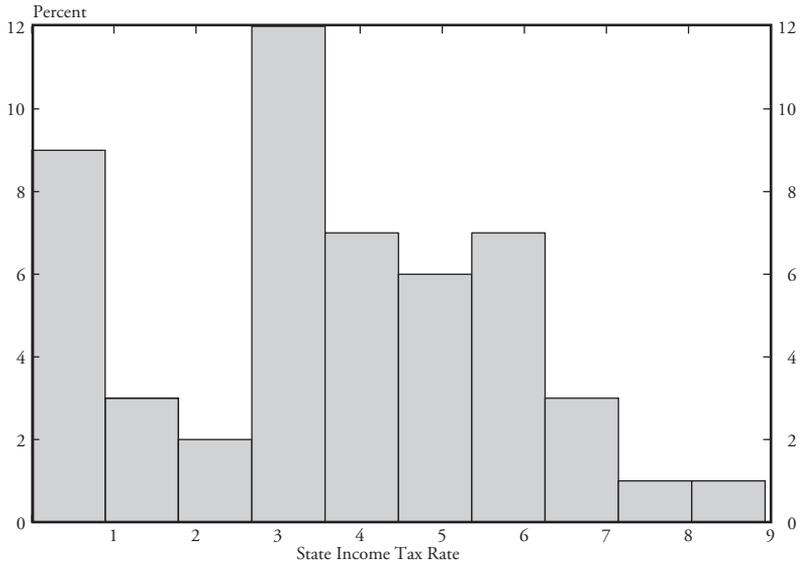
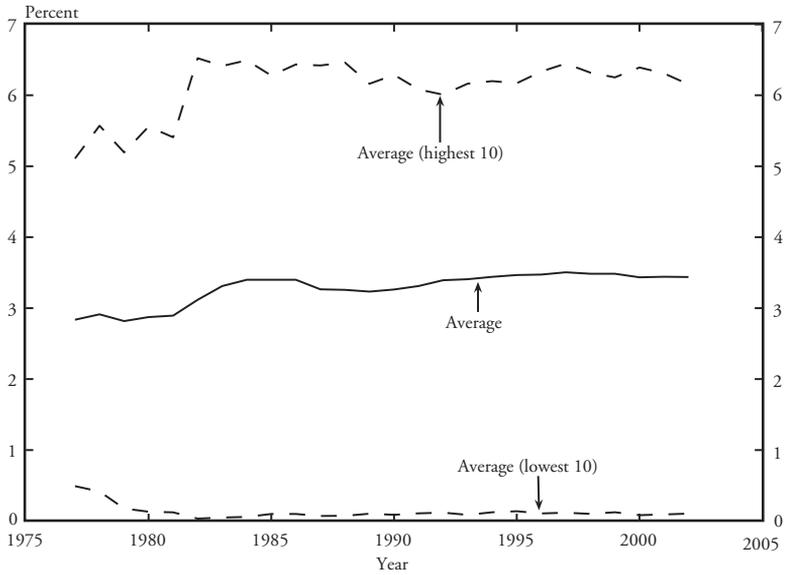


Chart 1B

EFFECTIVE STATE INCOME TAX RATES



ENDNOTES

¹Although the average tax rate is considered here, economic theory generally emphasizes the marginal tax rate, the tax rate that would be paid on an additional dollar of income. Marginal tax rates affect household incentives because these rates determine how much a worker keeps after taxes when working an extra hour, or how much a saver keeps in extra interest income when depositing another dollar in a savings account.

²The total economic costs of a tax may exceed the amount of directly or indirectly paid taxes because taxes create economic inefficiencies. Not only do taxes transfer resources from households to the government, but they distort private decisions in ways that may reduce total output. Measuring such inefficiencies, however, is beyond the scope of this article.

³The CBO calculation of the effective tax rate excludes certain taxes, such as estate and gift taxes and tariffs, due to uncertainty about the incidence and some data limitations.

⁴The CBO definition of household income is used widely in economic analysis, but some analysts would also question its use. For example, adding in-kind benefits to the income measure can affect how people are ranked in the income distribution, and may also affect perceptions of which income groups benefit least or most from particular tax cuts or increases.

⁵The CBO ranks all people by their comprehensive household income adjusted for the size of the household. The entire population is then divided into quintiles containing the same number of people. Because households vary in size, the CBO quintiles generally contain different numbers of households even though the quintiles contain the same number of people. Households are defined based on people sharing a housing unit, regardless of their relationship. Additional methodological details are available in CBO (2003).

⁶However, researchers have constructed multiyear measures of household income and compared those measures with the usual annual measures. The CBO found that multiyear measures of income and taxes are more evenly distributed than with the annual measures. In addition, the effects of illustrative tax policy changes were more evenly distributed when measured on a multiyear basis.

⁷The tax legislation in 1981 is officially the Economic Recovery Tax Act of 1981.

⁸The legislation in 1986 is officially the Tax Reform Act of 1986.

⁹The 1997 legislation is the Tax Relief Act of 1997. The post-2000 changes refer to the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA), Job Creation and Worker Assistance Act of 2002, and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA).

¹⁰The law requiring indexing of tax brackets to inflation was enacted in 1981 to begin in 1985.

¹¹Self-employed persons pay the full 15.3 percent.

¹²Payroll taxes for Social Security only apply to earnings up to a certain amount (\$94,200 in 2006), and some households are net recipients of social insurance programs. So, the effective tax rate for social insurance is less than 15.3 percent.

¹³See Appendix for details concerning TAXSIM.

¹⁴The analysis assumes a “joint” filing status for non-elderly childless households and a “head of household” filing status for households with children.

¹⁵The effective tax rates are higher than CBO estimates because the CBO does not assume every household takes the standard deduction.

¹⁶Local taxes are also important, but vary too widely to be included in the present analysis.

¹⁷In 2006, the states with no income tax are Alaska, Florida, Nevada, South Dakota, Texas, Washington, and Wyoming. States that tax only dividend and interest income are New Hampshire and Tennessee. States with a marginal tax rate over 9.0 percent are California and Vermont.

¹⁸Other states with flat income tax rates in 2006 are Illinois (3 percent), Indiana (3.4 percent), Massachusetts (5.3 percent), Michigan (3.9 percent), and Pennsylvania (3.07 percent).

¹⁹Feenberg and Coutts provide an introduction to the TAXSIM model.

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