Effective Marginal Tax Rates, Part 2: Reality

By Alex Brill and Alan D. Viard

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This article concludes a two-part series on effective marginal tax rates (EMTRs) and the U.S. individual income tax system. The EMTR is the change in tax liability that occurs when an additional dollar of income, here taken to be labor income, is earned. In an income tax system, the EMTR measures the impact of taxes on the incentive to earn. The first article reviewed theoretical issues regarding the potential impact of tax policy on EMTRs and how to calculate EMTRs.[1] This article examines particular items within the current system that cause the EMTR to deviate from the statutory rate structure. Also, we explore how some recent proposals would affect EMTRs, and offer some general policy recommendations.

A. Current System

1. Basic features. The structure of the individual income tax includes the following major components: six progressive statutory marginal tax rates (10, 15, 25, 28, 33, and 35 percent), a system of allowable tax exclusions and deductions that reduce eligible taxpayers' taxable income (and hence their tax liability), and a system of tax credits that reduce tax liability directly. While an inspection of the income tax system demonstrates that average tax rates[2] rise as incomes rise, the same is not always true for marginal tax rates.[3]

As discussed in our first article, the availability of deductions can lower EMTRs. If a taxpayer gives more to charity, pays more in state and local income tax, or incurs more mortgage interest expense as his income rises, a portion of marginal income is not subject to tax. For example, if 20 percent of each additional dollar earned goes to a tax-deductible purpose, a taxpayer facing a 15 percent statutory tax rate on taxable income faces only a 12 percent EMTR on his total income.

Tax credits also affect EMTRs in various ways. If part of each additional dollar earned goes for an item that receives a tax credit, the credit reduces the EMTR in a manner similar to a deduction for the item. Also, most credits are nonrefundable. (The child tax credit is partially refundable and the earned income tax credit, whose value varies with income, is fully refundable;[4] the health-care tax credit, available in conjunction with Trade Adjustment Assistance benefits, is fully refundable, but is not commonly used.) As explained in our first article, nonrefundable credits can lower the EMTR to zero for taxpayers whose tax liabilities are fully offset by the credits.

A prominent reason for divergence of the EMTR from the statutory tax rate is the presence of income-based phaseouts, which we now discuss at greater length.

2. Income-based phaseouts. Several studies have documented the widespread nature of income-based phaseouts, a phenomenon already apparent to taxpayers and tax practitioners. A 1998 Joint Committee on Taxation study[5] and a related article by three of the committee's economists[6] are particularly helpful references. Phaseouts have occasionally drawn attention in the popular press, including a story by Tom Herman in *The Wall Street Journal*.[7]

Government reports have also discussed phaseouts. National Taxpayer Advocate Nina Olsen devoted 13 pages to this issue in her 2006 annual report to Congress,

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[1]Alex Brill and Alan D. Viard, "Effective Marginal Tax Rates, Part 1: Basic Principles," *Tax Notes*, Sept. 8, 2008, p. 969, *Doc 2008-18694*, or *2008 TNT 175-45*.

[2]The average tax rate is federal income tax divided by income.

[3]The marginal tax rate explored here is with respect to pretax wage income. We calculate it as the share of federal income paid

(Footnote continued in next column.)

in taxes from a $1 increase in wages. An alternative specification, which generally yields slightly higher rates, calculates the marginal rate with respect to taxable income.

[4]A recent study notes that the expansion of refundable credits has played a key role in reducing the net federal tax liability of households in the bottom quintile of the income distribution. *See* Roberton Williams, "Refundable Credits Have Cut Taxes for Low-Income Households," *Tax Notes*, July 14, 2008, p. 155, *Doc 2008-14889*, or *2008 TNT 136-38*.

[5]JCT, "Present Law and Analysis Relating to Individuals' Effective Marginal Tax Rates" (JCS-3-98), Feb. 3, 1998.

[6]Thomas A. Barthold, Thomas F. Koerner, and John F. Navratil, "Effective Marginal Tax Rates Under the Federal Individual Income Tax: Death by One Thousand Pin Pricks?" *National Tax Journal*, 51(3), Sept. 1998, pp. 553-564.

[7]Tom Herman, "The Tax Hit You May Not See," *The Wall Street Journal*, Jan. 10, 2007.

released January 9, 2007.[8] In an April 2001 report, the JCT staff also identified phaseouts as a source of tax complexity.[9] Both Olsen and the JCT staff recommended the elimination of many phaseouts.

Table 1 lists the 2009 income ranges for 19 phaseouts, whether the ranges are inflation indexed, and the year in which the phaseouts initially took effect.[10] Ranges are shown separately for each filing status for which the ranges differ, except that married filing separately is not shown. The phaseouts are listed in ascending order of the income level at which the phaseout begins for married couples.[11]

The phaseouts cluster at a few income intervals. A married couple with income between $110,000 and $120,000 in 2009 could, in principle, be subject to four phaseouts: child credit, HOPE/lifetime learning credits, interest exclusion on educational savings bonds, and the D.C. homebuyer credit. Similarly, an unmarried household with income between $75,000 and $84,150 in 2009 could, in principle, be subject to three phaseouts: child credit, educational savings bonds, and the D.C. homebuyer credit. Of course, it is unlikely that a taxpayer would qualify simultaneously for all or even many of these credits. Nonetheless, the lack of a coordinated or unified system of phaseouts results in taxpayers at a given level of income facing a wide range of possible EMTRs based on their eligibility for various credits.

A recent phaseout that applies only in 2008 (and therefore not included in Table 1) pertains to the stimulus rebates. The rebates are phased out at a 5 percent rate for incomes above $75,000 for unmarried taxpayers and $150,000 for married couples.[12]

The income tax benefits are not the only federal subsidies that result in high effective tax rates. While beyond the scope of this article, both Temporary Assistance for Needy Families and the food stamps program contain program elements that result in high EMTRs on work. Robert Haveman and J.K. Scholz document instances in which effective tax rates for welfare recipients can exceed 66 percent,[13] as do Thomas Fraker, Robert Moffitt, and Douglas Wolf.[14] Daniel Shaviro demonstrates effective tax rates in excess of 100 percent for some households.[15]

How, if at all, do people respond to phaseouts? Tom Herman notes that taxpayers who rely on tax preparers or on software may not be aware of the phaseouts to which they are subject and therefore may be unaware of their true marginal tax rate. Amy Finkelstein examines the effects of a development comparable to the use of tax preparers and tax preparation software, namely the use of electronic toll collection on highways. Finkelstein finds that when tolls are automatically withdrawn from an account, instead of paid manually by the driver, drivers are less sensitive to an increase in the toll. This suggests that taxpayers that use tax preparation software are less discouraged to work as a result of high marginal tax rates caused by phaseouts.[16] Similarly, Raj Chetty, Adam Looney, and Kory Kroft find evidence that consumers are less responsive to tax-induced price changes that are not disclosed in the sticker price (such as changes in sales tax rates) than they are to tax-induced price changes that are reflected on the posted price (such as changes in excise taxes).[17]

3. An example of disparate EMTRs. Because different taxpayers are affected in many different ways by phaseouts, depending on which credits and deductions they claim, it is impossible to present a single ''typical'' example of EMTRs faced by taxpayers. We instead present calculations for a particular household to illustrate the ways in which various provisions can affect EMTRs.

Results are based on the American Enterprise Institute's Individual Tax Calculator, calibrated for a married couple with two children filing jointly for tax year 2009. In this example, one child is 12 or younger and the other child is a college freshman or sophomore. Personal exemptions are claimed for both children under section 151 and both are qualifying children for purposes of the EITC under section 32. The younger child qualifies for the section 24 child credit. The older child's tuition and fees qualify for the HOPE credit under section 25A while child-care costs for the younger child qualify for the child and dependent-care credits under section 21. We do not

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[8]National Taxpayer Advocate, 2006 Annual Report to Congress, pp. 470-482, *available at* http://www.irs.gov/pub/irs-utl/2006_arc_section2_v2.pdf.

[9]JCT, ''Study of the Overall State of the Federal Tax System and Recommendations for Simplification Pursuant to Section 8022(3)(B) of the Internal Revenue Code of 1986'' (JCS-3-01), Apr. 2001, vol. 1 , p. 67, *available at* http://www.house.gov/jct/s-3-01vol1.pdf.

[10]The phaseouts are in the following code provisions: dependent-care credit, section 21(a)(2); credit for the elderly and disabled, section 22(d); adoption credit, section 23(b)(2); child credit, section 24(b); education credits, section 25A(d); savers credit, section 25B(b); EITC, section 32(b); first-time homebuyer credit, section 36; alternative minimum tax exemption, section 55(d)(3); above-the-line deduction for performing artists, section 62(b)(1)(C); Pease limitation on itemized deductions, section 63; taxation of Social Security benefits, section 86; education savings bonds, section 135(b)(2); personal exemption, section 151(d)(3); conventional IRA, section 219(g); student loan interest deduction, section 221(b)(2); Roth IRA, section 408A(c); education IRA, section 530(c); and D.C. homebuyer credit, section 1400C(b).

[11]For inflation-adjusted ranges, the authors computed the 2009 values using Consumer Price Index data for September 2007 through August 2008 and applying the rules in the relevant code sections.

[12]Section 6428(d), as amended by section 101(a) of P.L. 110-185, 122 Stat. 614 (enacted Feb. 13, 2008).

[13]''Taxes, Transfers, and Welfare Reform,'' *National Tax Journal*, 47(2), June 1994, pp. 417-434.

[14]''Effective Tax Rates and Guarantees in the AFDC Program, 1967-1982,'' *Journal of Human Resources*, 20(2), Spring 1985, pp. 251-263.

[15]''Effective Marginal Tax Rates on Low-Income Households,'' Employment Policies Institute, Feb. 1999, *available at* http://www.epionline.org/studies/shaviro_02-1999.pdf.

[16]''E-ZTax: Tax Salience and Tax Rates,'' National Bureau of Economic Research, Working Paper 12924, Feb. 2007.

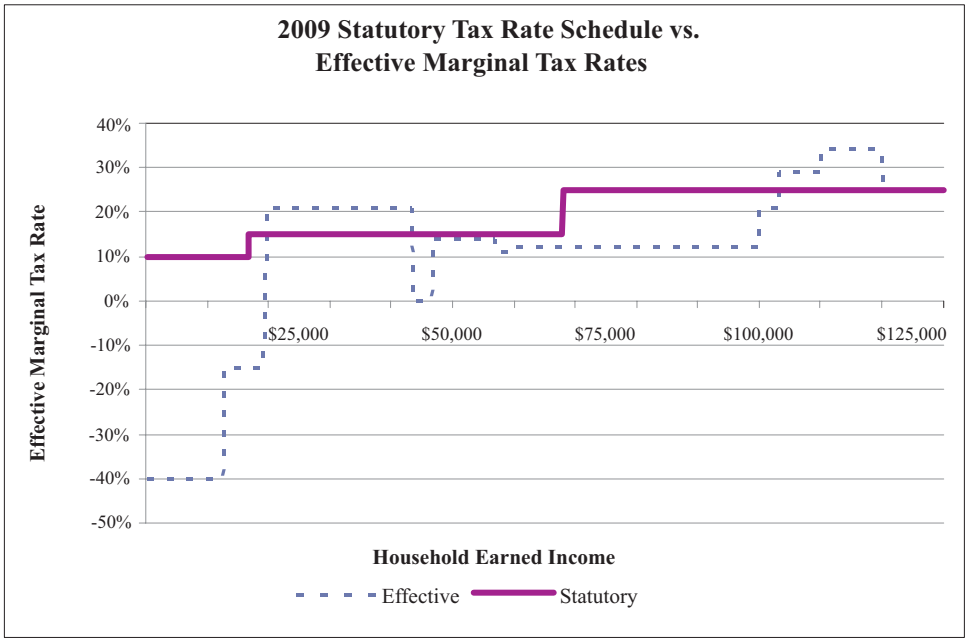
[17]''Salience and Taxation: Theory and Evidence,'' *American Economic Review*, forthcoming.

Table 1: Phaseout Ranges for 2009

Provision	Filing Status	Begins ($)	Ends ($)	Indexed?	Year Established
Elderly and disabled credit	Unmarried	7,500	17,500	N	1954
	Married	10,000	20,000 (1 eligible)		
			25,000 (2 eligible)		
Dependent-care credit		15,000	43,000	N	1982
Performing artists deduction		16,000	16,000	N	1987
Earned income tax credit	Unmarried	7,470	13,440 (no children)	Y	1975
		16,420	35,463 (1 child)		
		16,420	40,295 (2 or more)		
	Married	10,600	16,570 (no children)		
		19,540	38,583 (1 child)		
		19,540	43,415 (2 or more)		
Social Security benefit exclusion	Unmarried	25,000	Varies	N	1984
	Married	32,000	Varies		
Savers credit	Single	16,500	27,500	Y	2002
	Head of household	24,750	41,250		
	Married	33,000	55,000		
IRA deduction	Unmarried	55,000	65,000	Y	1987
	Married	85,000	105,000		
HOPE, lifetime learning credits	Unmarried	50,000	60,000	Y	1998
	Married	100,000	120,000		
Education bonds interest exclusion	Unmarried	69,950	84,150	Y	1990
	Married	104,900	134,900		
D.C. homebuyer credit	Unmarried	70,000	90,000	N	1997
	Married	110,000	130,000		
Child credit	Unmarried	75,000	95,000	N	1998
	Married	110,000	130,000		
Student loan interest deduction	Unmarried	60,000	75,000	Y	1998
	Married	120,000	150,000		
First-time homebuyer credit	Unmarried	75,000	95,000	N	2008
	Married	150,000	170,000		
AMT exemption	Unmarried	112,500	247,500	N	1987
	Married	150,000	330,000		
Roth IRA eligibility	Unmarried	105,000	120,000	Y	1998
	Married	166,000	176,000		
Itemized deductions (Pease)		166,800	No upper bound	Y	1991
Adoption credit		182,180	222,180	Y	1997
Education IRA eligibility	Unmarried	95,000	110,000	N	1998
	Married	190,000	220,000		
Personal exemption	Single	166,800	289,300	Y	1991
	Head of household	208,500	331,000		
	Married	250,200	372,700		

claim that this family is the typical taxpayer and we acknowledge that simpler regimes apply to some taxpayers, such as a single, childless individual who rents his housing and lives in a low-tax state. Nevertheless, we view this example as providing a plausible illustration of how taxpayers can be affected by income-based phaseouts and other tax provisions.

We examine changes in the couple's individual income tax liability as earnings rise from zero to $130,000. All income consists of labor earnings, half of which is earned by each spouse. The couple spends 20 percent of their income on items that can be claimed as itemized deductions and another 5 percent on child-care costs. The couple spends enough on college tuition and fees to take full advantage of the available HOPE credit; at income levels above $46,679, for example, the couple spends at least $2,400. At each income point, the tax calculator determines whether the couple optimizes their tax liability by taking the standard deduction or by itemizing; the couple claims the $11,400 standard deduction at income levels below $57,000 and itemizes deductions at higher income levels.



The calculations are based on currently enacted law for 2009[18] with one modification. We assume an extension of the 2008 alternative minimum tax patch; with that extension, the couple remains on the regular income tax throughout the income range we examine.

The dotted line in Figure 1 shows the couple's EMTR for adjusted gross income. The solid line plots the corresponding statutory tax rates regarding taxable income. This chart demonstrates, in one stylized example, how EMTRs can vary significantly from statutory tax rates, both higher and lower.

Some of the key features are the following: The phase-in of the EITC generates a negative 40 percent EMTR at incomes from zero to $12,570; the phaseout of the credit adds 21.06 percentage points to the otherwise-applicable EMTR at incomes from $19,540 to $43,415. The phase-in of the refundable child credit reduces the EMTR by 15 percentage points from $12,550 to $19,217 and the phaseout of the child credit adds 5 percentage points to the otherwise-applicable EMTR from $110,000 to $130,000. The phaseout of the HOPE credit adds 9 percentage points to the EMTR from $100,000 to $120,000. When the couple itemizes deductions, the EMTR is reduced by one-fifth of the statutory tax rate; the EMTR falls by 3 percentage points from $57,000 to $103,125 (when the couple is in the 15 percent statutory bracket) and by 5 percentage points above $103,125 (when the couple is in the 25 percent statutory tax bracket). The presence of personal exemptions, the standard deduction, and the nonrefundable nature of the child-care and HOPE credits delays the advent of positive statutory tax brackets at lower income levels.

Although other examples could be constructed in which EMTRs and statutory rates are more similar, it would be difficult to find any examples when they are always equal. Leonard Burman and Mohammed Adeel Saleem note the large fraction of households for which the EMTR differs from the statutory tax rate,[19] as does the JCT staff.[20]

B. Proposed Changes Affecting EMTRs

As discussed in our first article, a revenue-neutral tax change that raises and lowers tax burdens for different taxpayers must necessarily include offsetting effects on EMTRs. For example, statutory rates could be uniformly lowered, but offsetting base-broadening measures would increase the share of income that is taxable and thereby raise EMTRs. Some of the effects on EMTRs are relatively subtle.

Within this context, we briefly highlight the impact of a few recent tax proposals on EMTRs. We will highlight proposals from four sources: H.R. 3970, the Tax Reduction and Reform Act of 2007, introduced by House Ways and Means Committee Chair Charles B. Rangel, D-N.Y.;[21] tax proposals by Sen. Barack Obama, D-Ill.; tax proposals by Sen. John McCain, R-Ariz.;[22] and tax changes enacted into law in 2008.

1. Earned income tax credit. In H.R. 3970, Rangel proposed doubling, from 7.65 percent to 15.3 percent, the phase-in rate for the EITC for workers with no qualifying children, which would double the maximum value of the credit. This change would reduce EMTRs for taxpayers in the phase-in range. But because the more generous credit would still be phased out, the proposal would raise EMTRs for taxpayers at high-income levels because the larger credit would be phased out over a longer range.

Obama has proposed a more modest expansion of the EITC for taxpayers with three or more children. This proposal would have qualitatively similar effects, reducing EMTRs for larger, low-income families while causing

[18]In addition to the inflation-adjusted values presented in Table 1, we calculate that the 10 percent bracket applies to the first $16,700 of taxable income and that the 15 percent bracket then applies until taxable income reaches $67,900, that the personal exemption is $3,650, and the standard deduction for married couples is $11,400.

[19]"Hidden Taxes and Subsidies," *Tax Notes*, Sept. 15, 2003, p. 1437.

[20]*Supra* note 5, at pp. 15-18.

[21]*See* Summary of H.R. 3970, Tax Reduction and Relief Act of 2007, *available at* http://waysandmeans.house.gov/media/pdf/110/Summary%20for%20Distribution.pdf.

[22]We draw on the Brookings-Urban Tax Policy Center's most recent description of the candidates' tax plans. *See* Leonard E. Burman, Surachai Khitatrakun, Greg Leiserson, Jeff Rohaly, and Eric Toder, *An Updated Analysis of the 2008 Presidential Candidates' Tax Plans: Updated September 12, 2008*, *available at* http://www.taxpolicycenter.org/publications/url.cfm?ID=411749.

other taxpayers to face higher EMTRs because of a lengthening of the phaseout range. Obama has also proposed raising the EITC phaseout range for married couples. For 2009 the proposal would lower the EMTR by 21.06 percentage points between $19,540 and $21,420 while increasing it by the same amount between $43,415 and $45,295.

2. Increase in standard deduction or personal exemption. In H.R. 3970, Rangel also proposed increasing the standard deduction by $425 for singles, $625 for head of household filers, and $850 for married couples. This policy would have modest and conflicting effects on EMTRs. For taxpayers with taxable incomes that are slightly above the boundary that separates one statutory tax rate from another, the EMTR will decline as the increased standard deduction keeps them in the lower tax bracket. However, the proposal would cause some taxpayers to claim the standard deduction instead of itemizing their deductions, which would slightly increase their EMTRs (because they would no longer deduct the portion of each extra dollar of earnings spent on such things as charitable contributions and state and local taxes).

McCain has proposed increasing the personal exemption for dependents, but not for taxpayers and their spouses, to $7,000 by 2016; the exemption may be around $4,300 under current law that year. The increase in the exemption would have the same EMTR-reducing effect as an increase in the personal exemption for taxpayers near the boundaries between brackets. By itself, an increase in the personal exemption would not have the EMTR-increasing effects of an increase in the standard deduction. The McCain proposal would, however, cause a temporary increase in EMTRs in 2009 through 2015 because the full increase in the personal exemption would be available in those years only to taxpayers with incomes below $50,000, with an income-based phaseout of the higher exemption above that income level.

3. AMT. Congress recently enacted an increase in the AMT exemption and allowance of nonrefundable personal credits against the AMT (AMT patch) for 2008, which will prevent more than 20 million taxpayers from paying the AMT this year.[23] The patch will have myriad effects on EMTRs. James Poterba and Daniel Feenberg find that the effect of switching from the ordinary income tax to the AMT results in taxpayers switching both to higher and lower EMTRs, with a modest net impact.[24] (Although the AMT has two statutory tax rates, 26 percent and 28 percent, the income-based phaseout of the AMT exemption creates EMTRs of 32.5 percent and 35 percent in the phaseout range, which helps explain why some taxpayers face higher EMTRs under the AMT.)

4. Taxation of employer-provided health insurance. McCain has proposed repealing the section 106 exclusion for the value of employer-provided health insurance, while allowing such insurance to remain exempt from payroll taxes. The taxability of employer-provided health insurance would modestly increase EMTRs for two reasons.[25] First, if part of each additional dollar of labor earnings takes the form of additional health insurance rather than cash wages, the taxation of insurance would raise EMTRs. Second, the taxation of insurance would raise EMTRs for the converse of the reason that increases in the standard deduction or personal exemption would lower EMTRs; taxpayers near the boundaries between brackets would move into higher brackets because of the additional taxable income.

McCain has also proposed a healthcare tax credit of $2,500 for singles and $5,000 for married couples. This credit would be fully refundable and would lower tax liabilities for most households, but would not affect EMTRs.

5. Refundable credits with phaseouts. Obama has proposed transforming three nonrefundable credits into refundable credits; the section 21 child-care credit, the section 25A HOPE credit: and the section 25B savers credit. The move to refundability would increase EMTRs for those taxpayers who receive a tax reduction as a result of the change. This is because, as discussed in our first article, a nonrefundable tax credit can reduce a taxpayer's EMTR to zero when the credit exceeds the precredit tax liability. Also, Obama's proposals make these credits larger while still phasing them out, resulting in higher EMTRs for taxpayers as the credit is phased out.

C. Policy Recommendations and Conclusion

Our primary recommendation is that income-based phaseouts should generally be abolished. Whether the policies were enacted to limit the budgetary impact of a policy, to affect the progressivity of the tax code, or for other policy reasons, they add to the complexity of the tax code and increase disincentives to work. A few income-based phaseouts, such as those for the EITC, serve legitimate policy goals, but others should be abolished, either by eliminating the relevant tax break or by making it available at all income levels.

Olsen argues that phaseouts should be simplified or eliminated.[26] The JCT staff made a more specific set of recommendations, calling for the elimination of the phaseouts for itemized deductions and personal exemptions, the child tax credit, the dependent-care credit, IRA benefits, the HOPE and lifetime learning credits, the student loan interest deduction, the exclusion for education savings bond interest, and adoption tax benefits.[27] We concur with this list as a minimum objective.

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[23]Sections 101 and 102 of Division C of P.L. 110-343 (enacted Oct. 3, 2008).

[24]"The Alternative Minimum Tax and Effective Marginal Tax Rates," *National Tax Journal*, 57(2), June 2004, pp. 407-427.

[25]This point was made by Jason Furman and Austen Goolsbee, "The Obama Tax Plan," *The Wall Street Journal*, Aug. 14, 2008. *See also* Robert Carroll, "McCain's Health Credit: The Intersection of Health Policy and Tax Policy," Tax Foundation Fiscal Fact 144, Sept. 2008, *available at* http://www.taxfoundation.org/files/ff144.pdf. The Congressional Budget Office also found an increase in EMTRs from a similar proposal by President Bush, *An Analysis of the President's Budgetary Proposals for Fiscal Year 2008*, Mar. 2007, Appendix C.

[26]*Supra* note 8.

[27]JCT, "Study of the Overall State of the Federal Tax System and Recommendations for Simplification Pursuant to Section

(Footnote continued on next page.)

In principle, one could argue that phaseouts are a desirable way to promote progressivity. Like other measures that increase progressivity, they raise EMTRs, but the increase in EMTRs may be less harmful if taxpayers do not perceive them and therefore do not react to them. On the whole, we find that argument unconvincing. To begin with, taxpayer misperceptions can have a variety of effects. For example, even if taxpayers do not respond to specific phaseouts, they may be deterred from earning income by the general awareness that phaseouts exist. Furthermore, phaseouts are a significant source of complexity for those taxpayers not using software.

We also urge the JCT and Treasury's Office of Tax Analysis to provide a detailed analysis of EMTRs for both current law and for major tax proposals. This analysis should extend beyond the calculation of the average EMTR. It should compute the mean and variance of EMTRs for each income group. The Brookings-Urban Tax Policy Center and the Tax Foundation have recently prepared reports on the effect of McCain's and Obama's tax proposals on EMTRs.[28] It would be desirable for the JCT and the Office of Tax Analysis to provide similar analyses that could play an official role in the consideration of large tax proposals.

EMTRs are an important metric for evaluation of the tax code and of proposals to change the tax system. Policymakers in Washington tend to put an enormous focus on the aggregate budget impact of a tax proposal and its effect on average tax burdens across the income spectrum. Without proper focus on the marginal tax rate, and more precisely the EMTR, policymakers risk overlooking the potential distortions that the tax code may impose on decision-making, including the decision to earn income.

8022(3)(B) of the Internal Revenue Code of 1986'' (JCS-3-01), Apr. 2001, Vol. II, pp. 79-91, *available at* http://www.house.gov/jct/s-3-01vol2.pdf.

[28]Kathryn Kim and Jeffrey Rohaly, ''The Impact of the Presidential Candidates' Tax Proposals on Effective Marginal Tax Rates,'' Sept. 30, 2008, *available at* http://www.taxpolicycenter.org/UploadedPDF/411759_candidates_tax_proposals.pdf; Robert Carroll, ''How Do the Presidential Candidates' Tax Plans Affect Taxpayers' Marginal Tax Rates?'' Tax Foundation Fiscal Fact 150, Oct. 2008, *available at* http://www.taxfoundation.org/files/ff150.pdf.