

Vanishing Corporate Income and Government Spending in Distribution Models

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Summary

Many distribution models that are workhorses for tax policy, and more broadly for research on immobility and inequality, are insufficient welfare measures of either the status quo or policy proposals. This paper explores two fundamental modeling problems: The omission of corporate income, and the open-model complication caused by incomplete distribution of government spending and deficit effects.

Capital-gain-realization (CGR) based models understate corporate income, and therefore overstate progressivity, by failing to capture even the corporate net income tax base itself, not to mention the omission of assorted corporate tax expenditures (both of these omissions contrast with the CGR model's income inclusivity with respect to the individual income and payroll taxes). Most damaging is the CGR model's inability to capture deferral, which is the primary tax benefit accorded corporate (and other capital) investment. An inclusive corporate income method is offered as an alternative to both the CGR method and the full-accrual approach (the latter is theoretically desirable, but, as a recent attempt shows, its implementation is problematic), with implications for the status quo, proposals to restructure the corporate tax, and ongoing empirical research on the potential shifting of the burden of the corporate tax.

Traditional models also generally omit the distribution of full government spending and deficit effects. These omissions wouldn't be an issue if there were supplemental models that contemporaneously measured these effects, but that additional modeling is absent from policy discussions, with little warning about these omissions given to distribution model users. Omitting full distribution of government spending and deficit effects biases traditional distribution models in favor of tax cuts and deficit spending, and makes the overall system look more progressive than it really is. In light of recent CBO and other research, these omissions are fixable, or at the very least should be heavily caveated in distributional models.

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I. Introduction

Does the corporate income tax add to progressivity under present law? Has the distribution of capital income increased equality? Does the mortgage interest deduction further individual mobility?

Surprising or not, recent answers to these questions are, respectively: (a) Not so much, and maybe not at all if the corporate tax is assumed to be substantially shifted to labor;¹ (b) Yes;² and (c) Yes.³

These questions reflect the ubiquity of distribution analyses of income (or alternatively, consumption), taxes, and government spending. In more recent decades we've evolved from looking narrowly at taxes paid in one year on a statutory liability (and legalistic taxable income) basis to comprehensively modeling tax incidence, as well as a broader income concept, in the attempt to draw conclusions about equality and mobility.⁴

The distribution endeavor is neither new⁵ nor objectionable. But current distribution models do not generally identify what the models can and can't do well, including general caveats concerning how the three questions above are addressed. Even when warnings are included, the caveats are often presented cryptically.

This paper details two warnings that should accompany most distribution models:⁶

1. Corporate income and more generally the returns to corporate shareholders disappear in most models, distorting results⁷
2. Not fully distributing government spending and federal debt biases results in favor of lower taxes and more debt

¹ Joint Committee on Taxation staff (2013).

² Armour, Burkhauser, and Larrimore (2013).

³ Chetty, Hendren, Kline, and Saez (2013).

⁴ Tax burden and incidence are used interchangeably. Both may differ from legal statutory liability. For recent descriptions of some distribution models, see Congressional Budget Office (2013b), JCT (2013), Cronin et al (2013), Nunns (2012), Rosenberg (2013), and Driessen (2013).

⁵ Practitioners of political economy explored distribution in the 19th century and before. For a 50-year-old example of a comprehensive analysis of taxes and government spending, including all the broad federal taxes and allowing for a shifting of the corporate income tax (one-third shifted to consumers), see Gillespie (1965).

⁶ Other discussions of distribution issues have not concentrated on these two areas. JCT (1993) and Rosenberg (2013) mention, but don't explore or test, the corporate income omission. Standard critiques of distribution analyses tend to focus on classifier or statistical presentation issues, e.g., Fichtner (2004).

⁷ This omission of corporate income in cross-section models is different from the question of whether the decorporatization of U.S. business has affected longitudinal distribution comparisons. For the later critique, see Feldstein (2014), Mankiw (2014), and Reynolds (2014); this critique is partially debunked below in the discussion of capital-gain-realization based distribution models.

II. Vanishing Corporate Income

The corporate tax is the neglected-but-younger-and-complicated sibling in distribution analysis, notwithstanding the tradition of research on business tax incidence.⁸ Tax distribution models at their inception focused on individual taxes and were framed by individual tax returns, with a la carte offerings of payroll taxes, excise taxes, estate and gift taxes, and corporate taxes.⁹

Even with explicit inclusion of the corporate tax, distribution models have been the “Bermuda Triangle” for net corporate income (corporate income subject to the corporate income tax). For decades most of these models have distributed the corporate tax: The staff of the Joint Committee on Taxation in 2013 joined the Congressional Budget Office, the Office of Tax Analysis in the Treasury Department, and the Tax Policy Center, with all four using what are referred to here as “CGR” models that are capital-gain-realization based in distributing the corporate income to individuals. Because corporations are separate entities that are not independently represented in distribution models, a CGR model essentially relies on capital gain realizations by individuals to reflect corporate income accruing to corporate stakeholders.

CGR models generally have distributed an amount far short of the tax code’s statutory definition of corporate taxable income on which the corporate tax is based.¹⁰ This corporate tax distribution contrasts with how the individual income tax return is treated: For distribution models the starting point is adjusted gross income on the tax return (generally much larger than taxable income) and the end result, after inclusion of many tax expenditures as classified by JCT and OTA and other imputations, well exceeds AGI. In comparison, the corporate income

⁸ Harberger (1962) triggered the modern era of business tax incidence research.

⁹ Not everybody distributes estate and gift taxes. See Cronin et al (2013) for additional background on the evolution of distribution models.

¹⁰ Distribution models used by CBO, OTA, and the TPC all have more or less the same structure as the JCT approach. In 2013, the author estimates that AGI not including net corporate income items (more on that below) was roughly \$9 trillion (AGI was \$9.1 trillion in 2012, see <http://www.irs.gov/uac/Tax-Stats-2>; growing that number for 2013 and subtracting \$300 billion to account for overlap with corporate net income yields about \$9 trillion). In JCT’s distribution model for 2013, classifier income, excluding net corporate income items per author’s estimate, is about \$11.2 trillion, using Table 7 from JCT (2013) and adjusting to prevent overlap in counting net corporate income items. So essentially the noncorporate portion of JCT’s income classifier for 2013 is about 25 percent more expansive than the corresponding AGI-less-deficit number, and about 50 percent more expansive than the \$6.125 billion taxable income reported on taxable individual returns (again, growing the 2012 IRS number, which was \$6.25 billion, and subtracting corporate net income, reflected in dividends and realized capital gains, already included at the individual level.) By comparison, the net corporate income included in the distribution model’s classifier, about \$500 billion at 2013 levels as discussed below, is less than 50 percent of corporate income subject to tax (excluding passthrough returns 1120-S, 1120-REIT, and 1120-RIC, per Table 21 of SOI Corporate Income Tax Returns). While there are technical issues that have to be cleaned up in this comparison of distribution inclusiveness to tax bases, this rough comparison shows that the net corporate income imputed to individuals for distribution purposes is much smaller than net corporate income subject to the corporate tax, while noncorporate income allocated to individuals is much larger than either AGI or individual income subject to tax (all the while making sure to avoid double counting).

included in these distribution models is well below the taxable income reported by corporations for tax purposes (and includes no corporate tax expenditures as classified by JCT and OTA). The crux of this asymmetry is the traditional distribution model's mistreatment of the corporate tax system, caused by the model's omission of corporate income.

The necessary focus on individual and family units combined with the foundation of the individual income tax has contributed to myopia about the "other" income tax, the corporate tax.¹¹ It is possible that the sophistication of tax burden analysis, the recognition that all taxes are borne by individuals, caused modelers not to focus on the embedded corporate tax rates contained in their models. One might speculate whether the models would look different had they started with the corporate income tax as the core building block, distributing corporate income (including income linked to corporate tax expenditures involving deferral of tax) and tax to shareholders and others as the first step, and incrementally added the other taxes, including the individual income tax, and income items.

Detailed below are how current models operate, what's wrong with them, and an alternative inclusive corporate income model. Two tests will be applied throughout the analysis: (1) What is the effective corporate tax rate embedded in each distribution model; and (2) How the model handles elimination of the corporate tax via integration, as well as other policy proposals.

A. Corporate Income and Taxes in Current Distribution Models

JCT is the most recent government organization to distribute the corporate income tax, and the JCT staff's transparency permits isolation of the effects of that choice.¹² Consequently, this paper draws on the JCT staff's presentation for 2013 law and levels of income. The 2013 capital-gain-realization-based approach adopted by JCT for corporate income is generally the same method used by CBO, OTA, and TPC (with other institutional differences discussed below as necessary), so there is generality in this exercise.

Table 1 shows a tax distribution before inclusion of the corporate income tax.¹³ This

¹¹ JCT (1993) offered a good discussion of some (but not all) of the issues arising with the distribution of the corporate tax. That study concluded that including more corporate income would be complicated because "allocating corporate profits and retained earnings to shareholders can only be done by making many assumptions about the distribution of stock ownership and then imputing corporate income based on these assumptions," p. 93. JCT (2013) seems to have solved this corporate ownership issue with respect to the distribution of the corporate tax itself, so it is unclear why additional corporate income can't just "ride along" with how the corporate tax is distributed (with special allowance for corporate bondholders, as discussed below in *supra* 20). Unfortunately, while JCT in 1993 started framing these issues, its contribution was diminished because the burden method it explained was not adopted. Also, discussing the corporate issue, as Rosenberg (2013) did more recently, is a good start but is not the same as actually testing the corporate and capital tax rates embedded in the models and exploring biases that the omission of corporate income might cause.

¹² JCT (2013).

¹³ The JCT income classes have been collapsed here, and some interpolations by the author have been made to break out the separate effects for the individual, payroll, and excise taxes, using JCT (2014b), Table A-6, and JCT

approach uses the JCT income classifier that starts with AGI and adds various items (many of them classified as tax expenditures by JCT and OTA), including employers' share of payroll taxes and employers' contributions for health and life insurance.¹⁴ Table 1 excludes corporate taxes and any shifting of noncorporate business income taxes.

The tax rates in Table 1 indicate that in 2013 the individual income tax's progressivity more than offset the regressivity of the other taxes, making the overall federal tax structure (for those taxes included in the distribution) progressive, with an overall tax rate of 18 percent and corresponding rates of 4.8 percent and 26.7 percent for the lowest and highest income groups, respectively.

Included in the notes for Table 1 is a corporate tax rate memorandum that identifies the embedded corporate income tax rate. For 2013, we assume that qualified corporate dividends received by individuals, plus capital gain on the sale of corporate equities by individuals, amount to \$300 billion.¹⁵

This \$300 billion number is important because it constitutes the entirety of overlapping income from the corporate income tax base (including the corporate income on a look-through basis that is realized by individuals selling equities) reflected in Table 1.¹⁶ As explained in the next section, this means that net corporate income as broadly conceived (e.g., as statutorily defined in the tax code) is understated in Table 1.

(2013), Table 9. Consolidating the income classes loses some data distinctions especially when as many as 55 million taxpaying units fall into one class, but the simple five-income-class approach here allows clearer focus on the broader effects of the corporate tax distribution without the distraction of the quirky income definition issues (for example, the heterogeneity of tax units with less than \$10,000 in income).

¹⁴ JCT (2013), p. 22.

¹⁵ Data for 2013 is not available, but the author's assumption is consistent with publicly available dividend and capital gain data from other years. The author assumes \$100 billion of qualified corporate dividends, and \$200 billion of realized capital gain on sale of corporate equities (including corporate sales by passthrough entities). The \$200 billion capital gain number is arrived at by starting with \$500 billion of capital gain realized by individuals who have net capital gain, cut by 50 percent to take account of capital gain unrelated to corporate equities, and reduced by \$50 billion to account for corresponding net capital loss. Realized capital gains by individuals on the sale of corporate equities is correlated with corporate tax payments, so deviations from the numbers assumed here would extend throughout the example, including corporate tax liability. Thus whether the actual number is \$200, \$300 or \$400 billion won't affect this stylized analysis, as the general points made here will still hold.

¹⁶ Corporate interest received by individuals is not included here because it is not paid out of net corporate income, but is instead a deductible corporate expense in arriving at that income. In the same way, corporate wage and salary payments to individuals, deductible in determining corporate income, are not considered equity returns. Realized capital gains on the sale of corporate equities are considered corporate income here, even though there are timing differences in the assignment of that income. Capital gain realized today is what the buyer is willing to pay compared to the seller's basis -- these values may have little to do with the company's current pre-tax income, but over time there should be a correlation between these values and expected pre-tax income and/or potential liquidation value, with liquidation value approximating the accumulation of retained earnings. However, while there may be a correlation, realized capital gains almost always understate the return on investment in corporate equities because of the value of deferrals (realization and other) and tax provisions like step-up in basis.

Table 1. Income and Tax Distribution without Corporate Income Tax, 2013 Levels

Income Class, Returns, and Total Income			Taxes (\$ bil.)					Tax Rates (%)	
Income Class (\$000s)	Returns (mils.)	Total Income (\$ bil.)	Individual Income Tax	Payroll Tax	Excise Tax	Corporate Income Tax	Total Tax	Individual Income Tax Rate	Overall Tax Rate
<30	55	867	-48	71	19	n/a	42	-5.5%	4.8%
30 to 50	31	1224	10	103	14	n/a	127	0.8%	10.4%
50 to 100	42	2958	130	259	26	n/a	415	4.4%	14.0%
100 to 200	25	3230	295	307	21	n/a	623	9.1%	19.3%
200+	<u>7</u>	<u>3226</u>	<u>687</u>	<u>166</u>	<u>8</u>	<u>n/a</u>	<u>862</u>	<u>21.3%</u>	<u>26.7%</u>
All	160	11504	1075	906	88	n/a	2069	9.3%	18.0%

Notes:

Rounding may affect totals. Does not include corporate income tax imputation, nor shift noncorporate business income tax to labor. Income classification and concept follow JCT. Payroll tax includes employee and employer portions. Numbers in red are carried over to Table 5, a summary table.

Corporate Tax Rate Memorandum -- Corporate taxes distributed = **0**. Table includes net corporate income of **\$300** billion (author's assumption) equaling corporate dividends paid to individuals plus capital gain on sale of corporate equities by individuals. Corporate tax rate = $0/300 = 0\%$.

Because Table 1 does not include the distribution of the corporate tax, by definition the embedded corporate tax rate (as described in the corporate tax rate memorandum in Table 1's notes) is 0 percent.¹⁷ As a consequence of Table 1's exclusion of the corporate tax, the distribution and effective rate consequences of omitted corporate income present a different set of issues¹⁸ in Table 1 compared to when the corporate tax is distributed (as in the model used for Table 2 below, which reflects the JCT staff's new approach).¹⁹

Table 2 summarizes what happens to a capital-gain-realization based distribution after the corporate tax is distributed. The results in this table assume that the corporate tax burden is distributed to corporate shareholders and bondholders,²⁰ and the burden of nonbusiness taxes is borne by individuals who are statutorily liable for those taxes (these assumptions will be relaxed below to allow for the shifting of business income taxes to labor when that topic is explored). On the income side, this CGR model treats the distribution of the corporate tax as a simple gross-up addition: The only addition to income is an amount equal to the corporate tax liability itself based on the presumption that this gross-up plus dividend payouts and realized capital gains (hence the CGR appellation as the models are "capital-gain-realization" based) already in the model because they show up in individual income tax returns properly reflect corporate income.

¹⁷ Calculating the embedded corporate tax rate in this paper differs from a simple computation of corporate taxes divided by all income imputed to individuals. An example of the latter can be found in Table 2 in CBO (2012), p. 6.

¹⁸ Because Table 1 doesn't include the corporate income tax, model users either have to ignore, or supply their own narrative about, the effects of the corporate income tax.

¹⁹ But even for Table 1, the omission of corporate income is a problem if table users are interested in the overall distribution of pre- or post-tax income.

²⁰ Table 2 follows the JCT approach for short-run distribution of the corporate tax. JCT distributes some of this tax to labor in the long run, discussed later in this paper. For data convenience this paper follows JCT in assuming that not just equity holders but also bondholders bear corporate tax in proportion to their debt holdings, see Table 5 in JCT (2013). However, this inclusion of bondholders in the distribution of the corporate tax, while reflective of the substitutability between corporate equity and debt, seems a strong assumption that should be explored as data permits. Because of the tax arbitrage between issuer and bondholder permitted by bond exemption or deductibility of bond interest payment against the corporate income tax base, at some level a bond becomes even more valuable as corporate taxes increase. Of course overall company health is necessary to sustain the viability of corporate bonds and corporate taxes impinge on cash flow (although even in the case of distress, bondholders generally are higher in the queue than shareholders), but it is difficult to see how at the margin for the average company that corporate bondholders are burdened by the level of, or changes in, corporate taxes. If anything, the corporate tax is a boon to bondholders, the very juice that creates tax arbitrage sharing possibilities that bondholders exploit.

**Table 2. Standard Income and Tax Distribution Allocating All
Business Tax to Owners of Capital, 2013 Levels**

Income Class (\$ 000s)	Returns (mils.)	Total Income (\$ bil.)	Total Tax (\$ bil.)	Tax Rates (%)	
				Individual Income Tax Rate	Overall Tax Rate
<30	55	859	46	-5.5%	5.4%
30 to 50	31	1210	136	0.9%	11.3%
50 to 100	42	2961	448	4.4%	15.1%
100 to 200	25	3296	675	9.0%	20.5%
200+	<u>7</u>	<u>3389</u>	<u>971</u>	<u>20.2%</u>	<u>28.7%</u>
All	160	11712	2278	9.2%	19.4%

Notes:

Rounding may affect totals. Capital (and debt) owners are allocated all corporate and noncorporate business income taxes. Income classification and concept follow JCT. Payroll tax includes employee and employer portions. Individual income and excise taxes included. Numbers in red are carried over to Table 5, a summary table.

Corporate Tax Rate Memorandum -- Table includes corporate taxes distributed = **\$208** billion. Net corporate income of **\$508** billion includes \$208 billion of corporate tax, plus \$300 billion (author's assumption) equaling corporate dividends paid to individuals plus capital gain on sale of corporate equities by individuals. Corporate tax rate = $208/508 = 41.0\%$.

The overall tax rate goes up, from 18.0 percent in Table 1 to 19.4 percent in Table 2, as a result of distribution of the corporate tax. Including the corporate tax has mixed effects on progressivity: comparing Tables 1 and 2, every income group pays a higher overall tax rate with the corporate tax distributed, and while the highest income class has the biggest absolute increase in tax rate percentage points (2.0 percentage points), the lower income classes have higher increases in the percentages of the overall taxes they pay (tax rates go up 10.5 percent for the lowest income class, up 8.3 percent for the second lowest income class, and 7.1 percent for the top income class). The progressivity results in Table 2 show that, relative to Table 1, the corporate tax has a modest and mixed effect on progressivity.²¹

The corporate tax rate memorandum in Table 2 shows that the embedded corporate income tax rate in the model is 41 percent; this contrasts with the overall individual income tax rate of 9.2 percent shown in the distribution model.²² In addition, the combined corporate and individual income tax rate on corporate income in the CGR model is 52.8 percent, which contrasts with the 11.2 percent tax rate on other income.²³

Users of CGR models appear to be satisfied how realized capital gains on sales of corporate equities, along with receipt of corporate dividends, reflect net corporate income.²⁴

²¹ Most commentators saw the overall JCT change, including the JCT shifting of business taxes to labor not reflected in Table 2 above but examined later in this paper, as having a modest impact on progressivity. For example, Sullivan (2013b) wrote that the JCT decision to distribute the corporate tax (again, inclusive of shifting some business income taxes to labor) modestly added to progressivity, while Bartlett (2013) commented that the result was modestly regressive. Citizens for Tax Justice (2013), defending what it sees as the progressivity of the corporate tax, wrote that Bartlett “wildly misinterprets JCT’s conclusions.” Actually, as in many things about distributions, there is room for both interpretations: Yes, the overall tax system would be less progressive without the corporate tax (even if the tax is substantially shifted to labor), but Bartlett is correct that the corporate tax comprises a large share (albeit not very much in terms absolute levels) of the overall tax burden borne by the lower income classes.

²² See Table 1 for the individual income tax rate of 9.3 percent. The only change in income between Tables 1 and 2 is the imputation of the corporate tax itself, \$208 billion, changing overall income from \$11,504 to \$11,712 billion. The denominator for the corporate tax rate calculation is \$300 billion (the qualified corporate dividends plus the capital gain realized by individuals on the sale of corporate equities mentioned above) plus the corporate tax itself, resulting in $(208/508) = 41$ percent. This tax rate doesn’t reflect state/local or foreign taxes, which is normal for these distribution models in which U.S. federal taxation is the focus.

²³ This calculation assumes that the \$300 billion that reflects both corporate dividends received by individuals and the capital gain realized by individual from selling corporate stock is taxed at 20 percent under the individual income tax. That makes the combined corporate/individual rate $(208+60)/508 = 52.8$ percent. The tax rate for other income excludes excise taxes (because these can’t be assigned to any particular type of income), yielding the residual calculation of $(2278-88-268)/(11712-508) = 11.2$ percent.

²⁴ For example, see JCT (2013), p. 21; Nunns (2012); and Rosenberg (2013). Rosenberg (p. 11) writes that the distribution model “ideally” should include all after-tax corporate income, but cites impediments like foreign shareholders. As shown later in this paper, the obstacles are surmountable: JCT (2013) adjusted for foreign shareholders, and there is available data from financial reports and IRS forms M-3 and 5471, with extrapolation as necessary. A more inclusive corporate income imputation is seemingly no more difficult than, say, distributing the corporate tax itself or imputing the insurance value of Medicare benefits (both of which are already done in distribution models). The work of TPC and OTA on defined benefit retirement account imputations is a way of including more corporate income in the model, but the retirement effect seems modest compared to what conservatively (e.g., without using a full accrual approach) looks like about \$1 trillion of omitted corporate income.

Even when it is suggested that there might be matching issues in using this CGR approach to corporate income distribution, data and potential double counting issues²⁵ are often cited as justifying the CGR approach.²⁶

B. What's Wrong with the Current Models?

1. Why is the CGR Approach Popular?

Identification of the problems with the current method for distributing corporate income starts with understanding why the current method is used.

There is an ease to accepting realized capital gains on individual tax returns as the primary source of corporate income. This choice simplifies distribution of the corporate tax because the only other imputation required is the corporate tax itself. Contributing to the acceptance of the CGR approach, as noted above there is concern about double counting with any imputation of other corporate income to individuals.

There is also a somewhat unusual alliance of people who seem satisfied with how the corporate income tax and corporate income are distributed in the CGR models. This follows a history of tax distribution users on both sides of a policy debate finding what they want in the distribution results.²⁷

The CGR model results are filtered by both sides in the corporate tax debate: One group that believes that the corporate tax is too onerous points to either what they deem to be the corporate tax's excessive progressivity or the shifting of its burden to labor, while the group defending the corporate tax sees the CGR models' outcomes as a bulwark of a progressive tax

²⁵ JCT (2013), p.22, seems to overstate potential double counting by saying that interest could be double counted in attempting to impute more corporate income, which doesn't seem likely given that corporate interest payments are deducted on the corporate return and generally recognized as income by domestic individuals.

²⁶ For a discussion of the CGR approach and a full accrual alternative, see Armour, Burkhauser, and Larrimore (2013), Burkhauser and Larrimore (2014), and Facundo et al (2013). As explained below, it is not necessary, and it might actually add to the distortion created by the CGR approach, to go to a full accrual approach as suggested by Armour et al, but those authors have correctly identified problems with the CGR method of distribution.

²⁷ Perhaps the biggest institutional clash occurred between Treasury and JCT in the 1990s: see JCT (1990) and U.S. Department of the Treasury (1990). While much attention was paid to disagreement on whether changing the capital gain tax rate would increase revenue, the more direct distribution question concerned what to do with induced (or uninduced) realizations as a result of tax policy change. Realization changes caused by a proposal that aren't reflected in the classifier can distort results, e.g., a proposal to reduce the tax rate on capital gains may induce more gains, but if those gains aren't included in income, it looks like the investor is worse off with a capital gain tax reduction (which he isn't). JCT deals with this capital gains realization issue by including in its distribution table separate pre- and post-proposal effective tax rates, with the change in capital gains realizations reflected in the post-proposal rate (but not the classifier itself). This issue is analogous to the omitted corporate income issue described in this paper. At some level, the fact that Treasury and JCT had this 1990 debate about something that should have been straightforward (if somebody voluntarily recognizes a capital gain, can they really be seen, after-tax, as being worse off?) was an indictment of the underlying distribution models' treatments of deferral and capital investment.

system.²⁸ Further, the focus on how much corporate tax should be shifted to labor has absorbed attention that could have been directed at the first-order issue of capital income sufficiency in the models.²⁹

Correcting the distortion created by vanishing corporate income doesn't end the debate about the progressivity and utility of the corporate tax, but the correction properly frames the issue of whether there is a way to change the corporate tax to achieve the level of progressivity that the current CGR models misleadingly show.³⁰

2. Distortions Caused by Omitted Corporate Income

The embedded corporate rate of 41 percent in this CGR distribution model is high compared to results in most stand-alone corporate tax studies performed separately outside distribution analyses.³¹ Even though the corporate tax has been distributed in models for many decades, there appears to have been little if any testing of the models' embedded corporate tax rate.³²

The omission of corporate income from distribution models stems from many sources, including deferral that results from both corporate and individual choices. Table 3 summarizes six components of return on investment in corporate equities and how they are reflected in the CGR models compared to the more inclusive corporate income approach offered in this paper.

²⁸ The American Enterprise Institute, Citizens for Tax Justice, the Heritage Foundation, and the Tax Foundation all applauded the JCT decision in 2013 to distribute the corporate income tax: See Jensen (2013), Citizens for Tax Justice (2013), Dubay (2013), McBride (2013), and Foster (2014). This is more evidence, adding to the differing views on the progressivity impact of the JCT change expressed by Sullivan (2013b) and Bartlett (2013), of the pliability of current distribution models.

²⁹ An exception to this focus is the recent debate caused by the Armour et al (2013) accrual method; see below.

³⁰ The reinforcing interpretations of distribution models by opponents on both sides of the corporate tax debate won't end if more corporate income is included in the model as a result of this paper's adjustments as described below, as the less progressive results from more corporate income inclusion will still be seen by each side as reinforcing its view. With fuller corporate income inclusion, those in favor of corporate tax abolition will cite the corporate tax's muted progressivity as a reason to end the tax, while those in favor of retaining the corporate tax will see the lack of progressivity in the corporate tax as a reason to tighten the tax. But at least the dual interpretations will be better grounded than they are with current distribution models.

³¹ U.S. federal effective tax rates found in various studies using tax and financial report data range from percentages in the low teens to the mid-20s. Study timing and inclusiveness make a difference, but almost no studies get near the 41 percent embedded corporate tax rate in the CGR model, or really even near a 30 percent effective tax rate. Recent sources for the effective tax rate research and debate include Lyon (2013a) and (2013b), Government Accountability Office (2013), White and Wozny (2013), and Sullivan (2013a) (the latter focuses on effective tax rates on foreign-source income.) Fiekowsky (1977) is evidence that the effective tax rate debate is not new.

³² For example, even the illuminating 2013 National Tax Association symposium on corporate tax shifting passed over the issue of capital income sufficiency in distribution models. The symposium included four diverse papers by Clausing (2013), Cronin et al (2013), Gravelle (2013), and Liu and Altshuler (2013), with different takes on shifting, but little on how much corporate income is distributed or the models' embedded effective corporate tax rates (although in fairness to these authors, the absence of consideration of embedded corporate tax rates in distribution models has been longstanding).

Table 3. Distribution of Corporate Income Components 1/

Component	Data Source	Model Treatment	
		CGR Model	Inclusive Corporate Income Model
1. Corporate dividends received by individuals and realized capital gains on sales of corporate equities	Individual income tax returns	Included	Included
2. Corporate income tax 2/	Corporate tax filings	Included	Included
3. Corporate post-tax income net of dividend distribution and realized capital gains on sales of corporate equities (i.e., net retained earnings)	Corporate tax filings	Excluded	Included 3/
4. Deferred earnings of controlled foreign corporations	Corporate tax filings and financial reports	Excluded	Included 3/
5. Net book/tax differences other than deferred CFC earnings	Corporate tax filings and financial reports	Generally excluded 4/	Included 5/
6. Accrual not reflected in other items	Not generally available	Generally excluded 6/	Excluded
Addendum: Embedded Corporate Tax Rate 7/		41.0%	14.0%

Notes:

1/ All components are annual flows consistent with the distribution models discussed herein.

2/ Classifier income is grossed up by corporate tax. Corporate tax burden of foreign shareholders excluded per JCT.

3/ With adjustment for foreign shareholders.

4/ JCT does distribute some "book/tax" wedge issues (e.g., depreciation), because for noncorporate investors JCT includes some minimum tax preferences as income.

5/ Extrapolate for closely-held and/or small corporations as needed. A 'plug' number is used to approximate the net cumulative effect of these differences.

6/ OTA and TPC include some pension accruals in the income classifier.

7/ CGR corporate rate from Table 2; inclusive corporate income model rate from Table 4. The individual income tax rate for both models is 9.2%.

Item 1 in Table 3 identifies corporate net income components of adjusted gross income, including dividends and realized capital gains on the sale of corporate equities by investors. Item 2, the income gross-up to reflect the corporate income tax (included in all models that distribute the corporate income tax), and Item 3, corporate post-tax income net of dividends paid and capital gain realizations, together comprise pre-tax corporate income and are fully included (after adjusting for double counting because of overlap with Item 1) in the inclusive corporate approach advocated in this paper. In contrast, the CGR models only reflect corporate post-tax income to the extent that the income is included in dividend distributions or capital gain realizations.³³

Deferred CFC earnings, Item 4, are included in foreign tax bases and identified for U.S. tax purposes as the earnings arise (IRS Form 5471). For public companies, deferred CFC earnings are included in financial earnings statements. Item 5 includes book/tax differences other than CFC deferral (e.g., accelerated depreciation) that are reported in tax returns (M-3) and financial reports for publicly owned companies. Item 6 is the accrual of unrealized capital gain that is generally not reported in tax returns or financial reports (except as required by mark-to-market rules).

So corporate return Items 2 through 5 differ from 6 in measurability: Items 2 through 5 comprise income already defined for U.S. tax base purposes,³⁴ and most of Item 5 is composed of highly scrutinized financial report information (with extrapolations needed for privately-held or small corporations).³⁵ Items 2 through 5 do not involve the classic accrual issue arising from the choice by an investor not to realize gains -- instead, they are caused by the corporate level decisions to (1) not pay out retained earnings as dividends, (2) not repatriate foreign earnings, and (3) use assorted tax expenditures that drive a wedge between book and tax income.

The lesson of this forensic exercise is that CGR distribution models don't deal well with deferral. Deferral is the primary tax expenditure accorded capital income and is of a particular double benefit with respect to the corporate tax because just as there is *double taxation* there can also be *double deferral* (no U.S. corporate tax on deferred foreign earnings or other book/tax differences, and deferral at the individual tax level for unrealized gains on corporate equities),³⁶ compounded by no individual tax on stepped-up basis of bequests.

The CGR models include many noncorporate tax expenditures that are unrelated to

³³ For investors in both corporations and noncorporate business, realized capital gains may reflect a company's future earnings potential rather than how much it is currently earning. But a correlation is assumed in CGR models, with realized capital gains serving as a proxy for corporate income notwithstanding timing (and ultimate tax base omission) differences.

³⁴ Many of the book/tax differences are either on the M-3 schedule or have been used in the past for corporate AMT purposes.

³⁵ Those extrapolations have been used for revenue estimating of legislation and the calculation of tax expenditures.

³⁶ The deferral targeted here is "pure" deferral as distinguished from "counterparty" deferral, as defined by Halperin and Warren (2014).

investment, resulting in an income classifier about 25 percent larger than AGI and 50 percent larger than income subject to individual tax, but the corporate net income attributed to individuals in the models represents less than 50 percent of the corporate net income tax base.³⁷ The general goal of distribution models should be to err on the side of practical inclusiveness and use of good available data, but that goal is not met with CGR omission of corporate income.

Of course, deferral isn't just a corporate tax modeling issue, it's a taxation-of-capital-income issue. But the corporate issue is more tractable and richer than just the classic realization quandary that dominates noncorporate business and investor modeling. The corporate sector, because of retained earnings and its large book/tax differences (including CFC deferral), is more distorted because relatively more corporate income than noncorporate business income likely is omitted.³⁸ Also, the corporate tax presents its own discrete policy questions that invite separate attention (especially after the corporate tax was included in distribution models).

There are also inconsistencies in the CGR treatments of corporate and noncorporate income. For example, JCT (2012) describes how it distributes some "book/tax" wedge issues (e.g., depreciation) because for noncorporate investors JCT imputes some minimum tax preferences as income.³⁹ But if these preferences are availed by corporations, there is no allocation to corporate shareholders. Another CGR inconsistency is that for policy changes, for noncorporate business tax effects are distributed to specific noncorporate owners (with JCT now passing 5 percent of the noncorporate burden to labor). In contrast, corporate taxes are distributed, under JCT and CBO, 75 percent to all owners of capital and debt (not just those specifically affected by a policy change), and 25 percent to labor.

This asymmetry means that a policy that cuts across the corporate and noncorporate sectors, such as a depreciation modification or repeal of the manufacturing deduction, is distributed inconsistently. For example, when the manufacturing deduction was cut back from 9 percent to 6 percent for energy in 2008,⁴⁰ the distribution models would have shown 75 percent of the corporate side of that cutback affecting capital owners and 25 percent affecting labor, while 100 percent (95 percent for JCT) of the noncorporate effect would fall on specific noncorporate energy business and investors (with 5 percent falling on all labor for JCT).

³⁷ See *supra* 10.

³⁸ Noncorporate businesses have a book/tax wedge like the corporate sector. Some of these noncorporate book/tax differences are already in models to the extent that they are captured by individual AMT preferences that are added in. M-3 data and extrapolations could complete this data addition.

³⁹ JCT's reliance on filed AMT Form 6251 for this imputation seems to conflict with the inclusivity of other income imputations. What if a lot of taxpayers who benefit from these tax/book wedge differences don't file Form 6251? For example, if high-income taxpayers who benefit from accelerated depreciation in their noncorporate businesses don't file Form 6251 (because of their own tax characteristics that may moot potential AMT liability), but upper middle-income taxpayers who are most often subjected to AMT do file Form 6251, does this cause a discrepancy when looking across income groups? More generally, this decision to rely strictly on filed Form 6251's seems to violate the general principle of expansiveness used in constructing income classifiers for distribution.

⁴⁰ Public Law 110-343.

C. An Inclusive Corporate Income Approach

(1) Rule and Description

The inclusive corporate income approach, unlike the CGR model, adheres to what is termed the *Traceable Net Income Tax Base Rule of Distribution*: For distribution of an income tax in an income-based model, at least all the income to which the tax is applied, and all the income that is readily determinable, should be distributed.

Thus the corporate net income (i.e., the corporate tax base) at a minimum, and preferably the full corporate income reported for financial purposes, should be evident in the model. Why trust a distribution model, particularly in the context of corporate or business tax reform, if the model's corporate tax rate for present law is not adequately explained and reconciled with both the rest of the model and external studies?⁴¹ Unlike the corporate income tax, the individual income tax (because the model starts with AGI, which generally is larger than individual taxable income, and other elements are added to AGI) and payroll taxes in the CGR model adhere to this Traceable Net Income Tax Base Rule.⁴²

The biggest step is assigning corporate tax -- that's already been done in the CGR model, paving the way for adding the corporate income components identified in Table 3, net retained earnings, CFC deferral and other book tax/wedge differences (provided potential double counting is eliminated). Because this paper follows the JCT approach of distributing the corporate tax to corporate stakeholders,⁴³ the addition of these corporate income items simply requires piggybacking on the distribution of the corporate tax itself.

One perspective is that none of these additions is hampered by the typical accrual difficulties:⁴⁴ (1) CFC deferral is foremost a *corporate repatriation* issue, not an individual *investor realization* issue; (2) Other book/tax wedge items are *tax expenditures* and not *investor*

⁴¹ This traceability concept is similar to what Rosenberg (2013), p.10, identifies as "alignment of income and tax liability" in looking at retirement income effective tax rates as one of three competing modeling goals along with "consistency in ranking taxpayers" and "life-cycle vs. snapshot." Potential additional goals include (1) properly reflecting the essence of a particular tax (e.g., the deferral associated with capital taxes can't be ignored), and (2) squaring up the tax story with government spending and deficit effects (see below).

⁴² With respect to payroll taxes, items that are not included in AGI but are subject to payroll taxes are generally added to the classifier, so the payroll tax passes the traceability test. With regard to the estate and gift tax and excise taxes, JCT doesn't try to distribute the estate tax, and excise taxes are generally distributed on the basis of consumption. Because the estate tax is a wealth tax, converting the estate tax so that it fits into an income format is a challenge.

⁴³ As in *supra* 20, for data convenience this paper follows the JCT approach of distributing some of the corporate tax to corporate bondholders, even though equating corporate bondholders and equity owners with respect to the corporate tax burden seems a little odd given that bondholders exploit that very tax to obtain returns. Consideration should be given to not distributing corporate tax (or imputing additional corporate income) to corporate bondholders.

⁴⁴ See below for more on the accrual issue.

realization issues; and (3) net retained earnings, because they are taxed at the corporate level and easily identified, are a *corporate decision* issue and not an *investor realization* issue.

The CGR method includes major tax expenditures involving exclusions on the individual side (employer-provided health, etc.), so why not include big exclusions on the business side (CFC deferral, depreciation timing, etc.)? Also, this book/tax data is already being used for calculating tax expenditures and estimating tax proposals.⁴⁵

Because annual CFC earnings deferral has risen from something like \$50 billion a year 25 years ago to about \$400 billion now, a model which omits this item of corporate income is not capturing the breadth of returns to corporate investors.⁴⁶ For corporate book/tax symmetry with what is already done (although selectively) on the individual side, the inclusive corporate model here conservatively adds minimum tax preferences like accelerated depreciation (\$350 billion is plugged in for aggregated book/tax differences).⁴⁷

In adding deferred foreign earnings to the income classifier, it is important to reiterate the narrow focus on U.S. federal income taxes in the CBO, JCT, OTA, and TPC models. One reason for this focus is the legislative context for these models, which tend to be applied to federal tax proposals that for distribution purposes are anchored by actual or forecasted U.S. tax receipts. The corporate inclusive income approach to distribution presented in this paper adheres to the U.S. federal focus for comparison reasons and because of data constraints, but a broader all-tax approach intended to show both foreign and U.S. state tax burdens correspondingly would need to broaden the tax allocation to account for those effects.⁴⁸

Finally, to avoid double counting, the inclusive corporate income approach deducts dividends and capital gain realizations that show up in AGI. Capital gains stemming from the

⁴⁵ Can use M-3 data for closely-helds, or extrapolate from publicly-helds.

⁴⁶ For symmetry in modeling tax burden, one could assume smooth vintaging or take account of U.S. federal tax that is reserved for these deferred earnings. However, with the increased use of Accounting Boards Principle Number 23, companies have generally stopped reporting federal tax for deferred foreign earnings. In addition, the burden of taxes often diverges from the actual tax liability, particularly with respect to deferred earnings, for which the burden should also account for lock-out, as Grubert and Altshuler (2013) explore, but that concept goes beyond what current distribution models attempt, so is not pursued here.

⁴⁷ Compared to the book/tax wedge found in IRS Form M-3s and financial reports, \$350 billion is on the low end of the choices for representing the wedge even when CFC deferral is treated separately in this inclusive corporate income approach. Also, it is assumed that the timing/vintaging of tax deferrals balances out: any deferral for federal tax liability and financial reporting purposes creating a book/tax wedge in 2013 is deemed comparable to the actual payment of tax in 2013 that reflects the termination of similar prior tax liability deferrals. The same reasoning applies with respect to net retained earnings. Thus none of the items added to income in the inclusive corporate income approach require a corresponding increase in corporate tax allocation in the model (this approach also ensures that the corporate tax liability distributed in the model for 2013 matches, with adjustments for foreign shareholders and technical refund issues, the actual or estimated 2013 corporate tax receipts).

⁴⁸ See Government Accountability Office (2013), Lyon (2013a), Lyon (2013b), and White and Wozny (2013) for attempts to take account of all income taxes. With respect to foreign deferred earnings, the foreign taxes paid on these earnings tend to be modest (and companies have largely stopped recording any future U.S. tax liabilities on this deferral for financial reporting purposes).

sale of corporate equities result from: (1) anticipation of future profits; (2) recapture of tax benefits; (3) liquidation value; and (4) corporate retained earnings.⁴⁹ This suggests that the full inclusion method more than eliminates double counting by subtracting all corporate capital gains, because some of those gains relate to things like anticipated future earnings and not just current earnings.⁵⁰

(2) Table 4 Results

Table 4 shows that corporate income distributed in the model goes up by almost \$1 trillion compared to the CGR model result in Table 2, and the embedded corporate rate is 14.0 percent (compared to 41.0 percent in the CCR model). This is consistent with U.S. federal corporate effective tax rates found in recent studies by GAO (2013) and Lyon (2013a). The note in the table details the corporate additions described above.

As with the CGR model in Table 2, no corporate tax is shifted to labor. This approach also makes it easier to distribute additional corporate income as an intermediate step in exploring the effect of shifting business income taxes to labor (see below).⁵¹

In the inclusive corporate income approach, the combined individual/corporate tax rate on corporate income equals 17.9 percent.⁵² This is much lower than the 52.8 percent found above for the CGR model. The individual income/payroll tax rate, excluding corporate income taxed at the individual level, remains 11.2 percent, the same as in the CGR model.

(3) Summary Table 5 Results that Compare Methods

Table 5 summarizes the choice for distribution models: Accept the current CGR model which shows about \$500 billion of corporate income (capital gains realizations from sales of corporate equities, qualified dividends, and the gross-up for the corporate tax itself) in the classifier at 2013 levels, or adopt the inclusive corporate income approach and show about \$1.5 trillion (corporate income subject to the corporate tax, foreign earnings deferral, and other book/tax differences).

⁴⁹ Capital gain from the sale of passthrough ownership interest arises from these components except for (4).

⁵⁰ Hence this approach does not overcorrect for omitted corporate income -- if anything, the inclusive corporate income method still retains some understatement of corporate income (depending upon source of capital gain.)

⁵¹ Because, following the JCT approach, additional income is attributed to corporate owners and creditors, it is easier to make that attribution by piggybacking on a corporate tax imputation that initially doesn't allocate corporate tax burden to labor or consumers.

⁵² Calculated as $(208 + 60)/1494$.

Table 4. Inclusive Corporate Income Approach, Allocating All Business Tax to Owners of Capital, 2013 Levels

Income Class (\$ 000s)	Returns (\$ mils.)	Total Income (\$ bil.)	Total Tax (\$ bil.)	Tax Rates (%)	
				Individual Income Tax Rate	Overall Tax Rate
<30	55	896	46	-5.3%	5.2%
30 to 50	31	1248	136	0.9%	10.9%
50 to 100	42	3114	448	4.2%	14.4%
100 to 200	25	3540	675	8.3%	19.1%
200+	<u>7</u>	<u>3899</u>	<u>971</u>	<u>17.6%</u>	<u>24.9%</u>
All	160	12698	2278	9.2%	17.9%

Notes:

Rounding may affect totals. Capital owners are allocated all corporate and noncorporate business income taxes. Income classification and concept follow JCT. Payroll tax includes employee and employer portions. Individual income and excise taxes included. Numbers in red are carried over to Table 5, a summary table.

Corporate Tax Rate and Income Memorandum -- Table includes corporate taxes distributed = **\$208** billion. The denominator is \$1000 billion corporate income subject to tax, plus \$325 billion of deferred CFC earnings, plus \$350 billion of other book/tax differences, equaling \$1675 billion, multiplied by U.S. shareholder ratio of .892, resulting in \$1494. Corporate tax rate = **$\$208/1494 = 14.0\%$** . Income increment added here relative to Table 1 is \$1194 billion: \$1494 billion less the \$300 billion already in the model (equaling qualified corporate dividends paid to individuals plus capital gain on sale of corporate equities by individuals reflected already in Table 1), that is, $\$1494 - \$300 = \$1194$.

Table 5. Summary of Corporate Income Allocation and Tax Rates Under Three Distribution Methods, 2013 Levels 1/

Method	Corporate Tax Distributed (\$ bil.)	Net Corporate Income Allocated (\$ bil.) ^{2/}	Embedded Corporate Tax Rate ^{3/}	All Income (\$ bil.)	Overall Tax Rate	Overall Tax Rate of Top Income Group ^{4/}
1.No Corporate Tax Imputation (Table 1 above)	0	300	0.0%	11504	18.0%	26.7%
2.CGR Corporate Tax Imputation (Table 2 above)	208	508	41.0%	11712	19.4%	28.7%
3.Inclusive Corporate Income (Table 4 above)	208	1494	14.0%	12698	17.9%	24.9%

Notes:

- 1/ Corporate and noncorporate business income taxes assumed to be borne by shareholders and owners (so no assumed shift of these taxes to labor -- this shift is explored later in this paper).
- 2/ Though corporate tax is not distributed in the first approach (Table 1), net corporate income is received by individuals to the extent it is distributed as dividends or is reflected in capital gains realizations by individuals.
- 3/ Corporate income tax rate only, not inclusive of individual taxes paid on distributions.
- 4/ The top group has income exceeding \$200,000.

The last column of Table 5 shows the difference the two models make in the overall tax rate faced by the top income group, varying from 28.7 percent for the CGR model to 24.9 percent in the inclusive corporate income method. This difference would be even starker if the top income class was broken down further to the top 1 percent or 0.1 percent of taxpayer units. In addition, note that the overall top income class rate of 24.9 percent under the inclusive corporate income approach is lower than the equivalent rate, 26.7 percent, in the CGR approach that doesn't attempt to distribute the corporate tax. These findings show the impact of omitted corporate income under the CGR method.

(4) Robustness of the New Approach: Baseline and Policy Analyses

If we impute corporate income tax in a distribution model, then the model should yield reasonable answers about broad changes in corporate tax policy, including elimination/integration or expansion of the corporate income tax. The model also should match intuition about present law. The CGR distribution model does not meet these requirements with respect to the following policies:

- a. Exogenous policy changes in dividend policy (Bush-era tax cuts), treatment of capital gains (in 1986 for TRA86, 2012 for the recent fiscal cliff deal), or even a foreign dividend repatriation holiday⁵³ create unintended volatility in the embedded corporate rate and overall distribution results. For example, because the 2012 fiscal cliff deal raised tax rates on capital gain income and dividends and thus reduced capital gains realizations and dividend payouts,⁵⁴ does it make sense that as a consequence of that legislation the embedded corporate tax rate in the CGR model should increase (because the ersatz corporate income in the model appears to shrink)? The CGR model is also open to criticisms that the model misses corporate/noncorporate structural and other policy tax changes.⁵⁵
- b. CGR models make it look like a corporate tax reduction would be a good thing because the corporate tax rate appears to be very high in the models. In contrast,

⁵³ The 2004 tax law included a one-time repatriation holiday for deferred foreign earnings. Redmiles (2008) found that \$312 billion qualified for the holiday, much of which was passed on to corporate shareholders in dividends and share buybacks. A CGR model would show this dividend surge as “new” corporate income, when in fact companies and shareholders were always aware of the magnitude and ownership of this income, whether or not it was actually repatriated by the companies.

⁵⁴ As per standard revenue estimating conventions.

⁵⁵ See Feldstein (2014), Reynolds (2014), Mankiw (2014), Armour, Burkhauser, and Larrimore (2013), and Burkhauser and Larrimore (2014), and in response to criticisms of the CGR model, Facundo et al (2014). These critics of CGR models are only partly right, as their criticisms ignore that realized capital gain and dividend flows in CGR models do reflect some of the decorporatization of the last few decades (in CGR models, decorporatization will result in more income directly flowing through to noncorporate business owners, but will also result in lower corporate dividend payments and capital gain realizations on the sale of corporate equities). The fundamental issue these criticisms hint at is that the CGR model is inadequate in its depiction of corporate income to begin with. As this paper shows, addressing that inadequacy will not necessarily support the policy views on inequality and immobility of those criticizing CGR models with respect to the decorporatization phenomenon.

the inclusive corporate income approach, which takes account of the deferrals permitted under the corporate income tax, shows the corporate tax to be much less progressive than the CGR models suggest.

- c. The CGR model mistreats integration and other business policy proposals, including “decorporatization.”

For a proposed new integrated tax system that would raise the same amount of revenue as the current tax system,⁵⁶ this integration proposal would appear in the CGR model to be an overall tax rate reduction. In CGR models, integration looks as though it increases income because the CGR models, as noted above, understate corporate income in the baseline to begin with.⁵⁷ Current distribution models would yield the wrong answer about integration by suggesting that a revenue-neutral corporate integration would necessarily reduce the rate of tax on corporate income. This phantom increase in income in the CGR models wouldn’t be an issue if that corporate income had already been in the baseline like it is in the inclusive corporate income approach advocated in this paper.⁵⁸

As a complement to an integration proposal, consider a proposal to corporatize passthroughs: The distribution table should reflect properly what happens to income if passthroughs are treated as subchapter C corporations. The CGR model would show an immediate loss of passthrough income to the extent that passthroughs start retaining earnings in excess of any realized capital gains they generate for owners.⁵⁹ This can’t be right: this income shouldn’t disappear just because the form in which it is generated (i.e., from passthrough to C corporation) is changed. Again, the inclusive corporate income approach would solve this issue that the CGR model can’t handle.

Even a less radical proposal affecting corporate taxation such as presented in Altshuler et al (2010) to reduce modestly individual capital gains rates in order to finance corporate rate reduction can’t be modeled properly using the CGR approach. Because the effective corporate rate in the CGR distribution model is overstated to begin with as a result of omitted corporate income, we can’t really tell what effect

⁵⁶ For an example, see Toder and Viard (2014).

⁵⁷ This understatement would occur in any year that corporate retained earnings exceed realized capital gain by investors in corporate equities. Corporate income in the CGR approach is $CG + DIV + CORPTAX$. In the inclusive corporate income approach, corporate income is $CIST + CFC + OTHERBOOKTAX WEDGE$. $CIST$ equals $CORPTAX + RE + DIV$, so ignoring for the moment CFC and $BOOKTAXWEDGE$ (because these items will not be integrated in most proposals), any time RE exceeds CG (which is most of the time) will cause the CGR model to show that integration increases income. Thus the Toder and Viard (2014) integration proposal would look like it increases overall income in the CGR distribution models, even though presumably that is not the intention of this kind of proposal.

⁵⁸ It isn’t satisfactory to simply ignore the increase in income under the CGR distribution models or treat it as a one-off. Any model that distributes the corporate income tax should be able to reflect something like corporate integration without qualification or gymnastics.

⁵⁹ This is the reverse of the condition described in *supra* 57.

this proposed swap would have on progressivity.⁶⁰

In sum, with a corporate integration proposal the CGR models show taxpayers getting more income as more corporate income is flushed through to shareholders, and vice versa for corporatization proposals. These overall income changes shown in the CGR model (but not the more inclusive corporate income method) aren't an intended feature of these types of proposals, but instead are a byproduct of the absence of corporate income inclusiveness in the CGR models to begin with (or the disappearance of income in the case of a corporatization proposal). Such income results negate the utility of the CGR models for the exact proposal that a distribution model should be informative about.

- d. The current CGR model is not good enough even for rank ordering. It has just been shown that the CGR models don't get integration or full corporatization right. With respect to other business proposals, or even non-business proposals, the CGR models distort the progressivity of the corporate tax (and the treatment of capital investment in general). CGR models shouldn't even be used to rank order strictly corporate tax changes -- some proposals affect deferred foreign earnings, some affect book-tax differences, some affect dividend payouts -- all of which are inadequately modeled in the CGR model baseline.

D. Why Not Full Accrual?

The accrual concept is a bogeyman in the discussion of how to treat capital investment in a distribution model. Some argue that the distribution models should avoid any connection to accrual, as if the word itself is radioactive;⁶¹ others want to use full accrual in lieu of realized capital gains. But we shouldn't get caught up in the "is it accrual or not and should it be full accrual?" debate – distribution analysis should not be about semantics but instead about making practical, helpful judgments to augment tax returns, social security data, surveys and

⁶⁰ In Altshuler et al (2010), the model identifies dividends received by individuals and all capital gains realizations (not just realizations on sale of corporate equities) as "tax-favored" income. A more inclusive corporate income distribution model would cause this tax-favored income component to rise relative to other capital and labor components shown under the CGR method. Altshuler et al find that reducing the corporate tax rate helps all capital owners, while raising the tax rate on tax-favored income only affects the owners of tax-favored capital. But once tax-favored income is realistically expanded to include corporate income that benefits from deferral, the swap loses some appeal because it is recognized that corporate income is also tax-favored. (As an aside, Altshuler et al are careful to say that they do not model potential behavior changes that could be caused by their swap proposal.)

⁶¹ Even if one wants to avoid accrual in a distribution model, it isn't always clear what accrual is. Does "expanded cash" or "modified income" include any accrual items? If a classifier is labeled "market income," is it reasonable to expect that it would include accrued income (a la mark-to-market?) When employer payroll tax, or the corporate income tax, is imputed to an individual as income in the CGR models, is that accrual? Is insurance valuation, as with the Medicare imputation, an accrual concept? Adding employer health, or assigning employer payroll tax liability to employees is not materially different than allocating already identified corporate (and other business) income to owners of capital, provided there is no double counting and data issues are addressed (e.g., book/tax data for closely-held corporations and noncorporate businesses).

financial reports to get better measures of income (welfare) and tax burden.

A full accrual method could be the best approach if implemented correctly. It is not subject to the vagaries of the corporate income tax base, including the issue that corporate reinvestment dampens the tax base temporarily while it may actually increase a firm's long-term value. This same reinvestment problem arises with noncorporate business and the individual tax (where investment in human capital may temporarily reduce individual income).

For tax expenditure analysis, we may get away with declaring that accrual is too complex administratively.⁶² However, for distribution analysis, this administrative difficulty excuse doesn't work as well, because we are already doing accrual-like/burden things in distributing the corporate tax itself and other stuff like distributing health care (insurance value of Medicare benefits is imputed on the individual side.)

But if there are data issues with implementing full accrual (including missing data or getting symmetry between investment capital, human capital, and leisure), we can take reasonable steps short of full accrual to improve upon CGR models. With the corporate income omission in the CGR models, we don't have to open the accrual Pandora's Box to make an improvement — we can improve the models by availing corporate tax and financial reporting data on taxable income and earnings (with extrapolation as need for closely-held or smaller corporations).

Armour, Burkhauser, and Larrimore (2013), or ABL, are right that realized capital gains are a misleading indicator of return on capital investment, but ABL's method is asymmetric because it doesn't get at leisure and human capital formation that a full-fledged model would address. In addition, with respect to actual implementation, ABL's snapshot peak-to-peak approach to capital income with omitted years seems to be at least as equally distorted as dependence on realized capital gains.⁶³

An approach like ABL's that uses only investment capital accrual ends up with a mishmash: the labor/non-investment part of the distribution model is constructed using tax expenditures and quasi-tax expenditures that may have no connection to human capital accrual, while the capital investment part of the model is constructed on an accrual basis that does not attempt to incorporate most tax expenditures other than the tax deferral for

⁶² JCT (2014c), p.5, because of administrative feasibility, does not classify deferral of capital gain realization as a tax expenditure. This omission of accretion in wealth under the Haig-Simons approach affects the general perspective on capital-versus-noncapital tax expenditures. For example, were it calculated, the number for accrued-but-unrealized capital gain could be the largest tax expenditure. This also opens up the discussion of what a (negative) tax expenditure for the taxation of inflationary gain would look like.

⁶³ The Armour et al (2013) result that the distribution of capital income has lessened inequality over the last couple decades seems to be affected by omitted years and the particular peak-to-peak method that the authors chose. However, the alternative CGR models have their own problems: CGR models, in addition to having the general problem of omitted income, are subject to capital gain realization and dividend payment volatility caused by largely exogenous economic (e.g., recessions) and legislative (e.g., the 1986, 1997 and Bush-era changes to capital gains and dividend tax rates) events.

unrealized capital gains. As a result, the investor accrual approach may end up with little connection to actual tax bases on the corporate/business side, while on the labor side the clearly identifiable tax base is augmented by tax expenditures.

The inclusive corporate income approach outlined in this paper should over time match the full accrual result. In contrast, the traditional CGR approach will not match up to full accrual because of never-realized gains due to step-up in basis and other capital gain tax base leakages -- income from business capital investment will be consistently underrepresented in the CGR model.

E. Link Between Omitted Corporate Income and Shifting of the Corporate Tax to Labor

If the corporate tax is not as progressive as either the CGR models show or as people really want it to be, the source of the absence of progressivity matters for policy prescriptions. Whether one is interested in simple abolition of the corporate income tax, or an attempt to obtain the false progressivity reflected by the CGR models, the issue of shifting corporate and business income taxes to labor should be addressed.⁶⁴

Table 6 shows that the JCT assumption that 25/5 percent of the corporate/noncorporate business taxes, respectively, are shifted to labor doesn't appear to make much difference in progressivity, either in the CGR or the inclusive corporate income models. The table shows substantial differences (particularly for the highest income class) between the CGR and inclusive income approaches (these differences were demonstrated earlier in the paper), but the 25/5 shift of corporate/noncorporate business taxes to labor makes little difference within each model, as shown by comparing the second to the third column of tax rates (under the CGR approach) and the fourth to the fifth column (under the inclusive corporate income approach).

⁶⁴ See Driessen (2013) on: (a) How the shifting of business tax burden to labor puts in a new light the 2012 election debate about the 47 percent that were asserted not to pay individual income taxes -- in the burden models with allocation of business income taxes to labor, every worker now bears some form of income tax burden; and (b) Questions about the levels, and lack of parity, for these two shift assumptions.

Table 6. Tax Rates by Income Class Under Various Assumptions, 2013 Levels

Income Class and Total Returns		Overall Tax Rates (%)				
		CGR Model			Inclusive Corporate Income Model	
Income Class (\$000s)	Returns (mils.)	No Corporate Income Tax (Table 1 above)	With Corporate Income Tax; No Shifts of Corporate or Noncorporate Business Taxes to Labor (Table 2 above)	Shift Corporate and Noncorporate Business Income Taxes to Labor, 25/5% Respectively 1/	With Corporate Income Tax; No Shifts of Corporate or Noncorporate Business Taxes to Labor (Table 4 above)	Shift Corporate and Noncorporate Business Income Taxes to Labor, 25/5% Respectively 2/
<30	55	4.8%	5.4%	5.7%	5.2%	5.5%
30 to 50	31	10.4%	11.3%	11.4%	10.9%	11.1%
50 to 100	42	14.0%	15.1%	15.2%	14.4%	14.5%
100 to 200	25	19.3%	20.5%	20.7%	19.1%	19.3%
200+	7	<u>26.7%</u>	<u>28.7%</u>	<u>28.5%</u>	<u>24.9%</u>	<u>24.8%</u>
All	160	18.0%	19.4%	19.5%	17.9%	18.0%

Notes:

1/ Source is Table 9 from JCT (2013); income classes consolidated by author.

2/ Author's calculations, interpolating from JCT (2013).

But there are two shifting issues that bear discussion: (1) Shifting business taxes to labor and expanding corporate or capital investment income both decrease progressivity; and (2) The assumption about shifting noncorporate business tax to labor is more potent for distribution than the assumption about corporate shifting

1. Interaction Between Including More Corporate Income and Tax-Shifting to Labor

There is a similarity in the progressivity outcomes attributable to including more corporate income and shifting corporate tax to labor. In the CGR model, omitted corporate income misleadingly predisposes the model to be more progressive than a more intuitive inclusion of corporate income would indicate, regardless of the assumption about shifting the corporate tax to labor. In contrast, in a model which properly includes more corporate income, the corporate tax system, because it allows many layers of deferral as noted above, is not very progressive in the absence of tax shifting to labor, and appears even less progressive with significant shifting of corporate tax to labor.

Hence including more corporate income in the distribution model (as advocated in this paper) and shifting corporate tax to labor (not particularly advocated in this paper) are similar in that they both dampen the progressivity of the corporate tax, but the two phenomena have different policy consequences. This shifting/inclusion similarity means that the results suggested by Liu and Altshuler (2013),⁶⁵ that the corporate tax is not very progressive, are more likely to be right than if the Liu/Altshuler progressivity result relied strictly on shifting a lot of corporate tax to labor. However, the implications of getting there by a large shifting-to-labor assumption (Liu and Altshuler), or including more corporate income (as described in this paper), differ. Liu and Altshuler imply that cutting corporate tax rates would not be very regressive because so much of the effect would be borne by labor, whereas that's not necessarily the policy conclusion if the reason that the corporate tax system is not particularly progressive is that corporate income is not taxed at a very high rate (a possibility obscured in CGR models by the omission of corporate income).⁶⁶

If the corporate tax is so fully shifted to labor, then nothing can be done to make it more progressive, and someone seeking progressivity (or even the level of progressivity that CGR models now show with the assumptions of limited shifting of the corporate tax to labor as well as omitted corporate income) should jettison the corporate tax and look elsewhere (e.g., VAT cum demogrant cum estate/wealth tax) to achieve those goals.

On the one hand, if the corporate tax is not achieving the progressivity that a lot of

⁶⁵ Hassett and Mathur (2006) and Randolph (2006) also found evidence of substantial shifting of the corporate tax to labor.

⁶⁶ As noted above, the CGR model reflects a combined corporate/individual tax rate on corporate income of 52.8 percent, whereas the inclusive corporate income method finds the combined rate to be 17.9 percent. While both of these rates are higher than the 11.2 percent rate (excluding excise taxes) for other income, corporate income is not taxed at a higher rate than noncorporate income in the top two income classes that faces a combined individual income/payroll tax rate which generally exceeds 20 percent.

people have been led to believe it causes, and the corporate tax is too hard to change (e.g., if the research suggesting a high shift rate to labor is right), it would seem that there is an imperative to replace the corporate tax with something that does achieve the progressivity that the corporate tax was thought to have achieved all along. As such, an assumption that a high percentage of the corporate tax is shifted to labor has a boomerang effect — it aids the argument of those worried about after-tax equity.

On the other hand, if the shifting of the corporate tax to labor is modest and the means for raising corporate income taxes are available, then the prescription for achieving the progressivity that the corporate tax was thought to have achieved all along, but for the corporate income omission in the CGR models documented in this paper, is to increase corporate taxes.

Even if those who suggest a big shift of the corporate tax to labor are right and thus the corporate tax is not a viable means of attaining progressivity, the corporate income adjustment for the distribution models presented in this paper is necessary in its own right to get a better picture of the overall distribution of income. An accurate pre-tax income distribution is required for evaluating policy changes, particularly any which involve the corporate tax.

2. Relative Power of Noncorporate Business Tax Shift to Labor

A second issue is the relative potency of the shifting of noncorporate business taxes to labor. This relative power is somewhat obscured in a model that assumes that 25 percent of the corporate tax is shifted to labor but only 5 percent of the noncorporate business tax is shifted, though even with that lopsided ratio the 5 percent noncorporate tax shift to labor is empirically much more important in the top income classes than the 25 percent corporate tax shift to labor, as Table 7 demonstrates.

Table 7's decomposition of the shifting effects shows that shifting noncorporate business taxes to labor is very powerful in the top income class. Even with an assumed overall noncorporate shift to labor that is only one-fifth as large as the corporate shift, for the top income class the \$9 billion tax reduction from the noncorporate shift dwarfs the \$1.3 billion tax increase resulting from the corporate shift.

Table 7. Decomposing Shifting-to-Labor Effects, 2013 Levels

Income Class, Returns, and Total Income			Taxes (\$ bil.)					Tax Effects (%)	
Income Class (\$000s)	Returns (mils.)	Total Income (\$bils.) 1/	Total Taxes Before Corporate Tax Distribution 2/	Corporate Tax with No Shift to Labor	Effect of 25% Shift of Corporate Tax to Labor 3/	Effect of 5% Shift of Noncorporate Business Taxes to Labor	Total Tax with Both Shifts	Overall Tax Effect of Corporate Tax Shift to Labor	Overall Tax Effect of Noncorporate Business Taxes Shift to Labor
<30	55	898	42.4	4.1	+1.7	+0.8	49.1	+4.01%	+1.89%
30 to 50	31	1250	128.1	8.3	+1.6	+0.4	138.5	+1.25%	+0.31%
50 to 100	42	3116	414.7	33.2	+0.6	+2.3	450.8	+0.14%	+0.55%
100 to 200	25	3546	623.0	52.4	+2.0	+5.4	682.8	+0.32%	+0.87%
200+	7	3888	861.0	110.4	+1.3	-9.0	963.6	+0.15%	-1.05%
All	160	12698	2069.1	208.5	+7.2	0.0	2284.8	+0.35%	+0.00%

Notes:

Author's calculations unless stated. Totals may not add due to rounding.

1. Uses inclusive corporate income method (see Table 4 above).
2. Table 8 from JCT (2013); income class consolidation by author.
3. Net positive distribution of \$7.2 billion because allocating corporate tax to labor decreases amount of corporate tax that would be otherwise undistributed. Absent the shift to labor, this \$7.2 billion would have been assigned to foreign shareholders.

Part of the reason for this noncorporate shift assumption potency is the higher relative share of noncorporate business ownership, compared to corporate business ownership, in the top income class.⁶⁷ Shifts to labor are allocated according to wages, and the wage distribution, following JCT (2013), is more similar to the general distribution of capital investment than it is to noncorporate business ownership. Table 7 implies that if the noncorporate business tax shift to labor were 25 percent like the corporate shift assumption, the overall tax rate in the top income class would fall 5 percent (multiplying the cell entry in the last column for the \$200+ income class by five.)⁶⁸

Thus while corporate tax shift to labor is important for the question of the propriety of the corporate tax, the noncorporate business tax shift to labor is important when considering the progressivity of the individual income tax or comparing the progressivity of corporate versus noncorporate business taxes.

III. Consequences of Omitting Debt Change and Government Outlays

A. Welfare Measurement Inadequacy of Tax Distribution Models

Current distribution models are often misleading about overall welfare effects because the models omit full government outlay (referred to here as “G”) and deficit effects. These effects are neither in the baseline income classifier nor treated as independent policy variables like taxes are.⁶⁹ Tax distribution models are intended to explore only tax policy effects, but because of the absence of fuller distribution models for government outlays and deficits, tax distribution models are the only distribution analysis available for legislation that often includes major non-tax policy changes.

Traditional distribution models are sufficient by themselves for policy analysis only under strict conditions (and even then are not appropriate if the corporate income omission issue described above is not corrected). Myopic tax distribution models are “open-ended,” that is, these models don’t “close” because they don’t reflect full government spending and deficit effects, and therefore don’t even qualify as rudimentary welfare models.

⁶⁷ The illustrative “\$10 billion” examples offered in JCT (2013) also suggest that allocating \$1 of corporate tax to labor does not change the distribution across income groups as much as the allocation of \$1 of noncorporate business tax to labor. Also, see CBO (2012), Table 4, p. 19, for the isolated effect of shifting 25 percent of the corporate tax to labor. Shifting 25 percent of the passthrough tax to labor could make quite a difference, especially in the lowest income group where there is a relatively low level of passthrough ownership.

⁶⁸ Note that this would be a five percent change in total taxes, not a change of 5 percentage points in the tax rate.

⁶⁹ JCT (2012), p. 10, says it doesn’t include means-tested government payments in the income classifier because the payments can be considered negative tax programs and therefore don’t belong in a pre-tax income classifier. Extending that line of argument, shouldn’t these means-tested payments (and other non-means tested payments not already in the model, regardless of whether this spending is considered to be transfers or not) be part of the independent government action variable, expanding the restricted tax independent variable that the traditional models now use? Even if the classifier is intended to be “pre-tax,” G should be distributed just as we distribute taxes themselves in order to get an accurate pre-tax-pre-G and post-tax-post-G assessment of government activity.

These models have been constructed to look at narrow topics such as tax rates, tax shares by group, and after-tax income, leaving broader welfare questions including spending effects, deficit impact, and utility assignment to other analyses. But many traditional tax distribution model users, in the absence of broader welfare models, knowingly or unknowingly use tax distribution models as be-all end-products, effectively assuming that any spending or deficit changes in the legislation (or as a baseline matter) are distributionally irrelevant or echo tax distribution results.

Just because we believe we know how to distribute taxes doesn't mean it should be done in the absence of complementary distributions of all outlay and deficit effects, or without warnings about tax distribution model myopia.⁷⁰ For example, with a 10-percent reduction in all tax rates, accommodated by deficit financing, everybody looks better off in the traditional tax distribution model, and the proposal wouldn't appear to affect progressivity (and for an across-the-board tax increase, the converse).

Traditional tax models wouldn't reflect whether this 10-percent tax cut was paid for by cutting, say, federal transportation funding, because almost no transportation funding shows up in the model. Even if there is an across-the-board cut in all government spending to pay for the rate cut, such a small proportion of government spending is included in the baseline model that the result is distorted in favor of the rate cut.⁷¹

The Bush-era tax cuts, the 2009 stimulus legislation, the 2012 fiscal cliff deal (as measured against present law) -- they all looked like they made people better off in standard distribution models because full spending/deficit cuts were not captured in the tax distribution tables. It's like using a broken mirror that only shows one dimension; one can get into the second-best discussion of whether a broken mirror is better than no mirror, but in any case everybody should be continually warned in big print that the mirror is broken or myopic.⁷²

Of the models that try to distribute more G than the traditional models show, many do so only selectively, focusing only on transfers or on a particular policy program. Some research suggests that omitting transfers in the income classifier makes the traditional narrow distribution look like it's too regressive⁷³ -- but that's not enough, we must distribute ALL of G to capture the full effect. An almost-complete distribution, CBO (2013a), for 2006 shows that more complete distribution of spending effects beyond transfers does not make the current

⁷⁰ Just as tax expenditure pamphlets warn about not adding tax expenditures or considering them to be revenue estimates (even though tax expenditure addition warnings are often ignored).

⁷¹ Social security payments received and some government health spending are included in the baseline model income classifier, and some models include other transfer payments, but the bulk of government spending is not included in most distribution models.

⁷² The \$10 billion corporate and noncorporate business tax examples in JCT (2013) also show the problem -- the \$10 billion tax increase doesn't seem to buy anything in the distribution model, so it is difficult to see why anybody would favor it other than for what it does to the Gini coefficient alone (and CBO, JCT, OTA, and TPC generally don't calculate Ginis).

⁷³ Armour et al (2013) discuss the effects of cash transfer payments and in-kind income on distribution results.

spend/tax system look more progressive than the traditional model that only distributes social security payments, Medicare, and a few other items shows.⁷⁴

And it's not enough to distribute G -- the models should distribute deficits (or surpluses) also, otherwise deficit spending or tax cuts financed by deficits will get free passes (or in the case of surpluses, be penalized).⁷⁵ The CBO distribution for 2006 did not go far enough to cover deficits. If the lack of G distribution is a result of an institutional split like the institutional separation of JCT and CBO, that could be fixed by cooperation.⁷⁶

If all we have is just a tax distribution to look at without looking at G, it's like a 50-year penalty is applied to the analysis because the handicap is analogous to being transported back to looking at direct spending without looking at tax expenditures, that is, we are now in 2014 in traditional distribution models where spending analysis was in the 1960s before Stanley Surrey promoted the tax expenditure concept.⁷⁷ More generally, if we're not going to distribute full deficit and spending consequences of a policy change (or the baseline itself), it's like seeing only the cost side of a cost-benefit analysis that will never be completed.

Proper treatment of this tax base representation issue can be summarized with the *Rule of Revenue Distribution Sufficiency*: Traditional revenue distributions are sufficient policy information on their own only if the legislation is revenue-neutral and there are no outlay changes.⁷⁸ As an example, the traditional distribution table for the Camp 2014 reform proposal⁷⁹ is sufficient because Camp's proposal was largely revenue-neutral and made no direct spending changes (if we ignore the transportation funding proposal and some other items, and the omission of some of Camp's tax proposals from the distribution table). On the other hand, for the 2012 fiscal deal, which was not revenue-neutral and contained spending changes, the traditional tax distribution table was not sufficiently informative about that legislation's overall welfare effect.⁸⁰

⁷⁴ An example of the traditional model is CBO (2012). In separate correspondence with the author, Michael Udell emphasized the variation across federal budget outlay categories in the importance of G versus tax subsidies -- for example, G is relatively more important for health, agriculture, and transportation than for housing.

⁷⁵ One approach would be to distribute deficit change across all tax revenue and all G, pro rata.

⁷⁶ See Giertz and Driessen (2014) on the impact of Congressional Budget Act of 1974 on the split in institutional responsibility. Also, Treasury could employ the power of OMB to get executive branch assistance in modeling the distribution of G.

⁷⁷ The budget approaches before Surrey employed a well-established method for looking at spending, but little effort was made to look at tax subsidies that were comparable to direct spending. In some ways the current distribution models have the same kind of problem, but have reversed the sequencing: The distribution of taxes is well established, but the distribution of the other important part of the story, G, in a way that gives parity to taxes and spending in the distribution model, is still in an experimental stage.

⁷⁸ Outlay changes owing to changes in tax refundability are an exception to this rule -- they generally are captured in traditional tax distributions.

⁷⁹ See JCT (2014a).

⁸⁰ A change in outlays, even if revenue-neutral, still could affect the distribution of government spending across income classes. Also, technically, because deficits also matter for distribution, the bill would have to be revenue-neutral in each year to avoid deficit and interest cost implications.

Also, not fully distributing G, that is, the boutique treatment of G (most models include social security payments, some models add some transfer payments, etc.), has contributed to the proliferation of income classifiers across institutions (e.g., cash, expanded cash, market, adjusted income, etc.). More generally, it's not clear that this variety in classifiers has had the beneficial effect of boosting the general understanding of distribution that one might have hoped would come from classifier experimentation. Full distribution of G and deficit effects, in addition to being the right approach for reasons noted above, also might help contain the classifier wars, and perhaps even encourage distribution presentation uniformity similar to how revenue and outlay estimating uniformity is encouraged by the CBO/OMB revenue and cost scoring compact.⁸¹

B. Policy Examples of Issues with G Omission

One of the important examples of the distortion caused by the omission of G and deficits in distribution models concerns the income tax offset. The income tax offset is a revenue estimating concept that reflects the effects of tax base overlap: Changing a tax applied to Tax Base A may cause a countervailing effect if that tax is deductible in the computation of Tax Base B.⁸²

A stylized example of how the absence of G and deficit distribution distorted the welfare impact of the income tax offset occurred in recent stimulus legislation:

- A \$100 payroll tax cut delivered on the employee side looks in the traditional distribution model like it makes people \$100 better off -- there is no accounting for the \$100 reduction in G (or any deficit effects).
- Delivered through employers, a \$100 payroll tax cut in the standard model looks as if it makes people only \$75 better off because of the income tax offset which causes individual taxes to rise \$25 because employers will pay employees \$100 more resulting in \$25 of additional individual tax liability for employees
- Traditional distribution models will favor the employee approach – that approach seems to give \$25 more of benefit. But in general these policies should have the same overall impact (setting aside the differential effects cutting across income classes): The employee-targeted proposal reduces payroll taxes \$100 but also cuts G by \$100, while the employer-targeted proposal reduces payroll taxes \$100, raises individual taxes \$25, and cuts G by \$75. Because the traditional distribution models do not reflect G, the employee approach (the method that was actually enacted in the stimulus legislation) falsely looks like it makes people better off than the employer approach if distribution table users are myopic.⁸³

The income tax offset is a specific but important case of the more general problem of

⁸¹ See Fletcher and Hamilton (2008) for a discussion of these scorekeeping guidelines.

⁸² See CBO (2009) and JCT (2011).

⁸³ Policymakers also may have preferred the employee approach because it delivered an extra \$25 billion stimulus faster than the employer approach, but the optics of the traditional tax distribution table that ignored the spending value of the income tax offset improperly reinforced that choice.

not distributing G. For example, if we make charitable gifts taxable, the traditional model won't show that this policy change could buy extra G: The model will only show the tax increase, with people looking worse off with higher tax rates and less after-tax income.⁸⁴

Another example of the effects of G omission is the somewhat surprising result of Chetty et al (2013) that the home mortgage interest deduction (MID) helps income mobility.⁸⁵ Maybe distributing G, and testing government spending alternatives to the MID, might alter these results. In 2014, finding correlation, or even causality, between MID and mobility isn't enough --the test should be the efficiency of the MID.⁸⁶

IV. Conclusion

Quantitative legislative tax analysis involves five core tasks: (1) Baseline receipts forecasts; (2) Revenue estimating; (3) Distribution; (4) Supplemental macroeconomic analysis (to the extent that macroeconomic effects are not integrated into traditional revenue estimates); and (5) Tax expenditure identification and calculation.

Attempting to provide consistent information across these functions isn't easy in the legislative context because of constraints including the legislative emphasis on cash-flow results, point estimates, a confined budget window, and reliance on often-ambiguous statutory language. But it's relatively easy to identify the corporate and broader capital income omissions in current CGR distributions, and the inadequacy of traditional tax distribution models as a result of incomplete distribution of G and deficit effects is also clear.

With most existing distribution models, the status quo is disappointing because economists have been given a lot of freedom in this area.⁸⁷ Distribution modeling is not as constrained as, say, revenue estimation and tax expenditure calculation, which tend to be constricted by legal or parliamentary requirements or other conventions. With distribution analysis there is particular flexibility on the income side, but that flexibility hasn't been exploited to achieve intuitive or consistent results with respect to returns from investment in capital, and particularly corporate, assets.

⁸⁴ Donald Marron is thanked for this point (email correspondence of Jan. 2014). The traditional distribution model also doesn't show, in this case, the broader welfare effect of taxpayers making fewer charitable contributions in response to those contributions being made taxable. Feldstein (1980), Feldstein (1987), and Driessen (1987), with a general welfare model including the assignment of utility, discuss the efficiency of this example.

⁸⁵ Chetty et al (2014).

⁸⁶ Chetty et al (2014) aren't alone in seeing a role in mobility for the MID, e.g., Carasso et al (2008) included it as a component in their "federal mobility budget." For theoretical background on a full welfare model that tests the efficiency and equity effects of direct government spending versus tax expenditures (including consideration of externalities), see *supra* 84.

⁸⁷ Of course, there are limits to freedom, at least in the legislative area, as demonstrated by the lack of congressional and lawyer enthusiasm for the economically-sophisticated-for-its-time distribution method outlined by JCT (1993).

Here's a summary of what traditional CGR distribution models don't do well:

- (1) Corporate tax changes and effective tax rates
- (2) Changes that aren't revenue neutral
- (3) Revenue-neutral tax changes if accompanied by spending changes
- (4) Baseline distributions (because of omitted corporate income, G, and deficits)
- (5) Life-cycle incidence issues

Of these five problem areas, only the last one is well-acknowledged. About twenty years ago it was suggested that cross-section incidence analysis overstated regressivity of excise/consumption taxes if a life-cycle perspective was adopted.⁸⁸ It has also been pointed out that cross-section incidence models don't handle retirement and social security tax expenditures well. But it is only recently that CGR distribution models have been challenged for their adequacy in modeling the corporate tax.

The differential treatment of capital and labor returns became more of an issue as we moved from a simple taxes-paid approach to distributing taxes on capital (e.g., the corporate and estate/gift taxes). Deferral is the primary tax benefit that capital investors have. If a distribution model doesn't handle deferral well, the model doesn't properly measure return on capital.

Tax expenditure analysis has the same problem: The omission for "administrative feasibility" of general deferral for capital gains⁸⁹ (as well as any treatment of human capital) skews the presentation. The complacency in the acceptance of this tax expenditure omission, and absence of discussion about the omission's impact, served as precursors for the incomplete treatment of capital investment in distribution models.⁹⁰

Once we decide to distribute the corporate tax, how can we be queasy about including proper levels of corporate income?⁹¹ Once we realize the implications of a distribution model that doesn't include effects of G or deficit change, how can we not push through and distribute all of G, or alternatively at least post huge hazard warnings on traditional distributions?

Just because there is a public appetite for information doesn't mean we should depend on myopic, relatively uncaveated CGR models or models that don't account for all of G and deficits effects. It should be OK to say "we can't do something because it wouldn't be up to standard"⁹² or "reader beware." As with the discomfiting warnings for prescription drugs, this discussion of potential negative side effects of using the traditional distribution table may make one wonder about ever employing distribution analysis in the first place. But some level of nausea should be accepted with both prescription drugs and distribution models.

⁸⁸ See Poterba (1989).

⁸⁹ JCT (2014c), p. 10.

⁹⁰ As a former government economist, the author confesses to multi-decade complicity in not quantifying the tax expenditure associated with a realization-based tax system.

⁹¹ Remaining mindful not to replace CGR models with an ad hoc or distorting accrual approach.

⁹² Like JCT and CBO do with the estate tax, and JCT did with the corporate tax until 2013.

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