

DRAFT – COMMENTS WELCOME

Is U.S. Corporate Income Double-Taxed?

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I. Introduction

Every public finance student learns that corporations are subject to two levels of taxation—at the company level through the corporate income tax and the individual level through taxation of dividends and capital gains. Though observers frequently lament this double taxation of equity-financed corporate investment, double taxation is not important per se; the issue is the overall level of tax. (Most investors would prefer two 10 percent taxes to a single 30 percent tax.) Still, the overall *effective* tax rate depends on both corporate and individual income taxes.

Most policy discussions take this “double” taxation as given, and reform proposals frequently reflect the notion that the corporate tax overburdens equity-financed investments. Indeed, this was a major part of the motivation for several proposals to cut corporate tax rates dramatically, including recent proposals offered by Republican presidential candidates in 2016 as well as House Speaker Paul Ryan. More scholarly proposals have also suggested cutting corporate tax rates to 15%, and moving more of the tax burden to the individual level; see, e.g., Altshuler and Grubert (2016) and Toder and Viard (2016).

Yet, despite the implicit assumptions of policymakers and public finance scholars, our estimates suggest that the double taxation of corporate income is not an issue for the vast majority of U.S. corporate stock. For example, Rosenthal and Austin (2016) estimate that the taxable share of U.S. corporate stock has fallen dramatically in recent decades, from more than 80% in 1965 to only 24% in 2015. During this period, holdings by tax-exempt retirement accounts and foreigners have increased relative to holdings by taxable individual accounts. Using an alternative methodology, we confirm that most U.S. stock is held in nontaxable accounts, although the alternative methodology suggests that the nontaxable share may be somewhat higher in some years, averaging 32% for the period 2004-2013. Data from the U.S. Treasury Sales of Capital Assets files also confirm the general magnitudes of holdings in individual taxable accounts that are implied by both of these estimates.

We discuss the causes of these dramatic changes in the taxable share of corporate stock. Several factors explain the shift, including changes in retirement finance, demographic changes, changes in the prevalence of pass-through business organizations, and the increased globalization of capital markets.

These findings are important for the development of sound corporate tax policy. Our findings suggest that the corporate tax represents the only level of domestic tax for most corporate capital.¹ Moving the capital tax burden to the individual income tax would either cause a large revenue loss or require a reform of tax preferences that currently exempt much corporate equity from taxation under the individual income tax.

¹ We do not address whether the corporate tax is falling primarily on capital or on rents, or possibly harming workers. For a full treatment of these issues, see Clausing (2012, 2013).

These findings also have implications for other important questions in public economics, including the measurement of the cost of capital, the importance of capital gains lock-in effects, the consequences of changes in dividend taxation, and the nature of clientele effects.

Section II will provide background and discuss prior work on this topic. Section III uses data from the Federal Reserve's Financial accounts to estimate the share of U.S. corporate equities held in taxable individual accounts. Section IV draws on data from different sources to further examine these trends. Section V discusses how these estimates have varied over time. Section VI develops the implications of these findings. Finally, Section VII presents conclusions and areas for further research.

II. Background

Determining the share of corporate equity in taxable individual accounts is surprisingly difficult, and prior research has often overestimated this share by including returns held in tax-exempt retirement accounts, tax-exempt 529s, non-profits, or foreign accounts.

We consider taxable accounts to be those whose capital gains and dividends are taxable on individual income tax returns. We exclude shares held in retirement accounts, including both traditional IRAs and Roth IRAs, and retirement plans, both defined-contribution and defined-benefit, which are not subject to capital gains and dividends taxation. Those accounts are both untaxed since either (1) their contributions are nondeductible and earnings are nontaxable, as in the case of Roth IRAs and Roth 401(k), or (2) their contributions are deductible and earnings are taxable upon withdrawal, as in the case of traditional IRAs or 401(k) plans. The second case is equivalent to the first assuming a constant tax rate, since the present value of the tax deductions on contributions exactly offset the tax burden on withdrawals.²

In its Financial Accounts, the Fed reports the flow and holdings of financial assets, including corporate equity; however, the Flow of Funds estimates characterize many assets in a way that is too broad to discern the taxable share of corporate equity, as discussed in Rosenthal and Austin (2016). In 2015, the Fed estimated that the "household sector" accounted directly for 39.1% of corporate equity.³ These data are the basis for many estimates.

² Consider an example where an investor has \$100 in pre-tax wages that she wants to deposit in a retirement account after paying applicable taxes. Suppose there is a flat rate 25-percent income tax. If she wants to deposit in a Roth IRA, she has \$75 after tax to deposit. After n years, she will have $\$75(1+r)^n$, which she may withdraw tax-free (where r is the annual return). If she puts the money in a traditional IRA, she can deposit the full \$100 because the deduction offsets the income tax that would otherwise be owed. At the end of n years, she will have a balance of $\$100(1+r)^n$, but she will have to pay 25 percent of that amount in tax. In other words, she will have the same $\$75(1+r)^n$ to finance retirement consumption as she would have if she'd contributed to the Roth IRA.

³ This is from the latest release of the Federal Reserve data, available at <https://www.federalreserve.gov/releases/z1/Current/accessible/default.htm>, Table L223, line 11, accessed September 10, 2016.

It has long been recognized that these data do not accurately represent the taxable share of U.S. corporate equity. Poterba (2004) refined the Fed estimates by excluding equity owned by defined benefit and defined contribution plans from the household sector and adding the indirect share of household ownership via mutual funds. In combination, he estimated the taxable household share of corporate equity was 57.2% for 2003. This estimate is now over a dozen years old, and as we show below, the taxable share has fallen dramatically in recent years.

Using similar methods at a similar time, Auerbach (2005) estimated that U.S. households (taxable and nontaxable) directly owned approximately 42% of the market value of U.S. corporations in 2004, and that this share would be higher if assets held indirectly (through mutual funds, e.g.) were included.⁴

Goldman Sachs (2014) observed that the Fed’s “broad category definitions can make it difficult to use the Federal Reserve Financial Accounts (Flow of Funds) data to analyze trends in the domestic public equity market.”⁵ Instead, they used proprietary company-specific ownership data to estimate that retail investors *directly* owned 23% of public U.S. single-stock equities in 2013 (and retail investors *indirectly* owned more through mutual funds and pension funds). But those data include ownership through IRAs, which should be excluded in estimates of taxable accounts.

Gale (2002) and Rosenberg (2012) took a different approach. They derived the household taxable share from tax return data. Gale divided total dividends reported on individual tax returns (Form 1040s) by dividends reported in the National Income and Product Accounts (NIPA) reports. Rosenberg took advantage of the 2003 tax law change that required separate reporting of “qualified dividends.” He refined the denominator by using dividends reported on corporate tax returns (Form 1120). Rosenberg’s estimates reduced both the numerator and denominator: qualified dividends excludes nonstock dividends such as those paid on money market or bond funds and 1120 dividends excludes S-corporation dividends that are included in the NIPA measure. Gale estimated that individuals held 46 percent of dividends paid by the corporate sector in 2000. Rosenberg estimated that individuals received 44 percent of U.S. corporate dividends in 2009. However, those studies both compared domestic and foreign dividends received by U.S. individuals to total dividends paid by U.S. corporations to domestic and foreign shareholders. We develop a methodology below to infer domestic holding of U.S. corporate equity held in taxable accounts.

Rosenthal and Austin (2016) made a number of adjustments to the Financial Accounts, drawing on data from the Investment Company Institute (on mutual funds) and other sources, and estimated that the taxable share of domestic equity was 24 percent in 2015, which is much lower than prior estimates. They produced a time series back to 1965, which showed that the

⁴See Auerbach, pages 4-8, which discusses the problems of using the Fed’s Financial Accounts data to assign corporate tax burden. To estimate U.S. holdings of U.S. equity, Auerbach netted U.S. resident holdings of foreign equity against foreign resident holdings of U.S. equity.

⁵ See Goldman Sachs (2014), p. 8.

taxable share had fallen from 84 percent in 1965. Over the same interval, foreign holdings rose sharply from 2 percent to 26 percent. Equities held in retirement accounts comprised 6 percent of all equity in 1965, but 37 percent in 2015. The shift seems to be driven by three factors: (1) the globalization of capital markets; (2) the shift of retirement savings into IRAs and defined contribution pension plans, which were insignificant in 1965; and (3) the growth of investment in pass-through entities, especially S-corporations, which are not subject to the corporate income tax.

We update the estimates of Rosenthal and Austin (2016) using the most recent revisions published by the Fed, presenting it in a somewhat more intuitive way. We discuss concerns about the Financial Accounts methodology and attempt to validate the estimates using other data from other sources, and show that the qualitative conclusions appear to be robust. We consider the economic and policy implications of the shift in ownership of corporate equity.

III. Deriving Individual Ownership of U.S. Corporate Equity from Flow of Funds Data

A key challenge in analyzing the Fed's data is that it combines data held by individuals with data held by nonprofits and others and also double-counts some corporate equity held by pass-through entities, as highlighted by Rosenthal and Austin (2016). We can derive a more revealing flow of funds based on their data.

Table 1 updates Tables 1 and 2 in Rosenthal and Austin (2016). The first step is to remove foreign owned equity. In 2015, foreigners held an estimated \$5,522 billion of the \$35,756 of corporate equity (column 1 of Table 1). Corporate equity in the Financial Accounts includes \$6,828 in foreign equity held by Americans. That is 22.6 percent of domestically owned equity. Applying that percentage across the board yields the estimates in column (3). This is a rough approximation, but it is not clear how it could be refined.

The next step is to remove S-corporation stock, exchange-traded funds, closed-end funds, and real estate investment trusts. None of these pass-through entities are subject to a separate corporate level tax, and the holdings of stock represented in ETFs and CEFs are double-counted in the Financial Accounts according to Rosenthal and Austin (2016). We apply their assumptions and methodology in subtracting the pass through shares from the total. The result in column (8) is U.S. corporate equity, which totaled \$22,876 billion in 2015.

Of the estimated \$6,808 billion in "household sector," nonprofits hold about \$963 billion in 2015. In addition, households hold a significant amount of equity in mutual funds, CEFs, and ETFs, which the Fed reports separately. Table 2 reallocates stock held by pass-through entities to their ultimate owners—a total of \$1,909 billion of shares directly held. The household row is also distorted by including IRAs and 529 accounts, which are tax-free. We reallocate \$1,567 to those tax-free accounts. (Table 2 shows the entire transition matrix between the data as reported by the Fed and the ultimate owner/type of account.) The bottom line is that \$6,188 of

Table 1. Subtract Foreign Equity and Pass-Throughs, 2015

(Dollar Amounts in Billions)

	All corporate equity	–	Subtract foreign equity (0.225 x (1))	=	U.S. equities	–	Take Out Pass-Throughs				=	US C Corp Equity
							S Corp Equity	ETFs	CEFs	REITs		
	(1)		(2)		(3)		(4)	(5)	(6)	(7)		(8)
All holders	35,756		(6,828)		28,928		(2,752)	(2,100)	(261)	(939)		22,876
Household & Nonprofit	14,158		(3,198)		10,961		(2,752)	(1,062)	(132)	(207)		6,808
Insurance companies	623		(141)		482			(269)	(33)	(131)		48
Defined benefit plans	3,174		(717)		2,458			(333)	(41)	(33)		2,050
Defined contribution plans	1,366		(308)		1,057			(280)	(35)	(33)		710
Foreigners	5,522		0		5,522			(95)	(12)	(56)		5,359
Other	478		(108)		370			(62)	(8)	(56)		244
Mutual funds	8,625		(1,948)		6,677					(310)		6,368
Closed-end funds	100		(23)		77							77
Exchange-traded funds	1,709		(386)		1,323					(113)		1,211
Domestic owned equity	30,234											

Source: Federal Reserve Board, Financial Accounts of the United States, June 2016.

the \$22,876, or 27 percent, is taxable corporate stock held by households either directly or in mutual funds or other kinds of pass-through accounts.

The great advantage of deriving these estimates from the Flow of Funds data is that it allows a detailed decomposition of holdings of corporate equity and a relatively consistent long time series dating back to 1965. As shown in the next section, this time series documents a remarkable transformation in the ownership of corporate stock. The concern about this methodology is that the household sector in the Fed data is a residual—what is left over after subtracting all of the types of corporate equity that may be measured directly. As such relatively small errors may loom large. For example, if the overall error in measuring corporate equity is 5 percent of the value in a year, that error is small relative to the total but would represent almost one-quarter of the value of taxable

Table 2. Reallocating US C Corp Equity
(Dollar Amounts in Billions)

	US C Corp Equity Before Reallocation	+	Reallocation to Ultimate Owners							=	After Reallocation		
			Household (taxable)	IRA/529	Nonprofits	Insurance	DB	DC	Foreigners		Other	Amount	Percent
	(8)		(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)		(17)	(18)
All holders	22,876		963	0	(963)	0	0	0	0	0		22,876	100
Household	6,808		1,909	(1,567)	(963)							6,188	27
IRAs and 529s	0			3,518								3,518	15
Nonprofit	0		963		10							972	4
Insurance companies	48					981						1,029	4
Defined benefit plans	2,050						1,215					3,265	14
Defined contribution plans	710							1,019				1,729	8
Foreigners	5,359								346			5,705	25
Other	244									225		469	2
Mutual funds	6,368		(1,425)	(1,793)	0	(816)	(1,011)	(848)	(287)	(187)		0	0
Closed-end funds	77		(29)	(9)	(1)	(10)	(12)	(10)	(3)	(2)		0	0
Exchange-traded funds	1,211		(454)	(148)	(9)	(155)	(192)	(161)	(55)	(36)		0	0

Source: Author's calculations based on methodology developed in Rosenthal and Austin (2016)

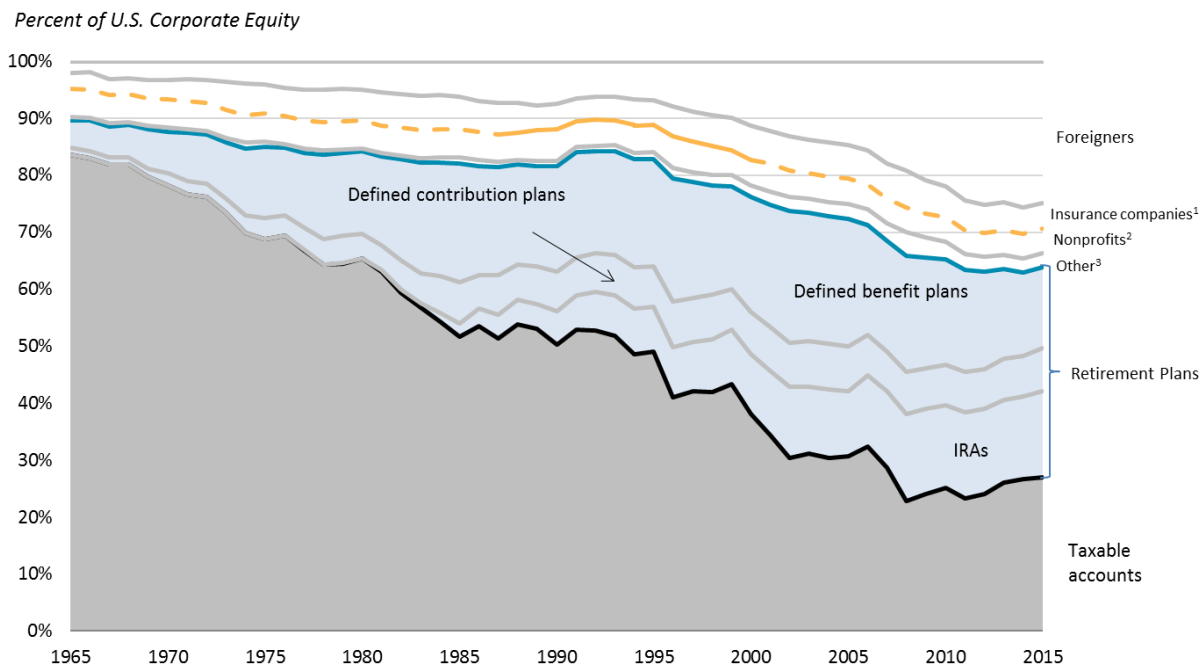
household stock that we measure. In addition, as detailed in Rosenthal and Austin (2016), a number of assumptions must be made to produce these estimates. These assumptions add a range of uncertainty that could amount to 2 or 3 percent of total corporate equity (or about 10 percent of the taxable household share).

In the next section, we examine the drivers of the change in corporate stock ownership over time. In section V, we compare these estimates to those derived from alternative data sources.

IV. The Change in Corporate Stock Ownership Over Time

Figure 1 decomposes corporate stock ownership over time based on data from the Flow of Funds data. In 1965, households held the vast majority of U.S. corporate equity—more than 80 percent—in taxable accounts, subject to tax on capital gains and dividends. The rest was held in pension funds and retirement accounts, by nonprofits and insurance companies, and a small amount by foreigners.

Figure 1. Ownership of U.S. Corporate Stock, 1965-2015, Including Both Direct and Indirect Holdings



Source: Board of Governors of the Federal Reserve System, "Financial Accounts of the United States;" Investment Company Institute. 2016, "The U.S. Retirement Market, Fourth Quarter 2015;" Barclay Hedge; Prequin; Tax Policy Center calculations.

(1) Stock held in non-taxable segregated reserves to fund annuity contracts and whole life insurance.

(2) Dashed lines indicate TPC estimates

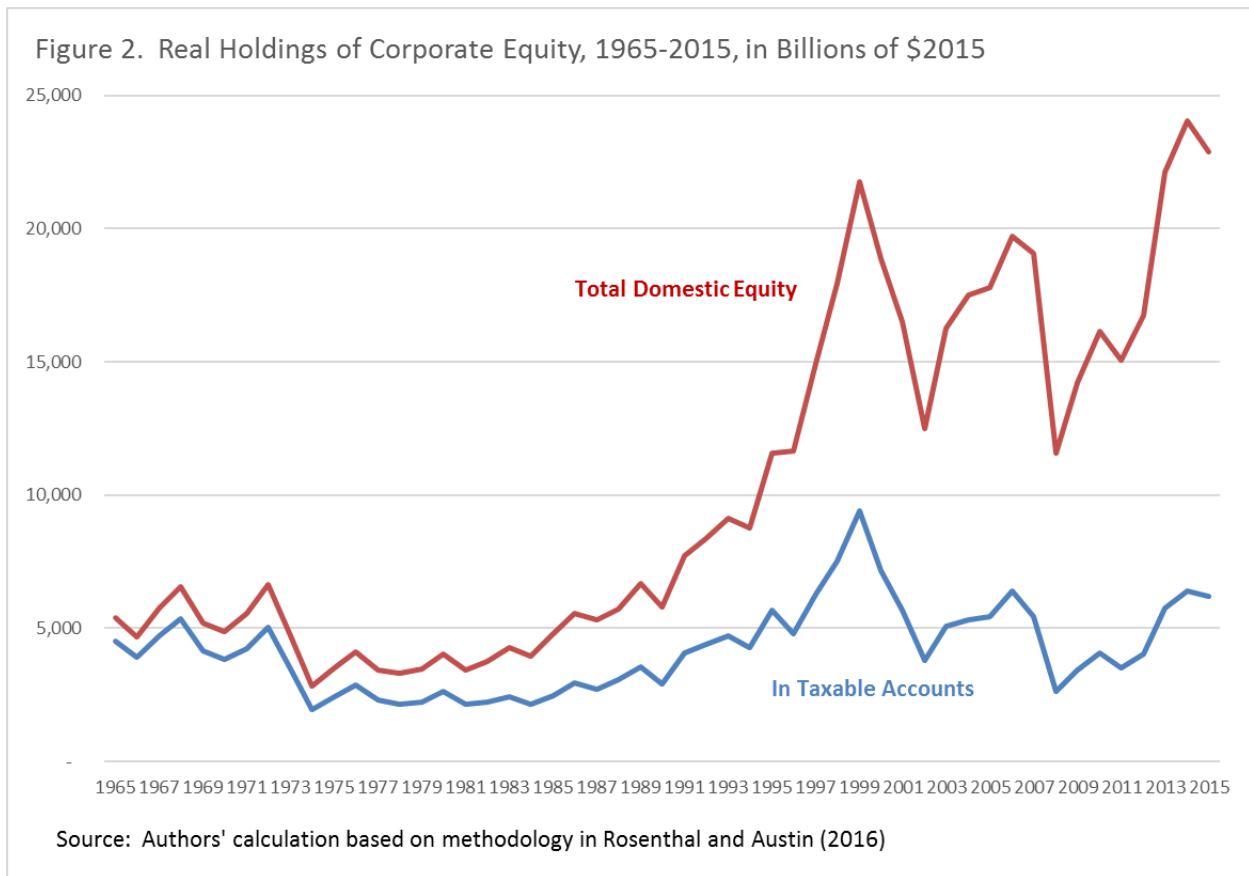
(3) Government holdings and equities in 529 savings plans.

By 2015, the pattern was completely different. Households held only 27 percent of corporate equity in taxable accounts. Retirement accounts, including IRAs and defined contribution retirement plans, which were almost non-existent in 1965, now account for 37 percent of corporate equity. The other big shift is in foreign ownership, which now accounts for one-quarter of corporate equity.

Part of the shift may be due to taxation. The share of equity in taxable accounts should depend on the tax rates on dividends and capital gains—higher tax rates should reduce the share of taxable accounts. However, dividend and capital gains rates were cut markedly in 2003 and remained at historically low levels until 2012, but the share of equities in taxable accounts fell

over that time period from the levels that prevailed in the 1980s and 1990s, when capital tax rates were comparatively high.

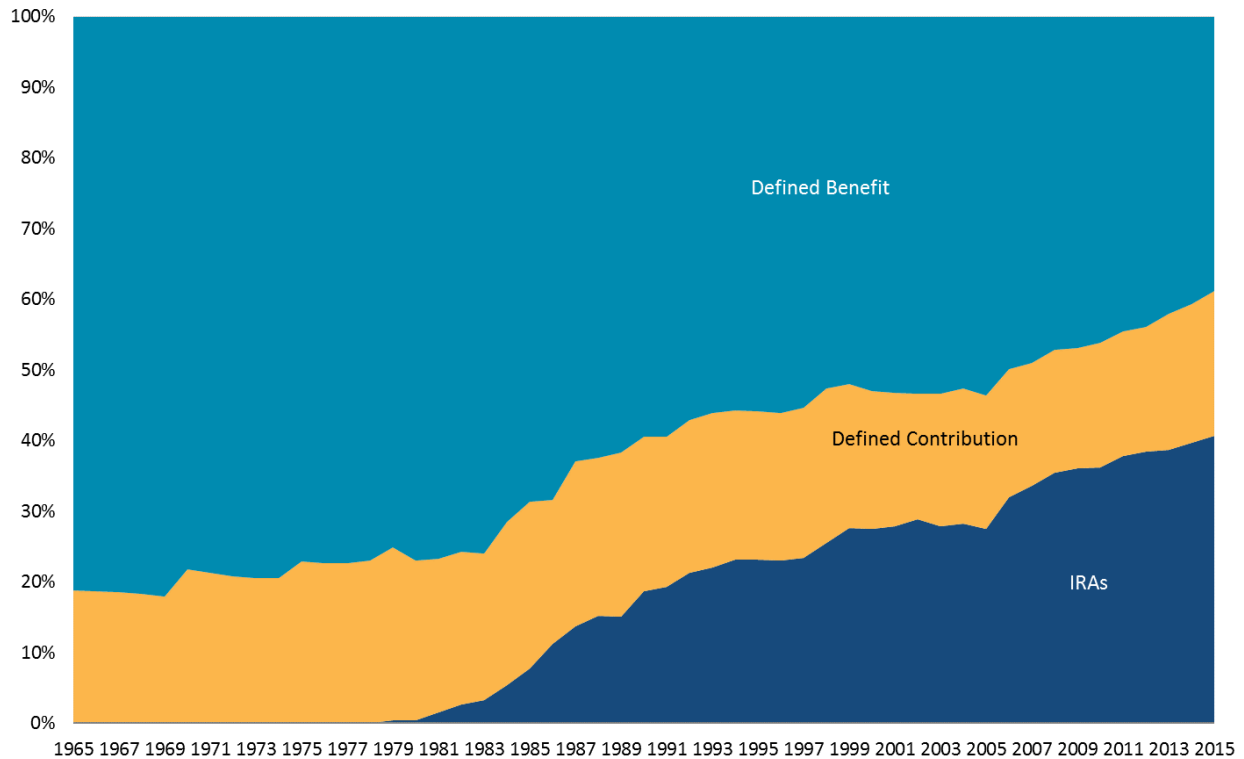
Figure 2 illustrates the enormous financial shift measured in these data. The total domestic equity line rises and falls with the overall stock market. The U.S. stock market has far outstripped inflation since the early 1980s and the Flow of Funds estimates of total domestic equity reflect that. By 2015, total equity is nearly five times the real value in 1990. In contrast, the amount in taxable accounts, after rising with the bull market in the 1980s, is remarkably flat in the years since. In 2012, real taxable equity holdings are virtually identical to their level 20 years earlier (although those holdings did grow with the bull market between 2012 and 2014). Put differently, at a time of remarkable growth in real wealth holdings (not shown), holdings of corporate equity in taxable accounts changed very little.



Three factors explain most of this shift. First, the share of corporate equity held in tax-free retirement accounts exploded over this interval. Second, increasing global financial markets mean that much more U.S. stock is held by foreigners at the same time that Americans are holding much more foreign equity. Third, wealthy people are holding much more of their wealth in pass-through entities such as S-corporations and partnerships, which are not subject to a second level of corporate tax.

As noted, retirement account comprise 37 percent of corporate equity in 2015, compared with 6 percent in 1965. The composition of retirement accounts has changed markedly over time. In 1965, DB accounts accounted for almost all of this total. Only 1 percent was in defined contribution retirement accounts and IRAs had not been invented yet. Through about 1980, defined benefit pensions accounted for three-quarters or more of the retirement savings held in U.S. corporate stock, but their share has fallen to about 50 percent at present, as the share of IRAs has increased. (See Figure 3.)

Figure 3. Retirement Account Holdings of U.S. Corporate Stock, by Type of Account, 1965-2015



Source: Authors' calculation based on methodology in Rosenthal and Austin (2016)

In 1974, Congress created IRAs. Subsequent legislation raised IRA limits increased and investors rolled over other retirement assets into IRAs. IRAs were further expanded in the late 1990s with the creation of Roth IRAs.⁶ By 2015, IRAs held 15 percent of all U.S. equity and accounted for almost one-third of retirement assets. Defined contribution accounts, such as 401(k) plans, also grew dramatically, from one percent of U.S. equity in 1965, to nine percent of U.S. equity in 2015, although their share of all retirement equity remained roughly constant.

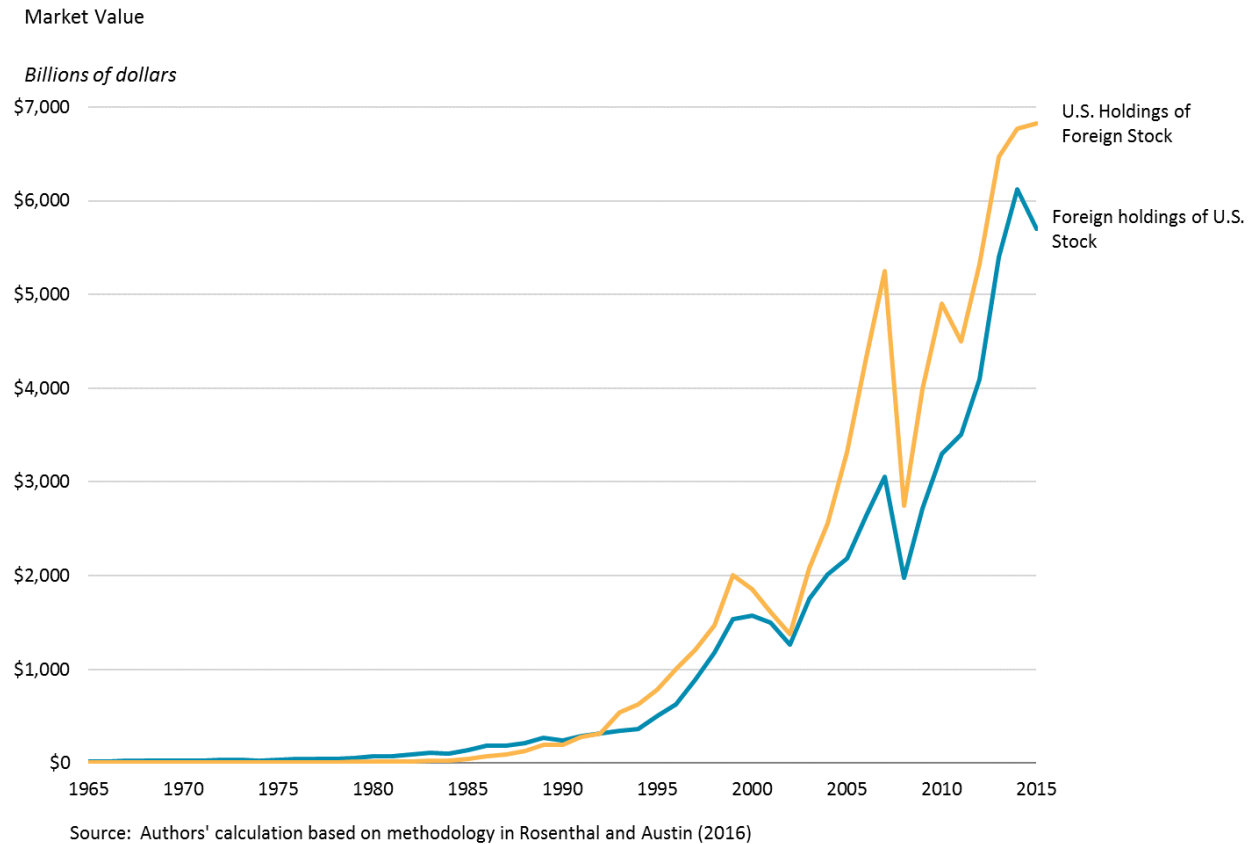
⁶ Amounts invested in a Roth IRA are not tax deductible, but the earnings are taxable at withdrawal. There are fewer restrictions on withdrawal in Roth IRAs, but eligibility to contribute is subject to income limits as with traditional IRAs. However, conversions to Roth IRAs are now allowed, regardless of income.

Larger demographic trends may have also contributed, as the baby boomer generation has moved into retirement. The baby boomer generation (born 1946-1964) is currently 52-70, and their retirement assets are burgeoning.

The growth in 529 plans as (tax exempt) vehicles for college saving has also played a small role in these trends (within the “other category” of Figure 1), as have increased assets held by insurance companies and nonprofits.

Over time, stock ownership has become more globally integrated. From 1965 to 1990, foreign residents held negligible U.S. equity. However, the previous decades have seen sharp increases in international holdings. By 2015, foreign residents directly held \$5.7 trillion, or 25 percent of all U.S. corporate equity, as reported by the Fed. Over that time period, U.S. residents increased their ownership of foreign stocks, holding \$6.8 trillion of foreign equity in 2015 (Figure 4).

Figure 4. Growth of Cross-Border Corporate Stock Holdings, 1965-2015



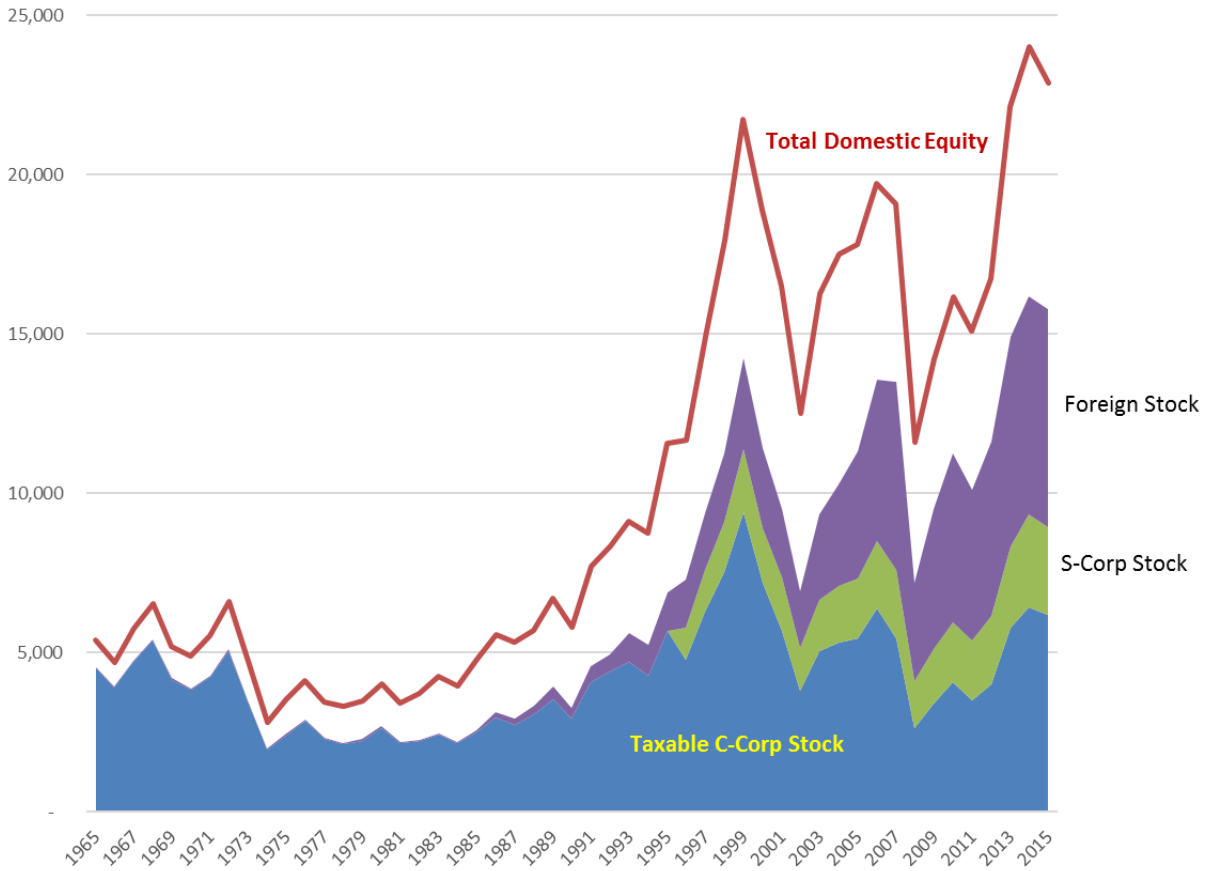
The final piece of the puzzle is the growing importance of S corporation and partnership holdings over the past thirty years. These entities avoid double taxation altogether since they

are only subject to one level of tax at the shareholder/partner level.⁷ Legal changes over the past few decades have made it easier to create partnerships with limited liability, which was previously a major inducement for incorporating. Cooper et al (2015) and DeBacker and Prisinzano (2015) found that both partnerships and S corporations have increased dramatically in value compared with C corporations. DeBacker and Prisinzano (2015, p.1565-6) note that mean income per partnership increased by an order of magnitude between 1988 and 2011, from \$20,000 to \$217,000. Mean portfolio income per partner grew from \$1,900 to \$30,000 over the same period.

The Flow of Funds do not report data on partnership shares, but they do report S corporation shares. Adding the value of S corporation stock and holdings of foreign shares to holdings of taxable equities produces a pattern very similar to the overall corporate equity ownership. (Figure 5.) This is consistent with very wealthy investors holding an increasing share of national wealth while not increasing their overall holdings of taxable corporate stock.

⁷ Cooper et al (2015) also document that many partnerships have multiple layers that make it very hard to trace partnership income to the ultimate recipients. It is possible that some wealthy investors are using these convoluted structures as a way to skirt tax obligations.

Figure 5. Real Holdings of Taxable Equity Compared with Total Domestic Equity, 1965-2015, in Billions of \$2015



Source: Authors' calculation based on methodology in Rosenthal and Austin (2016)

V. Deriving the Taxable Corporate Equity Share from Other Sources

We refine the methodology of Rosenberg (2012) to infer the taxable share of corporate equity issued by U.S. corporations. The IRS Statistics of Income (SOI) reports total qualified dividends reported on U.S. individual income tax returns as well as total dividends paid out by U.S. corporations reported on corporate income tax returns. A challenge is that some qualified dividends include dividends paid by foreign corporations and some of the U.S. corporate shares are held by foreign investors. Under certain assumptions, we can use data on dividend payout rates of U.S. and foreign corporations to estimate the share of corporate equity that appears on individual income tax returns.

Define D as total dividends paid by U.S. corporations and S as the total value of U.S. equity.

Divide both D and S into three components: D_t is dividends paid by U.S. corporations to taxable U.S. individual income taxpayers; D_n is dividends paid to nontaxable U.S. shareholders (such as

tax-exempt retirement accounts and nonprofits); and D_f is dividends paid to foreigners. Thus $D \equiv D_t + D_n + D_f$.

Similarly, S can be broken down by ownership class as well, so that $S \equiv S_t + S_n + S_f$.

Since 2003, qualified dividends—that is, dividends paid on domestic and most foreign corporate equity—have been subject to a lower income tax rate.

D_q is qualified dividends, defined as $D_q \equiv D_t + D_x$, where D_x is qualified dividends on foreign stock held by U.S. taxpayers.

Define the dividend payout rate for each class of U.S. stock as α , again broken down by ownership.

$$\alpha \equiv \frac{D}{S}, \quad \alpha_t \equiv \frac{D_t}{S_t}, \quad \alpha_n \equiv \frac{D_n}{S_n}, \quad \text{and} \quad \alpha_f \equiv \frac{D_f}{S_f} \quad (1)$$

Finally, define $\alpha_x \equiv \frac{D_x}{S_x}$ as the payout rate on foreign stock and $\alpha_q \equiv \frac{D_q}{S_q}$ as the average qualified dividend payout rate on equities held by individuals, and $S_q \equiv S_t + S_x$.

The objective is to estimate S_t/S .

With some manipulation,

$$\frac{S_t}{S} = \frac{D_t/\alpha_t}{S} \quad (2)$$

Dividing the numerator and denominator by D ,

$$\frac{S_t}{S} = \frac{\frac{1}{\alpha_t} \cdot \frac{D_t}{D}}{\frac{S}{D}} \quad (3)$$

Substituting the definition of α into (3) and rearranging yields:

$$\frac{S_t}{S} = \frac{\alpha}{\alpha_t} \frac{D_t}{D} \quad (4)$$

We do not observe D_t directly, but can estimate it based on D_q . Recall that $D_q = \alpha_q \cdot S_q$ and $D_t = \alpha_t \cdot S_t$. Thus,

$$D_t = \frac{\alpha_t \cdot S_t}{\alpha_q \cdot S_q} D_q \quad (5)$$

Substituting (5) into (4) and rearranging yields:

$$\frac{S_t}{S} = \frac{\alpha}{\alpha_t} \cdot \frac{\alpha_t \cdot S_t}{\alpha_q \cdot S_q} \cdot \frac{D_q}{D} \quad (7)$$

Simplifying produces the following expression:

$$\frac{S_t}{S} = \frac{\alpha}{\alpha_q} \cdot \frac{S_t}{S_q} \cdot \frac{D_q}{D}$$

That is, the share of equities held in taxable accounts is the product of the ratio of the average dividend yield on U.S. securities to the average yield on securities in American shareholders' taxable portfolios, the share of domestic securities in those portfolios, and the ratio of qualified dividends to total dividends.

The ratio of qualified dividends to total dividends was 32 percent in 2013, the most recent year for which the tax data are available, but the ratio varies a lot from year to year. (See Table 3.) It was over 50 percent in the prior year. It is possible that legislative changes (for example, fear that the temporarily lower tax rate on dividends enacted as part of JGTRRA would expire as scheduled at the end of 2012 or 2010) or the business cycle were affecting the relationship between qualified dividends and overall dividends.

The average ratio of qualified dividends to total dividends post-JGTRRA was 43 percent and the average domestic share of qualifying dividends (from the Flow of Funds) was 78 percent implying a ratio of taxable to total equity of 34 percent over the 10 years, if we assume that dividend payout rates are equal so that the ratio α/α_q is 1. In comparison, the average ratio derived from the flow of funds was 27 percent over that interval.

Table 3. Estimating the Taxable Share from Dividend Data, 2004 to 2013

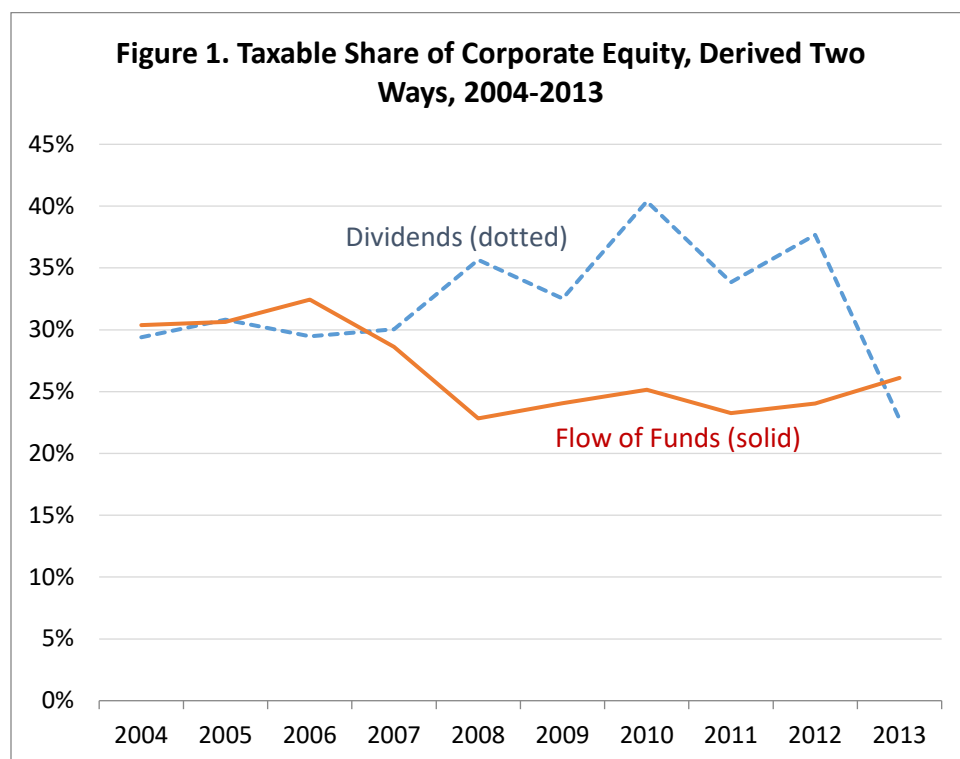
(Dollar Amounts in Billions)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
Qualified Dividends (D_q)	110.5	119.0	137.2	155.9	159.0	123.6	136.5	142.0	204.4	158.1	144.6
Total Dividends (D)	303.9	297.7	338.4	342.5	335.9	281.8	266.7	291.9	369.2	496.5	332.5
D_q/D	36%	40%	41%	46%	47%	44%	51%	49%	55%	32%	43%
Domestic Share (S_t/S_q)	85%	82%	80%	77%	79%	77%	76%	76%	76%	77%	78%
S_t/S if $\alpha = \alpha_q$	31%	33%	32%	35%	38%	34%	39%	37%	42%	25%	34%
U.S. average yield (α)	1.8%	1.7%	1.9%	1.8%	1.3%	2.8%	2.1%	1.8%	2.4%	2.4%	2.0%
Foreign average yield	2.4%	2.3%	2.8%	3.0%	1.7%	3.2%	1.8%	2.6%	3.4%	3.2%	2.6%
Weighted average (α_q)	1.9%	1.8%	2.1%	2.0%	1.4%	2.9%	2.0%	2.0%	2.6%	2.6%	2.1%
α / α_q	95%	94%	91%	86%	95%	97%	104%	91%	90%	93%	94%
S_t/S using these data	29%	31%	29%	30%	36%	33%	40%	34%	38%	23%	32%
Flow of Funds	30%	31%	32%	29%	23%	24%	25%	23%	24%	26%	27%

Source: Statistics of Income, IRS; National Income and Product Accounts; Yield data from Vanguard Total Stock Market Index (VTSMX) and Vanguard Total International Stock Index Fund (VGTSX).

If we use the average yields from broad domestic and foreign market indices weighted by the domestic and foreign shares of S to estimate α , we estimate that α/α_q equals 93.5 percent on average. This lowers the average share of taxable stock to 32 percent.

The two series do not track perfectly, but the range is comparable. (See Figure 1.) The Flow of Funds estimates are actually slightly higher than the estimates based on dividend data at the beginning and end of the interval, but the series diverge between 2007 and 2012. It is not clear why this is so.



VI. Implications of the Diminishing Taxable Share of U.S. Corporate Stock

These findings have important implications for corporate tax policy as well as several other questions in public economics, including the measurement of the cost of capital, the importance of capital gains lock-in effects, the consequences of changes in dividend taxation, and the nature of clientele effects.

A. Implications for the Corporate Tax

Since the most U.S. corporate equity is untaxed at the investor level, the corporate tax takes on a much more important role in taxing corporate equity income, either as an entity-level tax or as a nonrefundable withholding tax on investors. Our estimates suggest that for 68 to 75 percent of corporate equity (depending on whether the estimate is derived from dividend data or Flow of Funds), the corporate tax is the *only* level of taxation in the US.

Still, several influential recent proposals, including Altshuler and Grubert (2016) and Toder and Viard (2016), suggest moving more of the capital tax burden from the corporate income tax to the individual income tax. Both of these proposals couple a dramatically reduced corporate tax rate (of 15%) with increased individual capital taxation. Given the low taxable share of U.S. corporate stock, such proposals require either a fundamental rethinking of tax preferences or a large revenue loss.

Toder and Viard go some direction toward rethinking tax preferences. In order to get closer to revenue neutrality, for example, they suggest a 15% tax on income in tax-preferred retirement accounts and non-profit institutions, and mark-to-market capital gains taxation.⁸ This still leaves an annual revenue loss in the \$11-23b range.⁹

Altshuler and Grubert (2016) have a similar proposal, but it relies on an interest charge assessed on deferred tax liabilities during the holding period of assets with capital gains; this avoids some of the liquidity and volatility concerns associated with mark-to-market taxation, and it also avoids valuation difficulties with assets that are not publicly traded.¹⁰ Altshuler and Grubert note that their proposal is not a simple relabeling of tax burdens from the corporation to the individual. In particular, untaxed account holders (e.g., retirement funds and non-profits) will benefit from the reduced tax at the corporate level, whereas increased individual taxes will fall in

⁸ They include some smoothing provisions as well as exemptions for small asset holders.

⁹ They have a second revenue calculation that includes behavioral response, assuming increased reporting of taxable profits in the United States as a result of the lower corporate tax rate. Yet, as discussed below, the extent to which revenue would be recouped through this mechanism is an open question.

¹⁰ They include a provision for deemed capital gains realizations upon death or when an asset is given to another person. The text describes their preferred proposal; Altshuler and Grubert also consider other proposals in this paper.

part on income earned abroad by U.S. portfolio investors. It is not clear whether this shift in tax burden is desirable.¹¹

More generally, the share of corporate equity held in individuals' taxable accounts is relevant to assessing the effects of corporate tax integration proposals, which are aimed at eliminating double taxation. Our estimates imply that attempts to integrate capital income taxation across corporations and taxpayers that are economically equivalent assuming all investors are subject to individual-level taxation may not be equivalent with most corporate income avoiding individual level taxes. For example, a shareholder credit for taxes paid at the corporate level would not be equivalent to a dividend deduction for corporations, since most dividends are received by tax-exempt investors such as retirement accounts, 529s, and nonprofits, and foreign investors.^{12 13}

Part of the rationale for some recent tax plans, such as those offered by candidates Trump (which would lower the corporate tax rate to 15%) and Cruz (which would replace the corporate tax with a subtraction-method VAT) and Congressman Ryan (which would lower the corporate tax rate to 20%) was to reduce the purported double taxation of corporate income. Yet, given the low taxable share of U.S. corporate stock at the individual level, such proposals risk large revenue losses that would disproportionately benefit those at the top of the income distribution.¹⁴

In contrast, both the Altshuler and Grubert (2015) and the Toder and Viard (2015) proposals originate, at least in part, out of concerns regarding corporate tax competition and tax base erosion due to profit shifting. These concerns lead the authors to prefer the individual level of taxation, without necessarily intending a net reduction in capital income taxation. Still, it is unclear that a corporate tax rate as low as 15% would be enough to stem profit shifting. Recent research by Dowd, Landefeld, and Moore (2014) suggests that the corporate taxable income

¹¹They do not do a full revenue estimate for this proposal, but they perform some illustrative calculations that indicate that the proposal need not lose revenue, once behavioral responses are included. They also include a minimum tax on foreign income.

¹² The two methods of integration would retain their equivalence if the dividend deduction were implemented as a nonrefundable withholding tax at the corporate level for tax due at the investor level; in this case, the tax-exempt investors (retirement accounts and nonprofits) would still pay tax. These issues of equivalence were discussed in Appendix C of the Treasury integration study of 1992.

¹³The forthcoming integration proposals from Senate Finance Chairman Hatch would rely on a dividends paid deduction for corporations, coupled with a withholding tax on behalf of shareholders of the same amount, which presumably would not be refundable for tax-exempt investors. This integration proposal would thus largely amount to a relabeling of the current corporate tax, although it might have some effects through the financial reporting channel. It may also affect shareholders, depending on their circumstances. See Kleinbard (2016b) and a blog post by Daniel Shaviro from 30 June 2016: <http://danshaviro.blogspot.com/2016/06/kleinbard-on-senate-finance.html>.

¹⁴ By any reasonable incidence assumptions, the corporate tax is a highly progressive tax. For example, the Treasury department assigns 82% of the burden of the corporate tax to capital income and 18% to labor income, after assigning all supernormal (or excess) profits to capital income, and half of normal profits to labor and half to capital income. Under this method, the U.S. corporate tax is a very progressive tax, with the highest quintile paying 76% of the tax burden, and the top 1% paying 43% of the burden. See Cronin et al (2012) for details regarding their method and alternative assumptions, and Clausing (2012, 2013) for more on the incidence of the corporate tax.

response is highly non-linear and most responsive at very low rates. Clausing (2016a) indicates that 98 percent of profit shifting is occurring with respect to countries with effective tax rates below 15 percent, and 82 percent is occurring with respect to just seven tax havens with effective tax rates below 5 percent. These studies indicate that even lowering the U.S. corporate tax rate to 15 percent may not be enough to substantially alter the incentive to divert income to the lowest tax havens.

Further, there are ample policy options for improving the ability of the corporate tax to function in a global economy that would likely be quite effective. One advantage of buttressing the corporate tax is that one would not have to solve the vexing problems of taxing capital income at an individual level that the above proposals reveal. In particular, it may prove politically impossible to undo the longstanding tax preferences for retirement and non-profits, and raising capital income taxes on individuals creates its own problems. Capital gains lock-in problems associated with high individual capital gains tax rates necessitate difficult technical problems, although Altshuler and Grubert's suggestion of an interest charge may be simpler than the difficulties of mark-to-market taxation.

A few simple yet effective policy options for strengthening the corporate tax include the following:

1. At present, the U.S. system does not tax income earned in low-tax countries until it is repatriated to the United States. This gives multinational firms a big incentive to book income in low-tax countries and to avoid repatriation. To address this problem, a minimum tax could be adopted. A minimum tax would currently tax foreign income that was earned in jurisdictions below some threshold. (The Obama administration has suggested 19%.) This would substantially reduce the benefits of deferral, and thus the incentive to shift income. It would also nearly eliminate the "lock-out" effect for unrepatriated income, since the vast majority of such income is booked in the lowest-tax countries.
2. Tougher "earnings stripping rules" (under section 163(j)) would be helpful to stem some types of profit shifting. Since one of the key drivers behind corporate inversions is facilitating the subsequent shifting of income out of the U.S. tax base, tightening these rules would also reduce the lure of inversion.¹⁵ Sullivan (2014) has cataloged many previous proposals to tighten these rules.
3. Corporate inversions could also be addressed through a combination of other measures including increasing the legal standard for a foreign affiliate to become a parent, a management and control test,¹⁶ and an exit tax. The exit tax would be levied on repatriating companies based on the U.S. tax due on outstanding stocks of income that have not been repatriated.¹⁷

¹⁵ Foreign multinationals are less subject to the limits of current earnings stripping rules.

¹⁶ U.S. corporations could be disallowed from moving abroad for tax purposes if they remained managed and controlled in the United States or if the corporation did not do significant business in the country it claims as its new home.

¹⁷ For elaboration, see Shaviro, "Understanding and Responding to Corporate Inversions," (blog), July 28, 2014, <http://danshaviro.blogspot.com/2014/07/understanding-and-responding-to.html>. Shareholders still

4. Finally, useful elements of the OECD/G20 BEPS (base erosion and profit shifting) recommendations should be adopted, including (but not limited to) the requirement for country by country reporting and the Action Item 2 recommendations, which would address issues surrounding the “check the box” loophole.

Even more fundamental reforms would also help buttress the corporate tax. Two promising fundamental reforms are worldwide consolidation and formula apportionment; these are discussed at greater length in Clausing (2016a).

B. Implications for the Cost of Capital

At a very basic level, individuals’ taxable share of corporate equity determines, in part, the effective tax rate on returns to corporate equity.¹⁸ The standard model (and much political discourse) assumes that corporate equity is taxable both at the company level, under the corporate income tax, and at the individual level when profits are paid out as dividends or shares are sold and produce taxable capital gains. However, if most corporate earnings are not subject to the individual income tax, then the effective tax rate on equity-financed corporate investment is lower, and the distortion in resource allocation in favor of non-corporate capital is smaller, with a commensurately smaller deadweight loss.¹⁹

For example, according to Rosenberg and Marron (2015), in 2014 (when bonus depreciation was in effect), the average marginal effective tax rate on new corporate investment was 26 percent under the model’s standard assumption that taxable individuals held 60 percent of corporate equity.²⁰ (See Table 4.)

If the assumed taxable share fraction is reduced instead to 25 percent, the marginal effective tax rate falls to 21 percent. For investments that are entirely financed with equity, the difference is even bigger: falling from 33 percent (under the 60 percent taxable share assumption) to 27 percent. (Note that the taxable share assumption does not affect debt-financed investments, which actually face a negative effective tax rate under current law because of tax incentives such as the research and experimentation tax credit and accelerated depreciation.)

pay capital gains taxes under typical inversion deals since the merger creates a realization event, but exit taxes would affect tax at the corporate level. Of course, many capital gains are not taxed at the individual level, if the shareholder is tax-exempt (e.g., nonprofits, pensions, and annuities).

¹⁸See Cooper et al (2015), *citing* Poterba (2004), and CBO (2014).

¹⁹ We recognize that the share of corporate capital held in taxable accounts is endogenous to taxation. Individuals likely hold a smaller share of corporate equity in taxable accounts at current tax rates than they would hold if their tax rates were lower (or if some of the tax preferences for retirement accounts and other holders of equities were reduced). There is a burden attributable to this shift, both in terms of risk bearing, and rate of return earned by taxable individuals, and the potentially higher cost of capital for businesses.

²⁰ Joseph Rosenberg of the Tax Policy Center performed these calculations using TPC’s cost of capital model, which is documented in Rosenberg and Marron (2015).

Table 4: Marginal Effective Tax Rates on New Investment

Category	Fraction of equity return subject to tax				
	0 percent	25 percent	50 percent	75 percent	100 percent
Business Investment	18.3%	20.3%	22.4%	24.5%	26.6%
Corporate	17.9%	21.1%	24.3%	27.7%	31.1%
Pass-through	19.1%	19.1%	19.1%	19.1%	19.1%
Corporate (equity financed)	23.7%	27.3%	31.0%	34.8%	38.5%
Corporate (debt financed)	-6.2%	-6.2%	-6.2%	-6.2%	-6.2%

As documented in Rosenberg and Marron (2015), there is presently a large variance in tax rates among industries, depending on both financing patterns and the types of investments within different industries. However, as Table 4 illustrates, as the taxable share of equity is lower, the tax burdens on the more highly taxed investments falls, and this also lowers the variance of tax rate treatment across investments and industries.

C. Implications Regarding Capital Gains Taxation

These findings also affect our assessment of the capital gains tax. Although there is a wide range of views on the effect of taxes on capital gains, there is a consensus that the tax discourages individuals from selling capital assets. This ‘lock-in’ effect lowers individual welfare, and may cause prices of capital assets to react slowly to information about company performance, which can distort resource allocation. However, if most capital assets are held in accounts exempt from capital gains tax, then the lock-in effect is a smaller problem. Also, the real effects of taxing capital gains on investment and risk-taking are likely to be smaller.²¹

Another issue arises in presidential candidate Hillary Clinton’s proposed capital gains tax incentives to hold assets longer based on the notion that “patient capital” would encourage corporate managers to make more long-term investment decisions. Burman (2015) questions the rationale for the policy, but it’s also likely to be ineffective if most corporate capital is not subject to the individual capital gains tax rate.

D. Implications Regarding Dividend Taxation

The taxable share is critical to understanding how taxing dividends affects corporate decision-making and economic efficiency. One concern about dividend taxation is that it gives companies an incentive to retain profits rather than distribute them as dividends since taxable shareholders

²¹ For more discussion of the economic effects of taxing capital gains, see Burman (1999).

would prefer to defer paying tax. This can create corporate governance issues and result in corporations with large hordes of cash that earn lower rates of return than alternative investments that shareholders might otherwise make. As a result, capital is misallocated.

However, if most corporate dividends are not taxed, then there is relatively little tax incentive for companies to retain their earnings.²² This also affects our assessment of the economic effects of changing dividends tax rates as was done in 2003, when qualifying dividends were made eligible for the lower capital gains tax rates, and again in 2012, when top dividend and capital gains tax rates increased. Besides changing the incentive to raise or lower dividend payouts, the small share of corporate equity subject to tax means that a lower tax rate on dividends may do little to lessen the distortion in choice between debt and equity (since dividends are mainly received by tax-exempt investors—who are indifferent).

For the same reason, dividend tax cuts may also have weak effects on the cost of capital. This provides one possible solution to a puzzle posed by Yagen (2015). In a careful analysis published in the *American Economic Review*, Yagen finds that the 2003 dividend tax cut caused “zero” change in corporate investment and employee compensation, despite the fact that proponents argued that the cut (from 38.6 to 15 percent for the top rate) would spur investment by reducing the cost of capital.²³ Edgerton (2013) shows that there are good reasons to suspect that the 2003 dividend tax cut did not increase payouts, though Yagen (2015) argues that payouts did increase, but there was no real effect from increased payouts, just a rearranging of financial claims. Regardless, the presence of a large share of tax-exempt investors can be expected to dull the influence of dividend tax cuts on the cost of capital, and thus reduce any possible positive effects on investment.

E. Implications Regarding the Nature of Clientele Effects

Investors may sort into different types of assets based in part on their different tax treatments. For example, investors in the highest tax brackets may disproportionately invest in lower-return, tax-exempt assets like municipal bonds, relative to investors in lower tax brackets. The 2003 dividend tax cuts likely reduced the size of such clientele effects.

²² There remains, however, a separate problem concerning dividend repatriation from abroad. Under the present U.S. corporate tax system, U.S. tax is due on foreign income when it is repatriated, with a foreign tax credit for any foreign tax paid. In the case of income earned in low-tax countries, this gives firms an incentive to avoid repatriation, especially if they expect the tax treatment of repatriated earnings to be more generous in the future. However, firms can borrow against these earnings to finance their investments, and there is no evidence that investment in the United States is being reduced as a consequence. Further, as Kleinbard (2016a) explains, firms can even borrow against these earnings to issue dividends, and this can generate the equivalent of a tax-free repatriation (assuming away interest rate differentials).

²³ Yagen explains the finding with alternative models that suggest that marginal investments are financed from retained earnings or debt, so that dividend tax burdens do not affect marginal investment decisions; dividend tax cuts increase the returns on investment and the opportunity costs of investment in parallel.

Investors may also have different preferences for dividend issue relative to retained earnings. The higher rate at which dividends are taxed, the greater the tax preference for letting earnings accumulate tax-free within the firm. Since the dominant share of U.S. corporate stock is not held in taxable accounts, such investors are not tax-sensitive. This dilutes the importance of anticipated dividend tax liabilities in corporate decision making, and lessens associated worries regarding corporate governance.

F. Might Taxable Shareholders Still have an Outsized Effect?

A question for further research is whether taxable shareholders might have a disproportionate effect on the cost of capital and corporate investment decisions despite their minority status in the pool of equity holders. For example, foreign investors, who hold about 20 percent of equity, might be very sensitive to corporate taxes. There also may be clientele effects, such that taxable investors have a large influence in some subsets of the market. For example, if households hold little taxable stock because of double taxation, a small cut in the individual level tax rate could significantly expand the supply of corporate capital if it reduces the tax price below a hurdle rate for new investment.

In addition, contributions to retirement accounts are capped at levels that most high-income investors exceed. Thus, the amounts in those accounts, even though they can grow to be quite significant as a share of all corporate capital, are inframarginal in many cases. Wealthy individuals' marginal investment choices will be from among taxable domestic stock, foreign stock (also taxable in the US), or alternative investment vehicles such as S corporation stock, partnership shares, or bonds.

Yagen (2015) describes alternative models that suggest that marginal investments are financed from retained earnings or debt, so that dividend tax burdens do not affect marginal investment decisions; dividend tax cuts increase the returns on investment and the opportunity costs of investment in parallel. The results above also suggest that many investors also may not be sensitive to dividend taxation simply because they are tax-exempt.

VII. Conclusions and Directions for Future Research

Our estimates suggest that the taxable share of U.S. corporate equity has declined dramatically in recent years, from over 80 percent in 1965 to about 27 percent at present. An alternative data source confirms that the taxable share is at most about a third, and may be lower. There are several reasons for the declining taxable share of U.S. corporate stock, but changes in dividend and capital gains tax rates do not provide an obvious explanation, since the taxable share fell most steeply in years when individual dividend and capital gains tax rates were lower.

The growth of tax-exempt retirement accounts does help explain this trend, as legal changes have increased the size and scope of tax-free savings vehicles, and demographic factors have also likely played a role. In addition, the increasing globalization of financial markets has

increased the share of U.S. corporate stock in foreign accounts. Finally, the increasing prevalence of pass-through business organization may have played an important role in these trends.

These findings have essential consequences for corporate tax reform. Simply put, unless policymakers are willing to engage in a wholesale rethinking of tax preferences or lose substantial tax revenue, the corporate tax is an indispensable feature of capital income taxation. Without a corporate tax, much income of profitable firms would go untaxed since the vast majority of equities are held in tax exempt form. Further, replacing corporate taxation with individual taxation could generate large lock-in effects and sheltering opportunities²⁴, and most solutions to such problems raise vexing technical problems.²⁵

Thus, the corporate tax is worth defending on pragmatic tax administration grounds. In addition to filling important revenue needs, it contributes to the progressivity of the tax system, an important feature giving trends in income inequality. Recent economic theory has also buttressed the efficiency case for taxing capital.²⁶

Beyond corporate tax reform, these findings also have implications for several other questions in public economics. The cost of capital is likely lower than one would expect from calculations that overestimate the share of U.S. corporate equity in taxable accounts. A lower taxable share of U.S. corporate stock lowers the sensitivity of investment to dividend tax rates, lowers the tax incentive to retain earnings, lowers capital gains lock-in effects, and reduces the importance of clientele effects.

These findings also raise important questions for future research. For instance, who is the marginal investor? How does corporate decision-making reflect the tax treatment of their investors? Are there important clientele effects whereby taxable investors are more likely to invest in subsets of the market? Does this affect corporate governance in important ways?

In addition, an increasing share of business activity is organized in non-corporate form, helping to explain the diminishing taxable share in the corporate sector. As legal changes have made it easier to create partnerships with limited liability, the partnership sector has become far more important. Cooper et al (2015) note that complex partnership structures often result in large quantities of partnership income that cannot be ultimately traced to a beneficial owner, generating the concern that firms are minimizing tax through opaque organizational forms. They

²⁴ Sheltering opportunities exist when corporate rates fall below personal income tax rates and corporations retain a large share of their earnings. See Gravelle and Hungerford (2012).

²⁵ In the case of mark-market taxation, there are concerns associated with valuation, taxpayer liquidity, and revenue instability. Interest rate charges come with their own set of difficulties due to asset price fluctuations and sticker-shock, as well as the political pressures caused by large pending tax bills.

²⁶ In models with real world features such as finitely-lived households, bequests, imperfect capital markets, and savings propensities that correlate with earning abilities, capital taxation has an important role to play in an efficient tax system. See Clausing (2016b) for further detail on these points.

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show that pass-through income is generally taxed at lower effective tax rates than C-corporation income. Such trends also raise important tax policy questions for future research.

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