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will discuss

"What Do Firms Do With The Cash From Tax Savings?"

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What Do Firms Do With The Cash From Tax Savings?

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Abstract: We investigate what U.S. public companies do with cash generated from saving corporate income tax. We measure tax savings as the unexpected change in cash taxes paid, and we apply a "use of funds" model to determine how cash tax savings are used. Our results demonstrate that while some of the cash is saved, a substantial amount is used for real investments in the form of capital expenditures or acquisitions, and this effect is concentrated in multinational firms. Our evidence suggests that relative to other sources of cash, multinational firms are more likely to use cash saved from taxes on real investment, suggesting that investment opportunities may be related to corporate tax avoidance. Our evidence also suggests that firms more readily invest the tax savings from permanent, rather than deferral strategies which provides a possible explanation for why tax managers are compensated based on GAAP ETR.

JEL classification: G31; H20

Key Words: Tax Avoidance; Cash Holdings; Real Investment; Multinational Corporations

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What Do Firms Do With The Cash From Tax Savings?

1. Introduction

A fundamental question in public finance economics is how the corporate income tax affects investment. For example, Djankov et al. (2010) use extensive tax survey data from PricewaterhouseCoopers to estimate the relation between effective corporate tax rates and fixed capital investment as a percentage of GDP across eighty-four countries for 2004. In this study we provide evidence related to this question using a microeconomic approach, by estimating what a sample of U.S. corporations does with the cash saved from reducing corporate tax payments. If corporate income taxes affect investment, then our expectation is that cash saved from reduced tax payments should increase the firm's investments.

While economic theory suggests that cash from tax savings should affect investment, an alternative hypothesis is that U.S. firms, particularly multinationals, have plenty of cash available for investment, and any additional cash generated from tax savings will simply be saved by the firm in the form of cash or marketable securities.[1] In recent years the cash balances of U.S. corporations have increased dramatically, and academic studies such as Foley et al (2007) as well as the financial press (Fleischer 2012) argue that tax repatriation costs for U.S. multinationals play a substantial role in this increase. We therefore distinguish between what we call real investments (e.g., property and equipment) and financial investments (e.g., marketable securities), and we view the question—which type of investment is more likely to be funded by cash from tax savings?—as an empirical question.

[1] We recognize that firms often hold their cash in "equivalent securities" such as short-term US treasuries. In this paper we measure cash as cash and equivalents, and use the terms "cash" and "cash and equivalents" interchangeably.

To examine how firms use cash from tax savings, we first estimate the amount of unexpected cash from tax savings using a firm's cash effective tax rate (Cash ETR) from Dyreng et al (2008), where the Cash ETR is equal to cash paid for taxes during the year divided by pretax financial accounting earnings for the year. We assume that the Cash ETR follows a random walk, so that the unexpected Cash ETR for the year is the change in the annual Cash ETR, and we multiply the unexpected Cash ETR by the current year pretax earnings to estimate the unexpected cash savings due to taxes for the year. Next we follow Kim and Weisbach's (2008) "use of funds" approach from the finance literature and use a variety of accounting variables to capture the possible uses of cash saved from taxes. We relate cash saved from taxes to future changes in subsequent year total assets, inventory, capital expenditures, acquisitions, research and development, long-term debt, receivables, advertising, cash and equivalents, dividends, and share repurchases. By examining the alternate uses of cash from tax savings we provide evidence on how the corporate income tax affects different types of investments.

We find evidence that both domestic and multinational firms keep a large portion of the cash saved from taxes as additional cash or short term investments. However we also find that cash from tax savings is associated with real investments in both capital expenditures and acquisitions. In supplemental tests we find that this result is driven by the multinational firms in the sample. In other words, compared to domestic firms, cash from tax savings for multinational firms is associated with larger increases in both capital expenditures and acquisitions.

Our results provide evidence that, despite the fact that multinationals have larger cash balances than domestic firms, multinationals retain a smaller percentage of the cash from tax savings relative to other sources of cash, and instead use this cash to make real investments in either capital expenditures or acquisitions. In fact, we find that relative to other sources of cash,

multinationals invest 46% more of cash from tax savings in acquisitions, and 81% more of cash from tax savings in capital expenditures.

The effect of the corporate income tax on investment is a fundamental public policy question that has been of interest to researchers since at least Jorgensen (1963). We join a long line of prior research such as Hall and Jorgensen (1967), Summers (1981), Slemrod (1990) and Devereux et al. (2002)[2] well as concurrent research such as Cohn (2011) and Asker et al (2013) in studying this question. The innovation of our paper is that by estimating a use of funds model, we are able to trace how firms use cash tax savings in a general context even when statutory rates and tax incentives are stable. Our research setting is thus not limited to changes in the corporate income tax rate (Asker et. al 2013), or to firms with poor performance in prior years leading to current year net operating losses (Cohn 2011).

Our results make an important contribution to our understanding of the relation between corporate income taxes and investment. While paying corporate income taxes is important from a social welfare perspective, our results suggest that a substantial portion of taxes saved is invested in real investments, which may provide offsetting social welfare benefits. Our results should also be of interest to those engaged in the public policy debate over the role and effect of corporate income taxes, especially as it relates to U.S. multinationals.

This paper also makes an important contribution to the tax avoidance literature and increases our understanding of corporate tax avoidance. While many studies examine various determinants of tax avoidance, we are unaware of any study that examines how firms actually *use* the cash that is generated from avoiding corporate income taxes. This approach increases our

[2] See Hasset and Hines (2002) and Cohn (2011) for a review

understanding of why firms may avoid corporate income taxes, and the potential effect of this tax avoidance on various firm characteristics and production possibilities.

2. Research Design and Sample Selection

Our research design requires two firm-specific measures: (1) the amount of unexpected cash each year from tax savings, and (2) an estimate of where the unexpected cash is invested. In this section we discuss both of these research design issues.

2.1 Unexpected cash from taxes

Our measure of unexpected cash from taxes is based on the firm's Cash ETR. The Cash ETR has been used extensively in accounting research as a measure of the amount of cash that a firm pays in taxes for a given amount of reported earnings, and Dyreng et al. (2008) demonstrate that this ratio remains stable for many firms over very long time periods. For our purposes, we assume that the expected Cash ETR in any year is equal to the Cash ETR in the prior year, so that the change in Cash ETR represents the surprise or shock in the Cash ETR for the year.

The Cash ETR is measured each year as the firm's total cash taxes paid for the year (Compustat variable "txpd") divided by the firm's pretax book income for the year (Compustat variable "pi"). Specifically, our model of Cash ETR is:

$$Cash\ ETR_{it} = \frac{Cash\ Taxes\ Paid_{it}}{Pretax\ Income_{it}} \quad (1)$$

To compute the cash from tax savings each year, we multiply the change in the Cash ETR for the year by the firm's actual pretax earnings for the year. Note that this is not the same as the change in the cash paid for taxes for the year. For example, if a firm's pretax earnings

doubles in a year, but the Cash ETR remains unchanged (i.e., the cash paid for taxes also doubles), our measure would be zero for the year, despite the fact that the firm is paying twice as much cash for taxes as in the prior year. Specifically, our estimate of the cash tax savings for firm *i* in year *t* is:

$$Cash\ Tax\ Savings_{it} = \left[\left(Cash\ ETR_t - Cash\ ETR_{i,t-1}\right) \times Pretax\ Income_{it} \times -1\right] \quad (2)$$

where the variables are as defined above. If a firm pays a lower percentage of its pretax income in the current year compared to the previous year, then the current year *Cash ETR* minus the previous year *Cash ETR* will be negative. Thus we multiply the measure by negative one to capture the tax *savings*.

2.2 "Use of funds" model

To estimate the amount of cash saved from taxes that is used for particular purposes, we rely on the "use of funds" model developed by Kim and Weisbach (2008) and used in subsequent research such as McLean (2011) and Erel et al (2012). Kim and Weisbach develop this model to estimate how firms use the funds from initial public offerings. Their model is:

$$\begin{aligned} ln(Y_{t+1} + 1) = \beta_0 + \beta_1 \ln\left[\left(\frac{primary\ capital_t}{total\ assets_{t-1}}\right) + 1\right] \\ + \beta_2 \ln\left[\left(\frac{other\ sources_t}{total\ assets_{t-1}}\right) + 1\right] + \beta_3 ln(total\ assets_t) \\ + \sum Year\ Indicator + \sum Country\ Indicator + \epsilon \end{aligned} \quad (3)$$

where *primary capital* is the capital received in the initial public offering, and *other sources* is the net value of all other cash funds received and generated by the firm during the year. Specifically, Kim and Weisbach define o*ther sources* as the sum of funds from operations, sale

of property, plant, and equipment, long-term debt issuances, and the sale of common and preferred stock minus *primary capital*. *Y* is defined as one of several different possible uses of cash, and the equation is estimated separately for each of these uses.

We adopt this use of funds model to trace the use of cash savings from corporate taxes by replacing Kim and Weisbach's estimate of the cash received from initial public offerings with our estimate of the cash saved from taxes, generated with our random walk Cash ETR model. In calculating *other sources* we follow Kim and Weisbach, except that where they subtract primary capital, we subtract our estimate of tax savings.[3] We also replace the *Country* indicator variable in Kim and Weisbach with an indicator variable for a firm's industry, as it is possible that legally required tax payments could vary by industry.[4] We follow Kim and Weisbach and take the natural log of each variable to minimize the effect of outliers on the analysis. Specifically, we estimate the following base regression model:

$$ln(Y_{t+1}+1) = \beta_0 + \beta_1 \ln\left[\left(\frac{tax\ savings_t}{total\ assets_{t-1}}\right)+1\right] + \beta_2 \ln\left[\left(\frac{other\ sources_t}{total\ assets_{t-1}}\right)+1\right] + \beta_3 ln(total\ assets_t) + \sum Year\ Indicator + \sum Industry\ Indicator + \epsilon \quad (4)$$

In the regression model in equation (4) we estimate how cash tax savings from corporate taxes are related to possible uses of cash (the variable Y_{t+1}) such as future investments in inventory, capital expenditures, acquisitions, research and development, long-term debt reduction, receivables, advertising, dividends, share repurchases and cash balances.[5] The

[3] Because some potential uses of cash, like advertising and R&D expense, also affect operating cash flows, we add back advertising and R&D expense in computing other sources of cash. In untabulated tests we estimate our regression model without these add-backs and find results similar to those reported.
[4] We define a firm's industry as its two-digit SIC code. Our results are similar if we use the Fama-French 48 Industry Classification.
[5] All of these variables are found on the Compustat Fundamental Annual database, and detailed variable calculations can be found in Appendix A.

coefficient on β_1 measures how cash tax savings is related to changes in the respective possible uses of cash. The coefficient on β_2 measures how other sources of funds are related to changes in the respective possible uses of cash. In our analysis, we follow Kim and Weisbach and conduct a test of the hypothesis that $\beta_1 = \beta_2$ to test if the cash saved from taxes is used differently from other sources of cash.

Recent research such as Foley et al (2007) argues that the large increase in corporate cash balances is concentrated in multinational firms, and is due in large part to taxes. This line of research suggests that firms may keep the cash saved from taxes as financial assets, such as cash and equivalents. While multinational firms have large cash balances, little is known about how these firms actually use their incremental cash from tax savings. Thus we view how multinationals use the cash from tax savings as an empirical question. In an attempt to provide evidence on this question, we modify the regression model in equation (4) to allow the coefficients to differ for multinational and domestic firms. This allows us to use domestic firms as a control for multinational firms and to see if these respective types of firms use their cash tax savings differently. Specifically, we estimate the following model:

$$\begin{aligned} ln(Y_{t+1}+1) = \beta_0 &+ \beta_1 \ln\left[\left(\frac{tax\ savings_t}{total\ assets_{t-1}}\right)+1\right] * DOM \\ &+ \beta_2 \ln\left[\left(\frac{other\ sources_t}{total\ assets_{t-1}}\right)+1\right] * DOM \\ &+ \beta_3 \ln\left[\left(\frac{tax\ savings_t}{total\ assets_{t-1}}\right)+1\right] * MNE \\ &+ \beta_4 \ln\left[\left(\frac{other\ sources_t}{total\ assets_{t-1}}\right)+1\right] * MNE \\ &+ \beta_5 ln(total\ assets_t) \\ &+ \sum Year\ Indicator + \sum Industry\ Indicator + \epsilon \end{aligned} \quad (5)$$

where the variables are as defined above, *DOM* is an indicator variable equal to one if a firm is a domestic firm and zero otherwise, and *MNE* is an indicator variable equal to one if a firm is a multinational firm, and zero otherwise. We define a firm to be domestic if it reports a zero or missing-value for pretax foreign income (Compustat variable "pifo") and we define a firm to be multinational if it reports a non-zero, non-missing value for pretax foreign income. In our analysis we conduct a test of the hypothesis that $\beta_1 = \beta_2$ and that $\beta_3 = \beta_4$ to test if multinational and domestic firms differ in how they use the cash saved from taxes relative to other sources of funds.

Tax avoidance can be obtained via strategies that either defer income tax for some period of time (deferral strategies), or strategies that avoid the tax permanently (permanent strategies). It is important to understand the differential uses of these funds as recent evidence suggests that managers are incentivized to engage in permanent tax strategies rather than deferred tax strategies. These incentives occur through tax director compensation (Armstrong et al. 2010) as well as the view of the tax department as a financial reporting or profit center (Robinson et al. 2010). The apparent focus of firms on reducing their GAAP but not their Cash ETR represents something of a puzzle.[6] However, if firms are able to use permanent tax savings but not deferred tax savings to increase capital investment and realize growth opportunities, the focus on permanent strategies may in fact be value maximizing.

We take advantage of the fact that a firm's GAAP ETR is affected by permanent, but not temporary differences to measure permanent tax avoidance. We measure the firm's cash savings generated from permanent tax avoidance as:

[6] In this study GAAP ETR is defined as tax expense scaled by pretax income (txt/pi), while Cash ETR is defined as cash taxes paid scaled by pretax income (txpd/pi)

$$Permanent\ Tax\ Savings_{it} =$$

$$\left(GAAP\ ETR_t - GAAP\ ETR_{i,t-1}\right) \times Pretax\ Income_{it} \times -1 \quad (6)$$

Cash ETR on the other hand, can be affected by both permanent and temporary differences. To determine the tax savings generated by tax deferral, we subtract the change in GAAP ETR (which is affected only by permanent differences) from the change in Cash ETR (which is affected by both temporary and permanent differences). Specifically, we measure the firm's cash savings generated from tax deferral as:

$$Tax\ Savings\ From\ Deferral_{it} =$$

$$\left(\left[CASH\ ETR_t - CASH\ ETR_{i,t-1}\right] - \left[GAAP\ ETR_t - GAAP\ ETR_{i,t-1}\right]\right)$$

$$\times\ Pretax\ Income_{it} \times -1 \quad (7)$$

To provide evidence whether firms use the tax savings created by permanent and temporary book-tax differences differently, we modify the regression model in equation (4) to separate the tax savings from these two strategies. This allows us to examine separately and compare the use of funds from temporary and permanent tax strategies with each other, as well as the use of funds from other sources. Specifically, we estimate the following model:

$$\begin{aligned} ln(Y_{t+1} + 1) = \beta_0 &+ \beta_1 \ln\left[\left(\frac{tax\ savings\ from\ deferral_t}{total\ assets_{t-1}}\right) + 1\right] \\ &+ \beta_2 \ln\left[\left(\frac{permanent\ tax\ savings_t}{total\ assets_{t-1}}\right) + 1\right] \\ &+ \beta_3 \ln\left[\left(\frac{other\ sources_t}{total\ assets_{t-1}}\right) + 1\right] + \beta_4 ln(total\ assets_t) \\ &+ \sum Year\ Indicator + \sum Industry\ Indicator + \epsilon \end{aligned} \quad (8)$$

where the tax savings from deferral and permanent tax savings are as defined above. In our analysis we test the hypotheses that $\beta_1 = \beta_3$ and that $\beta_2 = \beta_3$ to test if, relative to other sources of funds, firms use the tax savings from permanent and temporary tax strategies differently.

2.3 Sample Selection

Our sample construction begins with all observations on the Compustat Annual Database from 1987 to 2013 with the data necessary to compute our regression variables. We choose 1987 as the starting year as this is the first year that many of the data items necessary to compute our variables of interest, such as cash taxes paid, are available on Compustat. We require firms to have non-missing data for assets, cash and equivalents, pretax income, cash taxes paid, and cash flows from operating activities. Finally, we also require firms to have positive pretax income and positive cash tax savings, as firms with negative pretax income are not required to pay the corporate income tax and also may lack the funds to invest, and we are interested in how firms use the cash from tax savings. We view the question of how firms change their investments when they need to pay additional cash taxes as a separate research question.

We follow Kim and Weisbach (2008) in estimating separate regressions for each possible use of cash, and thus we allow our sample size to vary based on the left-hand variable of interest (Y_{t+1}). For example many firms do not have research and development expenditures, and other firms do not specifically disclose their advertising expense, which makes it difficult to determine the firm's expenditures for these specific items. Thus in our equations estimating the impact of tax savings on research and development, our regression only includes those firms that have research and development expenditures without regard to potentially missing advertising or other data. Similarly, in our regressions estimating the impact of tax savings on investments in inventory our regression includes only those firms that report inventory without regard to potentially missing research and development or other data.

3. Results

3.1 Sample Selection, Descriptive Statistics and Univariate Results

Table 1 presents a description of our sample. Panel A presents a detailed analysis of the number of firms in the sample in each year, and the percent of the total sample represented by the firms in that particular year. Although we start our sample in 1987, since we require previous year assets in our calculations the first year a firm-year observation is available is 1988. Similarly, although our sample selection is inclusive of those firms that have reported in 2013, since we require future year investments the latest year available in our sample is 2012. The number of firms in the sample stays fairly stable over the time period. However, as there are some changes in the number of observations each year, and because tax laws change over time we include year indicator variables in our regression analysis.

Table 1 Panel B reports a detailed analysis of the number of firms in each industry in our sample. The relative percentages of firms each respective industry that comprise our industry is very similar to that of the entire Compustat database over the time period of the study. Similar to the Compustat database as a whole, certain industries such as Machinery and Business Equipment comprise a fairly large part of the sample relative to other industries.[7] Due to the relative size differences in industries, and also to the fact that regulations and the general business environment provide different industries with different investment opportunities as well as opportunities to save on corporate income tax, we include industry indicator variables in our analysis.

[7] Financial firms compose a substantial 15% of our sample, compared to 18% of the Compustat database. Our results are similar if we exclude these firms from our analysis.

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Insert Table 1
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Table 2 presents descriptive statistics for our sample. All numbers are reported in millions of U.S. dollars, and are not scaled. The median firm in our sample is large, at approximately 538 million dollars in assets. There is considerable variation in the size of firms, as firms in the 75th percentile of assets have assets of approximately 2,435 million dollars, about 19 times larger than firms in the 25th percentile of assets of 127 million dollars.

The average cash tax savings for firms in our sample is approximately 80 million dollars (recall that we require tax savings to be positive for our sample observations). This is 10% of the average level of cash and equivalents held by firms of approximately 800 million dollars. These relative levels are similar for the median firm, as the median firm reports holds approximately 28 million dollars in cash and equivalents and has a cash tax savings of over 3 million dollars. Taken together, this evidence suggests that the cash savings from taxes represent a substantial and economically significant source of funds for firms in our sample.

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Recent research in finance argues that corporate cash reserves have increased dramatically in recent years. This rise is particularly pronounced for multinational corporations, and Foley et al (2007) argue that tax repatriation costs for U.S. multinationals play a substantial role in this increase. In Table 3, we test whether the level of gross and size-deflated cash differs between domestic and multinational corporations. Consistent with prior research, multinational corporations in our sample have both higher gross and relative levels of cash than domestic firms. We find that the mean (median) domestic firm has a cash and equivalent balance of

approximately 513 (12) million dollars, while the mean (median) multinational firm has a cash and equivalent balance of approximately 1,128 (66) million dollars. A test of the hypothesis that these values are equivalent is rejected at the 1% level for both means and medians. We interpret these results as evidence that multinational firms hold more cash than domestic firms.

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3.2 Regression Results

Table 4 presents our results in estimating equation (4), tracing the use of cash tax savings. Each line represents a separate regression with the respective variable estimated as *Y*. The coefficient on β_1 indicates how cash tax savings is related to changes in the one year ahead *Y* variable, while the coefficient on β_2 indicates how other, non-tax related sources of funds are related to the *Y* variable (Kim and Weisbach 2008). The column titled *P-Value* is for a test of the hypothesis that the coefficient β_1 is equivalent to the coefficient β_2. Bold numbers represent instances where the hypothesis is rejected at the 10% level, using two-tailed tests.

We do not find significant differences in how firms use the funds from tax savings and other sources of cash when it comes to research and development, long-term debt reduction, advertising, dividends, or share repurchases. However, we find evidence that relative to other sources of funds, cash tax savings is related to significantly higher levels of inventory, capital expenditures and acquisitions. Specifically we find that one dollar of cash tax savings (other sources of funds) is associated with a $0.043 ($0.006) increase in inventory, a $0.080 ($0.058) increase in capital expenditures, and a $0.180 ($0.142) increase in acquisitions. These results suggest that firms invest their cash tax savings in real investments.

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3.2.1 Uses of Cash Tax Savings in Domestic and Multinational Firms

Recent research has argued that multinational corporations keep their cash tax savings in financial assets and that this has played a significant part in the increase in corporate cash balances. However, evidence on how multinational firms use their cash tax savings is limited. Thus, we view this as an empirical question, and conduct tests to provide evidence if domestic and multinational firms differ in how they use cash tax savings. Table 5 presents the results of estimating equation (5), which allows us to test if multinational and domestic firms differ in how they use cash tax savings.

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Overall, we interpret the evidence in Table 5 as suggesting that, relative to domestic firms, multinational firms are *more* likely to use their cash savings from taxes (relative to other sources of funds) for real investment. Specifically, we find that relative to domestic firms, multinational firms invest more of their cash savings from taxes relative to other sources of funds on capital expenditures, acquisitions, and advertising. These results contrast to domestic firms, which do not exhibit significant differences in the use of tax savings versus other sources of funds in these categories. In fact, the only category of real investment in which domestic firms use significantly more of the cash savings from taxes relative to other sources of funds than multinationals is inventory. However even in this category, multinational firms invest more of the cash tax savings in inventory than other sources of funds.

3.2.2 Permanent vs. Temporary Tax Saving Strategies

Our next set of tests provides evidence on whether firms use the tax savings from permanent and temporary tax strategies differently. Table 6 presents the results of estimating equation (8) on a subsample of multinational firms that have tax savings from both permanent and deferred tax strategies, and we conduct a test of the hypotheses that $\beta_1 = \beta_3$ and $\beta_2 = \beta_3$ to test if firms use the tax savings from permanent and deferred tax strategies differently relative to other sources of funds.

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Insert Table 6
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Overall, we interpret the evidence in Table 6 as suggestive that relative to deferral strategies, multinational firms are more likely to use their cash savings from permanent strategies for real investment. Specifically, we find that relative to other sources of funds, firms invest significantly more of their tax savings from permanent avoidance strategies in capital expenditures and inventory. We find that a dollar of tax savings from permanent strategies is associated with a $0.067 increase in inventory, and $0.106 increase in capital expenditures while a dollar of funds from other sources is associated with a $0.015 increase in inventory and a $0.052 increase in capital expenditures. In contrast we do not find a significant difference in how firms invest their funds from tax deferral strategies when compared to other uses of funds. Perhaps surprisingly, we find that firms invest significantly more of the funds from deferral strategies on acquisitions when compared to other sources of funds, and we do not find a significant difference for the tax savings from permanent strategies.[8]

[8] It is possible that deferred tax expense related to the acquisition could be impacting this result.

Taken together, the evidence in our paper suggests that while multinational firms do have larger cash balances than domestic firms, multinational firms are *more* likely to use their cash tax savings for real investment. These results are consistent with investment opportunities affecting tax avoidance (or vice-versa), and are inconsistent with suggestions that multinational firms are investing their cash tax savings in foreign financial assets. Our tests also suggest that relative to the tax savings generated from deferral, firms invest more of the tax savings from permanent strategies. This finding suggests that firms may compensate managers based on GAAP ETR (Armstrong et al 2012) because the cash generated from permanent tax strategies is more readily invested to take advantage of growth opportunities.

4. Conclusion

A fundamental question in public finance economics is how the corporate income tax affects investment. In this study we provide evidence related to this question using a novel approach which allows us to trace how firms use the cash generated from saving corporate taxes. We measure tax savings as the unexpected change in cash taxes paid, and we apply a "use of funds" model to determine how cash tax savings are used.

Our results demonstrate that, while some of the cash is saved, a substantial amount is used for real investments in the form of capital expenditures or acquisitions. Our evidence suggests that, relative to other sources of cash, firms are more likely to use cash saved from taxes on real investment, suggesting that investment opportunities may be related to corporate tax avoidance. Additional tests provide evidence that this effect is concentrated in multinational, rather than domestic firms. This is inconsistent with arguments that multinational firms keep their tax savings in foreign financial assets.

Our tests also suggest that relative to the tax savings generated from deferral, firms invest more of the tax savings from permanent strategies. This finding suggests that firms may compensate managers based on GAAP ETR (Armstrong et al 2012) because the cash generated from permanent tax strategies is more readily invested to take advantage of growth opportunities through increasing capacity and acquiring other firms.

Our results make an important contribution to our understanding of the relation between corporate income taxes and investment. While paying corporate income taxes is important from a social welfare perspective, our results suggest that a substantial portion of taxes saved is invested in real investments, which may provide offsetting social welfare benefits. Our results should also be of interest to those engaged in the public policy debate over the role and effect of corporate income taxes, especially as it relates to U.S. multinationals.

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APPENDIX A - Variable Definitions

Cash Tax Savings	= [(Cash ETR_t - Cash ETR_{t-1}) * Pretax Income * -1]. Cash ETR = taxes paid (txpd) divided by pretax income (pi).
Other Sources of Cash	= Total sources of cash – Tax Savings. Where Total Sources of Cash = Cash flow from operations (oancf)+ cash from selling ppe (sppet) + cash from debt issuance (dltist) + cash from sale of stock (sstkt) + R&D expense (xrd) + Advertising Expense (xad).
Δ TA	= current year total assets (at) minus previous year total assets divided by previous year total assets
Δ Inventory	= change in inventory from the cash flow statement (invch) times negative 1 divided by previous year total assets
Δ CAPEX	= capital expenditures (capx) minus previous year capital expenditures divided by previous year total assets.
Δ Acquisition	= current year acquisitions (aqc) minus previous year acquisitions, divided by previous year total assets
Δ R&D	= research and development expense (xrd) minus previous year research and development expense, divided by previous year total assets.
Δ Cash	= cash and equivalents (che) minus previous cash and equivalents, divided by previous year total assets.
Δ LT Debt Reduction	= reduction in long term debt (dltr) minus previous year reduction in long term debt, divided by lagged total assets.
Δ Receivables	= current year receivables (rect) minus previous year receivables, divided by previous year assets.
Δ Advertising	= current year advertising expense (xad) minus previous year advertising expense, divided by previous year total assets.
Δ Dividends	= current year dividends (dv) minus previous year dividends divided by previous year total assets
Δ Share Repurchase	= Purchase of common and preferred stock (prstkc) minus previous year purchase of common and preferred stock (prstkc) divided by previous year assets.

Table 1: Sample Description

Panel A: Number of Firms by Year

Year	Number of Firms	% of Sample
1988	145	0.41%
1989	1,034	2.92%
1990	1,256	3.55%
1991	1,195	3.38%
1992	1,392	3.93%
1993	1,438	4.06%
1994	1,490	4.21%
1995	1,703	4.81%
1996	1,706	4.82%
1997	1,808	5.11%
1998	1,712	4.84%
1999	1,659	4.69%
2000	1,576	4.45%
2001	1,379	3.90%
2002	1,519	4.29%
2003	1,504	4.25%
2004	1,525	4.31%
2005	1,719	4.86%
2006	1,760	4.97%
2007	1,698	4.80%
2008	1,360	3.84%
2009	1,420	4.01%
2010	1,523	4.30%
2011	1,676	4.74%
2012	191	0.54%
Totals	**35,388**	**100%**

Table 1: Sample Description (Continued)

Panel B: Number of Firms by Fama-French 17 Industry Classification

Fama-French Industry	Number of Firms	Percent of Sample	Percent of Compustat Database
Food	1,282	3.62%	2.66%
Mining and Minerals	447	1.26%	3.87%
Oil and Petroleum	1,425	4.03%	5.27%
Textiles and Apparel	739	2.09%	1.45%
Consumer Durables	928	2.62%	2.31%
Chemicals	708	2.00%	1.62%
Drugs, Soaps, Perfume, Tobacco	944	2.67%	3.26%
Construction	1,321	3.73%	2.89%
Steel Works	476	1.35%	1.25%
Fabricated Products	315	0.89%	0.68%
Machinery and Business Equipment	4,098	11.58%	10.57%
Automobiles	538	1.52%	1.24%
Transportation	1,394	3.94%	3.12%
Utilities	3,166	8.95%	3.48%
Retail Stores	2,252	6.36%	4.88%
Financials	5,335	15.08%	18.08%
Other	10,020	28.31%	33.38%
Totals	**35,388**	**100%**	**100%**

Table 2: Descriptive Statistics

Variable	N	Mean	Standard Dev.	25th Percentile	50th Percentile	75th Percentile
Total Assets	35,388	7,860.61	59,763.90	127.00	538.24	2,435.24
Inventory	34,789	598.73	7,668.15	1.44	22.505	123.61
CAPEX	35,002	241.74	1,192.98	2.98	16.9	95.12
Acquisition	34,000	66.38	634.10	0.00	0.00	71.19
R&D	15,207	125.45	577.52	0.08	5.05	31.20
Cash	35,388	800.67	9,512.55	5.03	28.20	132.00
LT Debt Reduction	34,460	401.53	3,653.51	0.20	8.00	97.42
Receivables	35,160	2,277.91	24,414.68	15.95	71.18	318.88
Advertising	10,722	107.59	413.60	0.95	5.90	38.90
Dividends	35,106	81.33	396.61	0.00	1.26	24.90
Share Repurchases	33,749	81.73	716.16	0.00	0.00	5.95
Cash Tax Savings	35,388	80.43	1,560.74	0.65	3.44	18.08

Numbers are in millions of U.S. Dollars. TA = current year total assets (at). Inventory = inventory from the balance sheet (invt). CAPEX = capital expenditures (capx). Acquisition = current year acquisitions (aqc). R&D = research and development expense (xrd). Cash = cash and equivalents (che). LT Debt reduction = reduction in long term debt (dltr). Receivables = current year receivables (rect). Advertising = current year advertising expense (xad). Dividends = current year dividends (dv). Share Repurchases = Purchase of common and preferred stock (prstkc). Tax Savings = [(Cash ETR_t - Cash ETR_{t-1}) * Pretax Income * -1]. Cash ETR = taxes paid (txpd) divided by pretax income (pi).

Table 3: Corporate Cash Balances

	Domestic Corporations		Multinational Corporations		P Value for Domestic = Multinational	
	Mean	**Median**	**Mean**	**Median**	**Means**	**Medians**
Cash	513.37	12.38	1127.93	66.41	0.000	0.000
Cash / Previous Year Assets	0.162	0.054	0.190	0.100	0.000	0.000

All numbers are in millions (USD). A firm is classified as multinational corporation if it reports a non-zero, non-missing number for pretax foreign income (Compustat variable pifo). A firm is classified as a Domestic if it reports a zero, or missing value for pretax foreign income (pifo). Previous Year Assets is defined as total assets in year t-1 (Compustat variable at measured in year t-1). Cash is defined as cash and equivalents (Compustat variable che).

Table 4: Use of Cash Tax Savings vs. Other Sources of Funds

$$\ln(Y_{t+1} + 1) = \beta_0 + \beta_1 \ln\left[\left(\frac{tax\ savings\ t}{totalassets\ t-1}\right) + 1\right] + \beta_2 \ln\left[\left(\frac{other\ sources\ t}{totalassets\ t-1}\right) + 1\right] + \beta_3 \ln(total\ assets\ t) + \Sigma Year + \Sigma Industry + \epsilon$$

Y	N	$\ln\left[\frac{tax\ savings\ t}{totalassets\ t-1} + 1\right]$		$\ln\left[\frac{other\ sources\ t}{totalassets\ t-1} + 1\right]$		P-Value	R^2
		β_1	*t*-stat	β_2	*t*-stat	$\beta_1 = \beta_2$	
Δ TA	33,060	**1.001**	**21.92**	**0.544**	**38.17**	**0.00**	**0.35**
Δ Inventory	29,647	**0.043**	**4.39**	**0.006**	**1.22**	**0.00**	**0.09**
Δ CAPEX	32,627	**0.080**	**7.83**	**0.058**	**18.32**	**0.03**	**0.09**
Δ Acquisition	31,105	**0.180**	**8.21**	**0.142**	**17.32**	**0.05**	**0.09**
Δ R&D	14,236	0.033	3.55	0.032	13.02	0.87	0.14
Δ Cash	33,061	**0.566**	**15.51**	**0.235**	**20.80**	**0.00**	**0.21**
Δ LT Debt Reduction	31,585	0.298	8.00	0.257	17.77	0.24	0.11
Δ Receivables	32,812	**0.216**	**7.42**	**0.079**	**12.12**	**0.00**	**0.12**
Δ Advertising	9,644	0.044	3.82	0.029	6.19	0.11	0.10
Δ Dividends	32,654	0.001	0.08	0.011	3.30	0.47	0.01
Δ Share Repurchase	30,862	0.016	0.71	0.013	2.39	0.89	0.01

P-values are calculated using two-tailed tests and reflect robust standard errors. Bold numbers represent coefficients that are significant at the <=10% level (two-tailed tests). Δ TA = current year total assets (at) minus previous year total assets divided by previous year total assets. Δ Inventory = change in inventory from the cash flow statement (invch) times negative 1 divided by previous year total assets. Δ CAPEX = capital expenditures (capx) minus previous year capital expenditures divided by previous year total assets. Δ Acquisition = current year acquisitions (aqc) minus previous year acquisitions, divided by previous year total assets. ΔR&D = research and development expense (xrd) minus previous year research and development expense, divided by previous year total assets. Δ Cash = cash and equivalents (che) minus previous year cash and equivalents (che) divided by previous year total assets. Δ LT Debt reduction = reduction in long term debt (dltr) minus previous year reduction in long term debt, divided by lagged total assets. Δ Receivables = current year receivables (rect) minus previous year receivables, divided by previous year assets. Δ Advertising = current year advertising expense (xad) minus previous year advertising expense, divided by previous year total assets. Δ Dividends = current year dividends (dv) minus previous year dividends divided by previous year total assets. Δ Share Repurchase = Purchase of common and preferred stock (prstkc) minus previous year purchase of common and preferred stock (prstkc) divided by previous year assets. Tax Savings = [(Cash ETR_t - Cash ETR_{t-1}) * Pretax Income * -1]. Cash ETR = taxes paid (txpd) divided by pretax income (pi). Total Sources of Cash = Cash flow from operations (oancf)+ cash from selling ppe (sppet) + cash from debt issuance (dltist) + cash from sale of stock (sstkt) + R&D expense (xrd) + Advertising Expense (xad). Other Sources of Cash= Total sources of cash – Tax Savings

Table 5: Use of Tax Savings vs. Other Sources of funds in Domestic vs. Multinational Firms

$$\ln(Y_{t+1} + 1) = \beta_0 + \beta_1 \ln\left[\left(\frac{tax\ savings\ t}{totalassets\ t-1}\right) + 1\right] * DOM + \beta_2 \ln\left[\left(\frac{other\ sources\ t}{totalassets\ t-1}\right) + 1\right] * DOM + \beta_3 \ln\left[\left(\frac{tax\ savings\ t}{totalassets\ t-1}\right) + 1\right] * MNE$$

$$+ \beta_4 \ln\left[\left(\frac{other\ sources\ t}{totalassets\ t-1}\right) + 1\right] * MNE + \beta_5 \ln(total\ assets\ t) + \Sigma Year + \Sigma Industry + \epsilon$$

Y	N	$\ln\left[\frac{tax\ savings\ t}{totalassets\ t-1}+1\right] * DOM$		$\ln\left[\frac{other\ sources\ t}{totalassets\ t-1}+1\right] * DOM$		P-Value	$\ln\left[\frac{tax\ savings\ t}{totalassets\ t-1}+1\right] * MNE$		$\ln\left[\frac{other\ sources\ t}{totalassets\ t-1}+1\right] * MNE$		P-Value
		β_1	*t*-stat	β_2	*t*-stat	$\beta_1 = \beta_2$	β_3	*t*-stat	β_4	*t*-stat	$\beta_3 = \beta_4$
Δ Inventory	29,647	**0.055**	**4.90**	**0.005**	**0.92**	**0.00**	0.025	1.76	0.007	2.09	0.14
Δ CAPEX	32,627	0.071	5.24	0.062	16.71	0.49	**0.087**	**7.76**	**0.048**	**15.37**	**0.00**
Δ Acquisition	31,105	0.163	6.24	0.141	15.54	0.37	**0.214**	**6.62**	**0.146**	**15.15**	**0.02**
Δ R&D	14,236	0.025	1.69	0.033	11.41	0.60	0.042	5.03	0.031	12.03	0.19
Δ Cash	33,061	**0.619**	**13.03**	**0.233**	**19.48**	**0.00**	**0.480**	**13.33**	**0.241**	**15.38**	**0.00**
Δ LT Debt Reduction	31,585	0.275	5.72	0.264	16.32	0.82	**0.325**	**7.29**	**0.237**	**15.27**	**0.05**
Δ Receivables	32,812	**0.232**	**5.72**	**0.078**	**10.83**	**0.00**	**0.132**	**9.39**	**0.083**	**12.58**	**0.00**
Δ Advertising	9,644	0.051	2.81	0.033	5.84	0.28	**0.032**	**4.56**	**0.021**	**6.58**	**0.04**
Δ Dividends	32,654	0.001	0.04	0.012	3.20	0.57	0.000	-0.03	0.007	2.65	0.30
Δ Share Repurchase	30,862	0.032	1.23	0.013	2.07	0.38	-0.016	-0.43	0.014	2.81	0.31

P-values are calculated using two-tailed tests and reflect robust standard errors. Bold numbers represent coefficients that are significant at the <=10% level (two-tailed tests). MNE = Multinational Corporation which is equal to one if a firm reports a non-zero, non-missing number for pretax foreign income (pifo) and zero else. Dom = Domestic Corporation which is equal to one if a firm reports a zero, or missing value for pretax foreign income (pifo) and zero else. Δ TA = current year total assets (at) minus previous year total assets divided by previous year total assets. Δ Inventory = change in inventory from the cash flow statement (invch) times negative 1 divided by previous year total assets. Δ CAPEX = capital expenditures (capx) minus previous year capital expenditures divided by previous year total assets. Δ Acquisition = current year acquisitions (aqc) minus previous year acquisitions, divided by previous year total assets. ΔR&D = research and development expense (xrd) minus previous year research and development expense, divided by previous year total assets. Δ Cash = cash and equivalents (che) minus previous year cash and equivalents (che) divided by previous year total assets. Δ LT Debt reduction = reduction in long term debt (dltr) minus previous year reduction in long term debt, divided by lagged total assets. Δ Receivables = current year receivables (rect) minus previous year receivables, divided by previous year assets. Δ Advertising = current year advertising expense (xad) minus previous year advertising expense, divided by previous year total assets. Δ Dividends = current year dividends (dv) minus previous year dividends divided by previous year total assets. Δ Share Repurchase = Purchase of common and preferred stock (prstkc) minus previous year purchase of common and preferred stock (prstkc) divided by previous year assets. Tax Savings = [(Cash ETR_t - Cash ETR_{t-1}) * Pretax Income * -1]. Cash ETR = taxes paid (txpd) divided by pretax income (pi). Total Sources of Cash = Cash flow from operations (oancf)+ cash from selling ppe (sppet) + cash from debt issuance (dltist) + cash from sale of stock (sstkt) + R&D expense (xrd) + Advertising Expense (xad). Other Sources of Cash= Total sources of cash – Tax Savings

Table 6: Permanent vs. Deferral Strategies

$$ln(Y_{t+1}+1) = \beta_0 + \beta_1 \ln\left[\left(\frac{tax\ savings\ from\ deferral_t}{total\ assets_{t-1}}\right)+1\right] + \beta_2 \ln\left[\left(\frac{permanent\ tax\ savings_t}{total\ assets_{t-1}}\right)+1\right]$$
$$+\beta_3 \ln\left[\left(\frac{other\ sources_t}{total\ assets_{t-1}}\right)+1\right] + \beta_4 ln(total\ assets_t) + \sum Year\ Indicator + \sum Industry\ Indicator + \epsilon$$

Y	N	$\ln\left[\frac{tax\ savings\ from\ deferral\ t}{totalassets\ t-1}+1\right]$		$\ln\left[\frac{Permanent\ tax\ savings\ t}{totalassets\ t-1}+1\right]$		$\ln\left[\frac{other\ sources\ t}{totalassets\ t-1}+1\right]$		P-Value	P-Value
		β_1	*t*-stat	β_2	*t*-stat	β_3	*t*-stat	$\beta_1 = \beta_3$	$\beta_2 = \beta_3$
Δ Inventory	4,055	-0.002	-0.01	**0.067**	**2.23**	0.015	2.23	0.29	**0.07**
Δ CAPEX	4,336	0.068	3.29	**0.106**	**3.54**	0.052	6.11	0.33	**0.06**
Δ Acquisition	3,990	**0.357**	**4.85**	0.114	1.74	0.172	6.65	**0.00**	0.36
Δ R&D	2,809	0.040	2.44	0.048	2.60	0.034	6.15	0.71	0.42
Δ Cash	4,375	**0.466**	**5.18**	**0.571**	**5.55**	0.254	6.74	**0.00**	**0.00**
Δ LT Debt Reduction	4,181	0.168	2.08	0.324	3.56	0.194	8.74	0.73	0.16
Δ Receivables	4,356	**0.136**	**4.20**	**0.174**	**3.63**	0.079	7.98	**0.04**	**0.04**
Δ Advertising	1,543	0.012	0.75	0.050	3.30	0.027	2.93	0.11	0.11
Δ Dividends	4,318	-0.015	-1.14	0.014	1.39	0.001	0.51	0.19	0.18
Δ Share Repurchase	4,089	-0.003	-0.06	-0.115	-0.62	0.003	0.43	0.88	0.51

P-values are calculated using two-tailed tests and reflect robust standard errors. Bold numbers represent coefficients that are significant at the <=10% level (two-tailed tests). This regression is estimated on the subsample of MNEs with positive values for tax savings from deferral and permanent tax savings. MNE = Multinational Corporation which is equal to one if a firm reports a non-zero, non-missing number for pretax foreign income (pifo) and zero else. Δ TA = current year total assets (at) minus previous year total assets divided by previous year total assets. Δ Inventory = change in inventory from the cash flow statement (invch) times negative 1 divided by previous year total assets. Δ CAPEX = capital expenditures (capx) minus previous year capital expenditures divided by previous year total assets. Δ Acquisition = current year acquisitions (aqc) minus previous year acquisitions, divided by previous year total assets. ΔR&D = research and development expense (xrd) minus previous year research and development expense, divided by previous year total assets. Δ Cash = cash and equivalents (che) minus previous year cash and equivalents (che) divided by previous year total assets. Δ LT Debt reduction = reduction in long term debt (dltr) minus previous year reduction in long term debt, divided by lagged total assets. Δ Receivables = current year receivables (rect) minus previous year receivables, divided by previous year assets. Δ Advertising = current year advertising expense (xad) minus previous year advertising expense, divided by previous year total assets. Δ Dividends = current year dividends (dv) minus previous year dividends divided by previous year total assets. Δ Share Repurchase = Purchase of common and preferred stock (prstkc) minus previous year purchase of common and preferred stock (prstkc) divided by previous year assets. Tax Savings = [(Cash ETR_t - Cash ETR_{t-1}) * Pretax Income * -1]. Cash ETR = taxes paid (txpd) divided by pretax income (pi). Total Sources of Cash = Cash flow from operations (oancf)+ cash from selling ppe (sppet) + cash from debt issuance (dltist) + cash from sale of stock (sstkt) + R&D expense (xrd) + Advertising expense (xad). Other Sources of Cash= Total sources of cash – Tax Savings from operations (oancf)+ cash from selling ppe (sppet) + cash from debt issuance (dltist) + cash from sale of stock (sstkt) + R&D expense (xrd) + Advertising Expense (xad). Other Sources of Cash= Total sources of cash – Tax Savings

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EDUCATION

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TEACHING INTERESTS

Financial Accounting; Financial Statement Analysis; Taxation.

RESEARCH INTERESTS

Economics-based research on the effects of income taxes on financing, investing, and financial reporting decisions. Economic effects of international accounting differences.

PUBLICATIONS—REFEREED ACADEMIC JOURNALS

Guenther, D. and R. Sansing. 2012. "Unintended Consequences of LIFO Repeal: The Case of the Oil Industry." *The Accounting Review* (In press).

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PUBLICATIONS—INVITED DISCUSSIONS

Guenther, D. 2009. "Discussion of 'Bilateral Implicit Taxes and Anti-Competitive Banking Regulation.'" *Journal of the American Taxation Association* (Fall).

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Trombley, M. and D. Guenther. 1995. "Should Earnings and Book Values be Adjusted for LIFO?" *Journal of Financial Statement Analysis* (Fall).

PUBLICATIONS—TEXTBOOKS

Guenther, D. 2005. *Financial Reporting and Analysis*, *First Edition*, McGraw-Hill/Irwin.

VISITING FACULTY POSITIONS

Visiting Scholar, Said Business School, University of Oxford, Fall, 2011.

Visiting Professor, Chinese University of Hong Kong, January 2010.

Visiting Professor, Hong Kong University of Science & Technology, August, 2008.

Visiting Professor, Massachusetts Institute of Technology, Fall semester, 2001.

Instructor for advanced course in tax accounting research for Dutch Ph.D. students, Maastricht University, the Netherlands, October, 2000.

Visiting Scholar, Chinese University of Hong Kong, Summer 2000.

Visiting Professor, University of Maastricht, Fall, 1996.

PRESENTATIONS

University of California at Davis, Accounting and Finance Workshop, Paper Presentation, April, 2011.

North Carolina Tax Symposium, Paper Presentation, January, 2011.

University of Texas at Austin, Accounting Workshop, Paper Presentation, November, 2010.

Michigan State University, Accounting Workshop, Paper Presentation, October, 2008.

Hong Kong University of Science and Technology, Accounting Workshop, Paper Presentation, August, 2008.

University of Kansas, Accounting Workshop, Paper Presentation, October, 2007.

American Accounting Association annual meeting, Washington D.C., paper presentation, August, 2006.

Tuck School at Dartmouth, Economics Finance and Accounting Workshop, Paper Presentation, November, 2004.

University of Oregon, Accounting Workshop, Paper Presentation, October 2004.

University of Arizona, Accounting Workshop, Paper Presentation, October, 2003.

North Carolina Tax Symposium, Paper Presentation, March, 2003.

University of Oklahoma, Accounting Workshop, Paper Presentation, September, 2002.

American Taxation Association annual meeting, Paper Discussion, February, 2002.

University of Texas at Austin, Accounting Workshop, Paper Presentation, October, 2001.

Massachusetts Institute of Technology, Accounting Workshop, Paper Presentation, October, 2001.

University of Missouri, Accounting Workshop, Paper Presentation, April, 2001.

University of Washington, Accounting Workshop, Paper Presentation, January, 2001.

Northwestern University, Accounting Workshop, Paper Presentation, November, 2000.

University of Chicago, Accounting Workshop, Paper Presentation, October, 2000.

University of North Carolina at Chapel Hill, Accounting Workshop, Paper Presentation, October, 2000.

American Accounting Association Doctoral Consortium, Presenter, June, 2000.

Chinese University of Hong Kong, Accounting Workshop, Paper Presentation, May, 2000.

North Carolina Tax Symposium, Discussant, March, 2000.

Illinois Tax Conference, Discussant, October, 1999.

American Taxation Association Mid-Year Meeting, Panel Presentation, March, 1999.

Columbia University, Accounting Workshop, Paper Presentation, October, 1998.

North Carolina Tax Symposium, Paper Presentation, May, 1998.

Waterloo University, Accounting Workshop, Paper Presentation, April, 1998.

Georgia State University, Accounting Workshop, Paper Presentation, March, 1998.

University of Colorado at Boulder, Accounting Workshop, Paper Presentation, January, 1998.

University of Oregon, Accounting Workshop, Paper Presentation, January, 1998.

University of Arizona, Accounting Workshop, Paper Presentation, December, 1997.

Arizona State University, Accounting Workshop, Paper Presentation, October, 1997.

American Accounting Association Annual Meeting, Dallas TX, Discussant for three papers, August, 1997.

Boston Accounting Research Colloquium, Paper Presentation, March, 1997.

Journal of the American Taxation Association Conference, Discussant, February, 1997.

University of North Carolina at Chapel Hill, Accounting Workshop, Paper Presentation, January, 1997.

University of Maastricht, METEOR Conference, Paper Presentation, October, 1996.

Pennsylvania State University, Accounting Workshop, Paper Presentation, September, 1995.

American Accounting Association Annual Meeting, Orlando FL, Paper Presentation, August, 1995.

University of Iowa, Accounting Workshop, Paper Presentation, March, 1995.

European Accounting Association Annual Meeting, Venice, Italy, Paper Presentation, April, 1994.

University of Rochester, Accounting Workshop, Paper Presentation, February, 1994.

University of Texas at Austin, Accounting Workshop, Paper Presentation, September, 1993.

University of Maastricht, The Netherlands, Accounting Workshop, Paper Presentation, May, 1993.

European Accounting Association Annual Meeting, Turku, Finland, Paper Presentation, April, 1993.

Northeast Regional Meeting, American Accounting Association, Panel Member, Effective Teaching Methods for Financial Accounting, April, 1993.

American Accounting Association Annual Meeting, Washington D.C., Paper Presentation, August, 1992.

Northeast Regional Meeting, American Accounting Association, Discussant, 1991.

Southeast Regional Meeting, American Accounting Association, Paper Presentation, 1991.

Midwest Finance Association Annual Meeting, Paper Presentation, 1991.

Western Regional Meeting, American Accounting Association, Paper Presentation, 1991.

INVITED CONFERENCE ATTENDANCE

Michigan/Berkeley conference on taxing corporate earnings, May, 2005.

The Accounting Review conference on the quality of earnings, March, 2002.

Journal of Accounting and Economics Conference, June, 2001, October, 2003, October, 2007, October, 2008, October, 2010.

Deloitte & Touche "Enhancing the Learning Experience Seminar", August, 2001.

Distinguished Visiting Faculty, American Accounting Association Doctoral Consortium, Summer 2000

North Carolina Tax Symposium, 1998, 1999, 2000, 2003, 2004, 2006, 2007, 2009, 2011.

Deloitte & Touche "Enhancing the Learning Experience Seminar", August, 1997.

Michigan Tax Policy Conference, 1994, 1995, 1996, 1997.

Stanford University Summer Tax Course, 1994.

Illinois Tax Conference, 1993, 1995, 1997, 1999, 2005.

AWARDS

Lundquist College of Business Research Excellence Award 2011 for the article "The Effect of Tax-Exempt Investors and Risk on Stock Ownership and Expected Returns."

University of Oregon Research Innovation Award, 2010.

American Taxation Association Manuscript Award for 2009 for the article "Fundamentals of Shareholder Tax Capitalization."

American Taxation Association Best Discussant Award 2008.

Lundquist College of Business Research Excellence Award 2007 for the article "Fundamentals of Shareholder Tax Capitalization."

American Taxation Association Manuscript Award for 2000 for the article "Capital Gains Tax Rates and the Cost of Capital for Small Business: Evidence from the IPO Market."

American Taxation Association Manuscript Award for 1999 for the article "Financial Reporting, Tax Costs, and Book-Tax Conformity."

Ernst & Young Tax Research Grant, Summer, 1998.

KPMG Peat Marwick Faculty Fellowship, three years beginning Fall, 1994.

Association of Chartered Accountants in the United States 1993 Manuscript Award for the paper "Accounting Standards and National Tax Laws: The IASC and the Ban on LIFO."

American Taxation Association Manuscript Award for 1993 for the article "Taxes and Organizational Form: A Comparison of Corporations and Master Limited Partnerships."

KPMG Peat Marwick Research Fellowship for the years 1992-93 and 1993-94.

Southern New England Telephone and School of Business Administration "Best Business Article" Award for 1992 for the article "Taxes and Organizational Form: A Comparison of Corporations and Master Limited Partnerships."

KPMG Peat Marwick Doctoral Scholarship, 1987-89.

AICPA Doctoral Scholarship, 1986-89.

EXTERNAL SERVICE

Co-Editor of *The Accounting Review* (beginning June 2011)
Past Associate Editor of *Accounting Horizons*
Current and Past Editorial Board Memberships:

The Accounting Review
The Journal of the American Taxation Association
Contemporary Accounting Research.
Ad hoc reviewer for:
Journal of Accounting and Economics
Journal of Accounting Research.
National Tax Journal
AAA Annual Meeting paper selection
Prior Committee Membership:
AAA Membership Committee
AAA Notable Contribution Nomination Committee (Chair)
ATA Manuscript Award Selection Committee (Chair)
ATA Dissertation Award Selection Committee
1998, 2000 *JATA* Conference Committee

WORK EXPERIENCE

7/05 to present:	Lundquist College of Business, University of Oregon, Eugene, OR	
	Position:	Scharpf Professor of Accounting
		Accounting Department Head (9/06-9/11)
	Teaching:	Introduction to Taxation (undergraduate)
		Financial Statement Analysis (graduate)
		Introduction to Accounting Research (PhD seminar)
		MBA Financial Accounting (graduate)
		Current Topics in Accounting (PhD seminar)
		Taxation of Corporations (graduate)
		Taxation of Flow-through entities (graduate)
1/99 to 5/05:	Leeds School of Business, University of Colorado, Boulder, CO	
	Position:	Professor, Tisone Chair in Accounting
		Associate Dean for Faculty and Academic Programs (9/02-8/04)
	Teaching:	Intermediate Accounting I and II (undergraduate)
		Financial Accounting Theory (graduate)
		Financial Statement Analysis (graduate)
		Introduction to Accounting Research (PhD seminar)
		Tax Research in Accounting (PhD seminar)
8/01 to 12/01:	Massachusetts Institute of Technology, Cambridge, MA	
	Position:	Visiting Professor of Accounting
	Teaching:	MBA Core Financial Accounting (graduate)
		Taxes and Business Strategy (graduate)

1/90 to 12/98: University of Connecticut, Storrs, CT
Position: Associate Professor (from 9/96) of Accounting
Teaching: Introductory Financial Accounting (MBA)
Intermediate Accounting (undergraduate)
Federal Income Tax (undergraduate)
Tax Planning for Business Decisions (graduate)
Dissertation committee member (2) and chair (1)

9/86 to 12/89: University of Washington, Seattle, WA
Position: Graduate Teaching Assistant
Courses: Taxation (corporate, partnership, individual, intro.)
Introductory Financial Accounting

1/83 to 8/86: Kernutt, Stokes, Brandt & Co., CPAs, Eugene, OR
Position: Tax Partner

7/81 to 12/82: Nucorp Energy, Inc., San Diego, CA
Position: Director of Taxes

7/77 to 6/81: Arthur Young & Company, CPAs, San Diego, CA
Position: Tax Manager

4/76 to 7/77: Eadie and Payne, CPAs, San Bernardino, CA
Position: Staff Accountant

PROFESSIONAL

Certified Public Accountant (inactive): Oregon.

Member: American Institute of CPAs, American Accounting Association, American Taxation Association.

MILITARY SERVICE

Active Duty, United States Marine Corps, 1972-1974 (Vietnam-era veteran).

PERSONAL

Married, three children.