TAX HAVENS: IMMEDIATE COSTS AND BENEFITS

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ABSTRACT

An extensive body of research has documented that tax havens are associated with income statement measures of ETR (i.e., GAAP ETR). However, the literature has largely ignored the potential impact of the IRC Sec. 367 (the "toll charge") – the initial cost of transferring IP to a new tax-haven subsidiary. Prior to 2018, this immediate cash outlay was not reflected in GAAP ETR due to the elimination of intercompany transaction upon consolidation; however, it will be reflected in Cash ETR. Our study is the first to document the cost, not only the benefit, to engage in income shifting. We find that the initial adoption of a tax haven subsidiary is associated with a reduction in GAAP ETR and an increase in Cash ETR. We predict that Cash ETR will increase temporarily and then fall as the benefits of income shifting begin to outweigh the cost. We find that Cash ETR remains higher for about four years. When examining ETRs over time, we find that before establishing a tax haven, GAAP ETR is higher than Cash ETR, but the gap disappears within two years after adoption.

Key Words: tax-haven subsidiary, international accounting, effective tax rates

INTRODUCTION

Tax authorities have long been concerned about tax avoidance via tax havens and intellectual property (IP). Anecdotal and empirical evidence suggests that these concerns are not unwarranted and indeed that multinational corporations are engaging in such activities. For example, US parent transfers valuable IP to a tax haven subsidiary and then pays royalties to the tax haven to use the IP. The royalty payment is treated as a deductible expense in the US and reported as income in the tax haven. Thus, there is a tax benefit from taking the deduction at higher tax rates and tax savings from reporting income at low tax rates. However, the costs of income shifting is oft overlooked. "US tax law makes it difficult to remove IP from the US without incurring potentially significant tax costs" (2008 article p. 21). "Transfers of existing IP to FCo will almost certainly result in a current tax costs to the US transferor" (2008 article, p.18). IRC Section 367 "generally denies outbound transfers of IP in what would otherwise be tax-free transfers under the Code" (2008 article, p.16 – to be reworded). The domestic transferor is treated as having sold the IP to the newly formed foreign subsidiary. In this study, we take a closer look at income shifting in light of the "toll charge" associated with transfers of IP to a foreign subsidiary.

Prior studies on income shifting across jurisdictions use GAAP ETR or current ETR to capture the level of tax benefit of such strategies (Rego 2003; Dyreng and Lindsey 2009; Col and Errunza 2015). However, these measures may not have fully accounted for all relevant tax costs. The only paper that we are aware of that explicitly tests the relationship between tax havens and cash ETR is Law and Mills (2022). The distinction is important as there are tax costs that do not appear in financial measures of ETR (i.e., GAAP and Current ETR), but will appear in Cash ETR. Prior to 2018, the toll charge was not reflected as an expense item because intercompany transactions were eliminated during consolidation. Tax costs were not reflected as a tax expense, and were instead recorded as a prepaid tax. Thus, although establishing a tax haven is costly, only the benefits, not the costs, are reflected on financial statement income.

We use initial adoption of a tax haven subsidiary as our setting because actual transfer of IP is unobservable outside the firm. It is reasonable to assume that a firm has no IP in tax-haven subsidiaries if no tax-haven subsidiaries exist. Nonetheless, we note that the toll charge is not a one-time charge paid when the tax haven is initially established but is incurred every time IP is transferred to a foreign subsidiary. A firm that transfers patents may find that those patents eventually expire or diminish in usefulness overtime. Thus, requiring the firm to transfer IP on a more frequent basis. Our discussion with a former Big 4 tax partner confirms the notion that tech firms commonly transfer IP about every five years. Thus, a firm that frequently transfers IP internationally will pay this fee frequently.

Our results suggest that the initial adoption of a tax-haven subsidiary is associated with a reduction in GAAP ETRs and an increase in cash ETRs. Our results with respect to cash ETRs are especially interesting. While we document a relatively short-lived increase in cash ETRs, lasting around four years on average, we do not observe a statistically significant *reduction* in cash ETRs in any year within our observation period (six years). In contrast, we document an immediate and persistent reduction in GAAP ETRs following the first-time adoption of a tax-haven subsidiary. In supplemental analysis, we further note increases in deferred tax assets (DTA) and PRE designations, post tax-haven adoption. Increases in PRE designations suggest that the adoption of the tax-haven subsidiary was a key step in lowering reported tax expense. Increases in DTA suggest that the toll charge has been capitalized, not expensed on the financial income statement.

We contribute to research examining profit shifting of U.S. firms into low-tax foreign jurisdictions. To our knowledge, this study is the first, to our knowledge, that takes into consideration the costs of IRC Sec. 367 when shifting intangible income into low-tax jurisdictions. The toll charge is an important friction that can restrict the establishment of transfer pricing structures that facilitate profit shifting and is likely contributing to the "under-sheltering puzzle" highlighted by Dharmapala (2014) and Dyreng, Hanlon, and Maydew (2019). The set-up costs (e.g., IRC Sec. 367) create an additional barrier that has not been explored well in the literature. Dyreng and Markle (2016) do acknowledge that there are "fixed costs" of implementing structures that facilitate income shifting; however, these initial fixed costs were not the focus of their study, and only mentioned briefly in their hypothesis development. By

referring to fixed costs, generally, a reader may interpret these costs as tax planning fees paid to accounting firms, and not necessarily the IRC 367 toll charge.

Further, that these costs were not reflected in consolidated income statements may have led to an incomplete understanding of the costs and benefits of placing IP in tax havens. For example, prior studies have found that tax havens are associated with lower *foreign* tax expense but anomalously not associated with lower *federal (U.S./domestic?)* tax expense (Dyreng and Lindsey (2009), Law and Mills (2022)). One explanation might be that the toll charge results in an immediate increase in domestic tax payments, which is consistent with our findings. We believe that the literature could benefit from a more nuanced understanding of the toll charge and its effects on the financial statements. Our study is one of the first to examine the relation between tax havens and Cash ETR, joining Law and Mills 2022.

In addition, we contribute to the debate on base erosion and profit shifting (BEPS). Blouin and Robinson (2020) that the magnitude of BEPS by U.S. firms is overstated. Our results also suggest that the loss of U.S. tax revenue due to income shifting may be lower than previously thought.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Intangible income shifting

MNCs create complex structures in order to justify the payment from the high-tax affiliates to low-tax affiliates. For example, if an intangible asset (or IP) is said to be held by a low-tax subsidiary, then the U.S. parent makes royalty payments to use the IP. This tax-saving strategy be enhanced by increasing the payment amount (i.e., transfer price). Of course, the transfer price must also be justifiable to escape IRS scrutiny.

IRC Section 367 ("Toll Charge")

Locating IP in a tax-haven subsidiary is a necessary first step that justifies shifting income to that jurisdiction. Whether or not a firm conducts material operation in a tax-haven country, it can transfer intangible property (IP) to a tax-haven subsidiary, thereby allocating a portion of its earnings to such country. The IRC Sec 367 toll charge is a tax on intercompany transactions (e.g., transferring existing IP into a foreign subsidiary in exchange for the stock in that foreign corporation).

Financial Accounting Treatment of the Toll Charge

Because it is an intercompany transaction, transferring IP to a foreign subsidiary is a taxable event that is effectively ignored for financial purposes. Intercompany transactions are generally eliminated during the consolidation process. Before 2018, ASC 740-10-25-3(e) required the income or loss associated with intercompany transactions, along with the associated tax expense, to be eliminated during the consolidation process. Therefore, the toll charge would not affect

GAAP ETR. However, the toll charge is an actual cash payment, which would increase Cash ETR.

In summary, there are immediate cash costs to transferring IP to a tax-haven subsidiary, a necessary first step to generate tax savings by shifting income. However, the toll charge is a tax that does not affect financial statement income, as the income which generates the tax is eliminated during the consolidation. Taken together, the toll charge from relocating IP to a tax haven increases Cash ETR but would not affect GAAP ETR. Although intercompany transfers of IP are not observable to the public, establishing a new tax haven subsidiary can be inferred from financial statements. Presumably, a new tax haven strategy requires an IP transfer. The above arguments lead us to the following prediction (stated in the alternative):

HYPOTHESIS 1: *Cash ETRs increase following the adoption of tax-haven subsidiaries.*
HYPOTHESIS 2: *GAAP ETRs decrease following the adoption of tax-haven subsidiaries.*

RESEARCH DESIGN

To test our hypothesis, we investigate the relation between tax-haven adoption and two measures of tax cost/benefit (i.e., tax avoidance). *GAAP ETR* represents tax expense per dollar of pre-tax income before special items. *Cash ETR* represents cash taxes paid per dollar of pre-tax income before special items. Our multivariate analysis employs the following models:

$$GAAP\ ETR\ (Cash\ ETR) = \alpha + \beta_1\ Post + \Sigma\beta\ \text{controls} + \varepsilon \quad (1)$$

$$GAAP\ ETR\ (Cash\ ETR) = \alpha + \beta_1\ Post + \beta_2\ TH\ Adopting\ Firms + \beta_3\ Post \times TH\ Adopting\ Firms + \Sigma\beta\ \text{controls} + \varepsilon \quad (2)$$

We use one-year ETR measures to examine short- and long-run effects because multi-year ETR measures may obscure short-term effects. We also use a difference-in-difference design, as shown in Model (2), by matching each treatment firm (i.e., the limited sample) with a control firm that did not adopt a tax-haven subsidiary.[1] *TH Adopting firms* is equal to one for treatment firms, and zero for control firms. The interaction term (β_3) provides evidence of whether the change in ETRs during the period differed compared to firms that did not adopt a tax haven.

Control Variables

We follow prior research in controlling for factors that may affect ETRs, foreign tax avoidance and tax incentives (e.g., Khurana and Moser (2013) and Dyreng, Hanlon, and Maydew (2010)) All variables are defined in the Appendix.

[1] Matching criteria require the same industry, size and foreign income to be within one standard deviation, and GAAP ETR to be within 20 percent. We select the firm closest in foreign tax rate to ensure that differences in our ETR variables are not due to different foreign tax rates between our treatment and control firms. We use these matching variables because they are predictors of tax-haven subsidiary adoption. If we find no match within 2-digit SIC code, we use 1-digit SIC code instead.

Sample Selection

We use the Exhibit 21 dataset provided by Scott Dyreng to identify tax-haven subsidiaries. A firm with at least one subsidiary located in a tax-haven country is deemed a tax-haven firm. This dataset contains some, but not all, of 2014. We limit our sample to the latest full year available, 2013. We eliminate firms headquartered outside the U.S., financial (SIC codes 6000-6999) and utility (SIC codes 4900-4999) firms, observations with missing data to calculate model variables, as well as loss firms. These procedures reduce our sample size to 13,527 firm-year observations (our "full sample"), which represent 2,648 unique firms.

We define initial adopters as firms that do not have a tax-haven subsidiary three years prior to adopting a tax haven in time *t*. We identify 377 firm-year observations that meet this restriction. We eliminate firms that do not have missing data over a 7-year period surrounding the year of adoption ($t-3$ through $t+3$), reducing our sample to 156 firms. This is our sample of tax-haven-adopting firms (i.e., limited sample).

RESULTS

Descriptive Statistics

Table 1, Panel A, present univariate statistics for our limited sample (firms that adopted a tax-haven subsidiary) and provides evidence consistent with both predictions, reporting average *GAAP ETR* is 1.7 percentage points *lower* (p=0.070, two-tailed), and average *Cash ETR* is 2.2 percentage points *higher* (p=0.046, two-tailed) in the post-adoption period relative to the pre-adoption period. In our sample, average GAAP ETRs are higher than average Cash ETRs, but after tax-haven adoption GAAP ETRs decrease and Cash ETRs increase (**H2** and **H1).** Thus, the differences between GAAP and Cash ETRs decrease post adoption; where the difference drops from 5.2 percent to 1.25 percent in the pre-adoption period compared to the post-adoption period, almost a 4 percent decline (p=0.0025, two-tailed).

In Table 1, Panel B, we compare the treatment and control groups across the dimensions used in matching. Across all four dimensions, there is no statistically significant difference. This helps to address matching concerns and helps with the parallel trends assumption.

TABLE 1. Univariate Statistics

Panel A: Tax Haven Adopting Firms

		Pre-Adoption	Post-Adoption	Difference	p-value	
		N=468	N=468	N=468	N=468	
		(1)	(2)	(3)	(4)	
Key Independent Variables						
Cash ETR	22.8%	25.4%	27.7%	2.2%	(0.046)	**
GAAP ETR	27.1%	30.6%	28.9%	-1.7%	(0.070)	*
Current ETR	25.5%	28.6%	29.1%	0.5%	(0.654)	
Control Variables - Firm						
Advertising Exp	0.011	0.014	0.014	(0.000)	(0.976)	
Capital Expend	0.116	0.127	0.121	(0.006)	(0.250)	
Equity Earnings	0.001	0.001	0.001	(0.000)	(0.358)	
High Foreign Inc	0.320	0.181	0.215	0.034	(0.038)	**
Foreign Income D	0.639	0.504	0.632	0.128	(<0.0001)	***
Intangible Assets	0.209	0.213	0.270	0.057	(<0.0001)	***
Inventory	0.119	0.124	0.121	(0.003)	(0.163)	
Leverage	0.188	0.192	0.195	0.002	(0.793)	
Market to Book	2.987	3.237	3.047	(0.189)	(0.443)	
NOL Dummy	0.522	0.425	0.545	0.120	(0.000)	***
Change NOL	0.000	0.006	0.001	(0.005)	(0.190)	
PP&E	0.446	0.220	0.205	(0.015)	(0.003)	***
R&D Expense	0.041	0.026	0.025	(0.001)	(0.443)	
Return on Equity	0.245	0.269	0.232	(0.037)	(0.240)	
SGA Expense	0.250	0.224	0.232	0.008	(0.062)	*
Size	6.979	6.777	7.276	0.498	(<0.0001)	***
Foreign Tax Tate	16.4%	15.7%	19.5%	3.9%	(0.004)	***
Domestic Tax Rate	20.7%	16.9%	24.9%	8.0%	(<0.0001)	***

Panel B: Treatment vs. Control

	N	Treatment	Control	Difference	p-value
Size	156	6.920	6.687	0.233	(0.143)
Foreign Income	156	0.016	0.015	0.001	(0.655)
GAAP ETR	156	30.6%	30.7%	0.0%	(0.979)
Foreign Tax Tate	156	16.0%	15.7%	0.3%	(0.900)
DTA	129	149.59	246.26	(96.671)	(0.290)

*** p<0.01, **p<0.05, *p<0.1.

Costs and Benefits over Time

The toll charge occurs upon the initial transfer of that specific IP, at which point the costs outweigh the benefits from the tax haven scheme. Although the toll charge will result in an immediate increase Cash ETR, we do not expect it to be permanent. Therefore, we also compare Cash ETR and GAAP ETR across years.

In Table 2, we compare the average cash ETR per firm before adoption (t-3 to t-1) to the one-year cash ETR in years t through t+6. We do not expect a significant difference in year t as we do not know when during the year the tax-haven subsidiary was adopted. In years t through t+4, the cash ETR is higher than the average cash ETR in the pre-adoption period. In years t+5 and t+6, the cash ETR is lower than the pre-adoption period, although this difference is not statistically significant. These results provide strong evidence that, following the adoption of tax-haven subsidiaries, firms' cash ETRs increase (consistent with **H1**) and remain higher for an average of four years.

As expected, cash ETRs will increase temporarily and then begin to fall as the firm increases profit shifting out of high-tax jurisdictions. This temporary increase appears to be fairly long (four years), and even in the sixth year the decrease in cash ETR is not statistically lower than pre-adoption levels. Overall, the results reported in Table 2 are consistent with expectations.

TABLE 2. T-tests of ETRs following Adoption of a Tax-Haven Subsidiary

	t	t+1	t+2	t+3	t+4	t+5	t+6
Mean Cash ETR Change	0.9%	2.4%*	2.9%**	4.8%***	2.6%*	-0.4%	-0.7%
p-value	(0.347)	(0.089)	(0.017)	(0.002)	(0.080)	(0.817)	(0.731)
N	156	156	156	156	143	111	93

Notes: This table presents the results of paired t-tests examining the change in Cash ETR following the adoption of a tax-haven subsidiary. We calculate this change in Cash ETR by subtracting the one-year Cash ETR for each period (year t through year t+6) from a pre-tax-haven-adoption benchmark (average Cash ETR for the three years prior to tax-haven adoption). Positive (negative) numbers represent increases (decreases) in Cash ETR relative to the pre-tax-haven-adoption benchmark. *** p<0.01, **p<0.05, *p<0.1

Multivariate Analysis

In Table 3 we examine ETRs before and after tax-haven adoption in a regression setting. The post-adoption period *Post*, measured as an indicator variable equal to one for years after adoption. Consistent with **H2**, *Post* is *negative* and marginally significant (p=0.071, one-tailed) in column 3. In contrast, consistent with **H1**, *Post* is *positive* and significant (p=0.018, one-tailed) in column 1, indicating that in the post adoption period *GAAP ETR* is *lower* and *Cash ETR* is *higher* relative to the pre-adoption period. Next, we utilize a matched sample to eliminate concerns that changes in ETRs in the pre- and post-adoption period were driven by factors other than tax-haven adoption. For each firm in our limited sample, we identify a similar firm that did not adopt a tax-haven subsidiary. For the matched sample we use model (2) in columns 2 and 4.. The interaction term is the key independent variable in these regressions, as it compares the

respective ETRs for post-adoption tax-haven-adopting firms to similar firms that did not adopt a tax-haven subsidiary (i.e., the matched sample). In column 2, the interaction term is positive and statistically significant (p=0.009, one-tailed). Consistent with cash ETRs increasing in the post-adoption period for tax-haven adopters, but not their matched counterparts, providing strong support for **H1**. In column 4 the interaction term is negative and statistically significant, indicating that GAAP ETRs are significantly lower for adopting firms in the post-adoption period than for non-adopting firms (p=0.032, one-tailed), providing support for **H2**.

TABLE 3. Regression - ETRs and Tax-Haven-Adopting firms

	Cash ETR				GAAP ETR			
		(1)		(2)		(3)		(4)
	Pred	Limited	Pred	Matched	Pred	Limited	Pred	Matched
Key Independent Variables	Sign	Sample	Sign	Sample	Sign	Sample	Sign	Sample
Post	+	0.025**		-0.012	-	-0.012*		0.017
		(0.018)		(0.242)		(0.071)		(0.140)
TH Adopting Firms				-0.023*				0.004
				(0.085)				(0.762)
Post * TH Adopting Firms			+	0.023***			-	-0.026**
				(0.009)				(0.032)
Control Variables								
Advertising Exp		0.236		0.101		0.307		0.314
		(0.391)		(0.703)		(0.300)		(0.189)
Capital Expend		-0.017		-0.024		0.050		0.118
		(0.850)		(0.692)		(0.590)		(0.104)
Equity Earnings		-0.209		-1.790		-2.784**		-2.423***
		(0.898)		(0.276)		(0.023)		(<0.0001)
High Foreign Inc		-0.041		-0.027		-0.044**		-0.029*
		(0.101)		(0.151)		(0.016)		(0.079)
Foreign Inc D		0.010		0.010		0.019		0.008
		(0.585)		(0.502)		(0.142)		(0.496)
Intangible Assets		-0.104*		-0.055		0.023		0.027
		(0.073)		(0.280)		(0.541)		(0.474)
Inventory		0.098		-0.004		0.218***		0.040
		(0.459)		(0.958)		(0.001)		(0.482)
Leverage		-0.043		-0.078*		-0.046		-0.081***
		(0.383)		(0.096)		(0.149)		(0.001)
Market to Book		-0.002		-0.001		0.001		0.001
		(0.417)		(0.672)		(0.296)		(0.623)
NOL Dummy		-0.028**		-0.006		-0.009		0.001
		(0.038)		(0.614)		(0.475)		(0.923)
Change NOL		-0.041***		-0.064***		-0.032		-0.023
		(<0.0001)		(0.004)		(0.113)		(0.296)
PP&E		-0.042		-0.009		-0.021		-0.025
		(0.256)		(0.870)		(0.435)		(0.238)
R&D expense		-0.396**		-0.557***		-0.140		-0.224
		(0.022)		(<0.0001)		(0.375)		(0.132)
Return on Equity		0.000		0.010		0.022*		0.038*
		(0.987)		(0.411)		(0.085)		(0.094)
SGA expense		0.159		0.059		-0.029		-0.099**

	(0.107)	(0.512)	(0.641)	(0.028)
Size	0.010	0.004	-0.003	-0.002
	(0.194)	(0.491)	(0.604)	(0.683)
Tax Holiday	0.000		0.025***	
	(0.994)		(<0.0001)	
Intercept	0.134	0.280***	0.334***	0.292***
	(0.224)	(<0.0001)	(<0.0001)	(<0.0001)
Observations	936	1,872	936	2,016
R-squared	15.7%	12.7%	20.5%	15.1%

***p<0.01, ** p<0.05, * p<0.1

CONCLUSION

This paper explores the determinants and consequences of the decision by a U.S. MNC to incorporate a tax-haven subsidiary into their corporate structure. We highlight that transferring IP to a foreign subsidiary is a taxable event, and therefore establishing a tax-haven subsidiary is costly. We highlight that this tax charge is not reflected as an expense on the financial statements. Thus, the immediate, short-term consequences of a tax haven adoption is to increase cash tax payments, while decreasing tax expense. We find that the initial adoption of a tax-haven subsidiary is followed by a significant *reduction* in GAAP ETR, but an *increase* to its cash ETR. The magnitude of this cost is significant, as the average increase in Cash ETRs is 2.2%, while the average decline in GAAP ETRs is 1.7%. This suggests that at least in the short-term, the additional cash taxes paid are higher than the reduced tax expense. We find that the increase in Cash ETRs persists on average for 4 years. Further, we do not observe a statistically significant reduction in the cash ETR in a six-year window following the adoption of the tax-haven subsidiary. We conclude that the consequences of IRC section 367 have largely been overlooked in the accounting literature, and that establishing a tax-haven will not immediately reduce tax payments.

These costs are more relevant following the Tax Cuts and Jobs Act of 2017. Beginning in 2018 both the tax law (TCJA 2017) and the financial reporting changed. Beginning in 2018 the IRC 367 costs are to be expensed on the financial statements, instead of treated as a pre-paid tax. Thus, the immediate financial reporting benefits of tax-haven adoption are eliminated by changes to ASC 740. That is, any financial reporting incentive has been eliminated beginning in 2018, as these costs are now required to be expensed. This was caused by changes to ASC 740, not the TCJA. In short, the cash costs of establishing tax-havens to shift profit are more important, post 2017.

APPENDIX

Variable	Description
Variables of Interest	
Cash ETR	Cash tax paid (TXPD) divided by pretax income (PI) less special items (SPI). Calculated over one year. Winsorized at 0 and 1.
GAAP ETR	Tax expense (TXT) divided by pretax income (PI) less special items (SPI). Calculated over one year. Winsorized at 0 and 1.
Current ETR	Current tax expense (TXC) divided by pretax income (PI) less special items (SPI). Calculated over one year. Winsorized at 0 and 1.
Cash Level	Cash and Cash Equivalents (CHE) divided by total assets (AT).
Control Variables	
Advertising Exp	Advertising expense (XAD) divided by set sales (SALE). Set to zero if missing.
Capital Expend	Capital Expenditures (CAPX) scaled by Gross Property Plant and Equipment (PPEGT).
Change NOL	Change in loss carry forward (TLCF) scaled by lagged assets (AT).
Domestic Tax Rate	Federal Income Tax (TXFED) divided by pretax domestic income (PIDOM). Winsorized at 0 and 1.
Equity Earnings	Equity Income in earnings (ESUB) scaled by total assets. If missing values are set to 0.
Foreign Inc D	Firms with non-missing, non-zero pretax income from foreign operations (PIFO).
Foreign Tax Rate	Foreign income tax (TXFO) divided by pretax foreign income (PIFO). Winsorized at 0 and 1.
High Foreign Inc	Higher than the median of firms based on foreign income, calculated as foreign income (PIFO) scaled by total assets (AT).
Intangible Assets	Intangible assets (INTANG) scaled by total assets (AT). Set to zero if missing.
Inventory	Inventory (INVT) scaled by total assets (AT). Set to zero if missing.
Leverage	Current (DLC) and Long-term debt (DLTT) scaled by total assets (AT).
Market to Book	Market value of equity (CSHO*PRCC_F) divided by book value of equity (CEQ).
NOL Dummy	=1 if loss carry forward (TLCF) is positive, 0 otherwise.
PP&E	Net property, plant and equipment (PPENT) scaled by assets (AT).
R&D Expense	Research and development expense (XRD) divided by net sales (SALE). If missing values are set to 0.
Return on Equity	Return on Equity, measured as operating income (PI - XI) scaled by lagged equity (CEQ).
SA Index	An indicator variable equal to 1 if the firm has an SA index value (Hadlock and Pierce 2010) in the upper third of the sample in year t, and 0 otherwise. This follows Dyreng and Markle (2016).
SGA Expense	Selling, General, and Administrative expense (XSGA) divided by net sales (SALE). If missing values are set to 0.
Size	The natural log of total assets (AT)

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