Deferred Tax Items as Earnings Management Indicators

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[Abstract] This study uses data collected from CSMAR, the China Center for Economic Research, for the period 2009-2015. We develop a more practical method of measuring earnings management using deferred tax items and compare the new method to the traditional approach. We find that the new method is effective and may be used alone on individual companies or as a complement to other earnings measurement techniques, since the new method focuses on different data.

[Keywords] earnings management; deferred taxes

Introduction

Earnings management has been extensively researched. It has been an important topic in accounting literature for more than 20 years. Walker (2013) reviewed the literature on earnings management over a 20-year period. He found over 311 articles, and 274 of these were published in North American journals. Walker believes that interest in earnings management as a research topic has increased since 2005.

Various researchers have defined earnings management in slightly different ways. Schipper (1989) defines earnings management as purposeful intervention in the external financial reporting process with the intent of obtaining some private gain. Mulford & Comisky (2002) say it is the active manipulation of earnings towards a predetermined target. Walker (2013) calls earnings management the use of managerial discretion (within GAAP) over accounting choices, earnings reporting choices, and real economic decisions to influence how underlying economic events are reflected in one or more measures of earnings. Healy and Wahlen (1999) see it as the alteration of a firm's financial reports by insiders in order either to mislead some stakeholders or to influence contractual outcomes that are dependent on numbers in the financial reports.

One way companies are able to manage their earnings is by making discretionary accrual adjustments, which are allowed because the accrual basis of accounting requires estimates to be made as part of the financial accounting and reporting process. For example, adjusting the bad debt expense estimate up or down will directly increase or decrease reported net income. Various researchers have devised different ways to measure the degree of earnings management. In this paper, we explore a potential alternative earnings management indicator that is easy for investors to apply. We develop the measure using deferred tax items and compare it with the traditional earnings management measure.

Literature Review

While the earnings management literature is well-developed, using deferred tax items and valuation allowance accounts or other tax related items as a measure of earnings management is a much younger stream of research. Phillips, Pincus, and Rego (2003) hypothesize that a greater level of discretion in calculating financial accounting income (according to GAAP) when compared to the calculation of taxable income (according to the Internal Revenue Code) will allow managers to utilize that discretion to manage income in a positive manner but in ways that do not also increase taxable income. This type of discretionary earnings management will create timing differences that result in an increase in deferred tax expense. They found that earnings management resulting from both total accruals and abnormal accruals was successfully utilized to avoid both an earnings decline, as well as a loss, but only total accruals were successfully used to detect earnings management to meet analyst forecasts.

Using data gathered from firms' income tax footnote disclosures, Phillips, Pincus, Rego, and Wan (2004) investigate the relationship between earnings changes and corresponding changes in the deferred tax account. They found evidence that the changes in the deferred tax account related to expense accruals and reserves can be used to detect earnings management both to avoid an earnings decline, as well as to report earnings increases.

Noor, Mastuki, and Aziz (2007) use data from the Bursa Malaysia (Malaysian stock exchange) in a replication of Phillips, Pincus, and Rego (2003) to investigate whether firms use deferred tax expense to manage earnings in order to (1) avoid an earnings decline, and (2) to avoid a loss. They found evidence that firms use deferred tax expense and discretionary accruals to avoid a loss. However, they were not able to support their hypothesis that deferred tax expense and discretionary accruals were used to avoid an earnings decline.

In a somewhat novel approach, Ifada and Wulandari (2015) examine the use of deferred tax expense to manage taxable income (and corresponding tax payments), rather than financial accounting income. While they found that deferred taxes significantly affect earnings management, they found no support for company size or tax planning activities affecting earnings management.

In a study of 58 British firms, Holland and Jackson (2004) found significant use of under- or over-provisions of deferred tax and that such provisions accounted for approximately 9% of before tax profit or loss. They examined the deferred tax provisions in the context of three variables and found that the level of under- or over-provisions positively related to (1) whether a pre-tax profit or loss is reported, (2) any adjustment of a prior year tax amount, and (3) the level of surplus advance corporation tax. They found strong evidence supporting the use of deferred tax characteristics in the smoothing of income.

Mills and Newberry (2001) found that when firms have incentives to manage earnings, those firms will show greater differences between taxable income and book income. Specifically, privately held firms facing financial distress, and privately held firms that are highly leveraged will report greater book/tax differences.

Frank and Rego (2006) use capital-market-based incentives to measure earnings management. They look at three different management behaviors (smoothing earnings, meeting earnings forecasts, and an "earnings bath") measured around three different earnings targets: (1) positive profit, (2) prior year earnings, and (3) average analyst forecast. They found evidence to support the idea that the Valuation Allowance Account (VAA) was used to manage earnings towards the average analyst forecast, but no evidence that the VAA was used to manage earnings to achieve positive profit, meet a prior year earnings level, or engage in a "big bath."

Schrand and Wong (2003) attempted to determine if banks used high valuation allowances for deferred tax assets to manage future earnings. They found that banks created "hidden reserves" with high valuation allowances associated with deferred tax assets, and those reserves were used to manage earnings toward the consensus analyst forecast.

Bauman, Bauman, and Halsey (2001) sampled Fortune 500 firms in order to examine whether earnings management was affected by changes in the deferred tax asset valuation allowance account. Contrary to the results obtained by others, they found that it is often impossible to determine the earnings effect of a valuation change from the financial statement disclosures. In addition, they found evidence that amounts used in the effective tax rate reconciliation are a better measure of earnings management, compared to using changes in the valuation account.

Dhaliwal, Gleason, and Mills (2004) posit that earnings management is strongly affected by tax expense, as it is one of the last accounts closed prior to earnings announcements. They hypothesize that "All else equal, changes in tax expense related to whether and by how much a firm's earnings absent tax expense management miss the firm's target earnings" (pg. 438). They found that when actual earnings fall short of the consensus forecast, firms decrease their effective tax rates in order to manage income upward. In addition, they found that firms that have larger accruals are more likely to manage income through manipulation of tax expense.

The Tax Reform Act of 1986 lowered the top corporate tax rate from 46% to 34% and provided a unique opportunity to examine if changing tax rates, resulted in firms engaging in earnings management.

A 12-percentage-point drop in the top rate would certainly provide some significant incentive for firms to defer income until after the rate change takes effect. Guenther (1994) found significantly negative current accruals (resulting in deferred income) for large firms in the year prior to the tax rate reduction. He also found negative current accruals were positively related to debt levels.

Methodology

Data Collection
The data is collected from CSMAR, the China Center for Economic Research. We chose to use the data from 2009-2015. China started to adopt IFRS in 2007. We allow one year for the new standards to settle. The analysis requires one year of prior data; thus, we also collect 2008 data for the traditional earnings management indicator calculation. We exclude the finance industry, since it is under a different set of rules. We divide the data into two groups, 2009-2010 and 2011-2015, in order to use the 2009-2010 data for robust testing.

Earnings Management
Earnings management has been the subject of extensive accounting research. Healy and Wahlen (1999) defined earnings management as the alteration of a firm's financial reports by insiders in order to mislead some stakeholders or to influence contractual outcomes that are dependent on numbers in the financial reports. Leuz et al. (2003) adopted this definition, as do we. Measuring the degree of earnings management has presented challenges, and researchers have devised various methods. In this study, we use the methods developed by Leuz et al. (2003), which were based on previous work by Dechow et al. (1995), Healy and Whalen (1999), and Dechow & Skinner (2000) for comparison purposes.

Earnings management is generally understood to mean attempts by company insiders to protect their positions and benefits by manipulating the financial information provided to outsiders. This often takes the form of income smoothing or income manipulation. We use the method defined by Leuz et al. (2003) to quantify earnings management to compare with our alternative measure. We first introduce accruals and cash flow.

The operational definition of accruals is:

$Accruals= (\Delta CA-\Delta Cash)-(\Delta CL-\Delta STD-\Delta TP)-Dep$ Equation (1)

Where:

ΔCA = change in total current asset;

$\Delta Cash$ = change in cash/cash equivalents;

ΔCL = change in total current liabilities;

ΔSTD = change in short-term debt included in current liabilities;

ΔTP = change in income taxes payable;

Dep = depreciation and amortization expense.

We then calculate cash flow from operations:

Cash flow from operations = Operating earnings - Accruals   Equation (2)

EM = | Accruals|/|Cash flow from operations| Equation (3)

Where: EM stands for earnings management.

The larger EM is indicative of large-scale use of discretion to manipulate reported accounting earnings. Leuz et al. (2003) identifies other measures of earnings management. However, these other measures are not applicable for purposes of this paper. We use the term traditional EM to distinguish EM derived from Equation (3) from the earnings management measure we develop.

Alternative Earnings Management Measure
The above earnings management measure has been widely adopted. However, the application of it by average investors can be inconvenient due to its complexity. We develop an alternative measure. We first develop regression Model 1. Deferred tax items in China have three major components: tax and financial

reporting temporary differences of depreciation; impairment loss; and previous losses that can be carried forward for five years.

DeferredTaxItems= $\beta_0 + \beta_1$ AssetMix + β_2Impairment + β_3IfLoss + ε (Model 1)
Where:
DeferredTaxItems= (Deferred Tax Liablility-Deferred Tax Asset)/Total Asset;
AssetMix=Long Term Asset/Total Asset;
Impairment=Impairment Loss/Total Asset;
IfLoss=1 if previous year has a loss, 0 otherwise.

Our alternative earnings management measure (hereafter AlternativeEM) is the residual value of Model 1. We rank our AlternativeEM and compare it with the rank of traditional EM from Equation 3. We investigate the relationship between the two measures.

Results

Model Development Using 2011-2015 Data
    AlternativeEM development. Model 1 regression analysis shows that DeferredTaxItems is significantly positively correlated with AssetMix. The higher the percentage of long term assets, the higher the DeferredTaxItems. This is due to temporary book tax depreciation expense difference. Impairment and IfLoss are significantly negatively related to DeferredTaxItems. Impairment loss increases deferred tax asset due to book tax differences. Previous year loss is tax deductible if there are future profits to offset it, so IfLoss also increases deferred tax asset. Impairment and IfLoss, thus, decrease DeferredTaxItems ((Deferred Tax Liability-Deferred Tax Asset)/Total Asset). Table 1 illustrates Model 1 results.

Table 1
Deferred Tax Items AnalysisDependant Variable: DeferredTaxItems
Overall Model: $p<0.0001$; Adjusted R^2=0.0476

	Parameter Estimates			
Variable	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	-0.0077	0.0003	-23.68	<.0001
AssetMix	0.0122	0.0006	19.72	<.0001
Impairment	-0.0496	0.0056	-8.91	<.0001
IfLoss	-0.0031	0.0005	-6.30	<.0001

The formula derived from Model 1 using 2011-2015 data is:
DeferredTaxItems =-0.00771+0.01219*AssetMix-0.04956*Impairment-0.00308*IfLoss
Equation (4)

Our AlternativeEM is thus:
Alternative EM=DeferredTaxItems-(-0.00771+0.01219*AssetMix-0.04956*Impairment-0.00308*IfLoss)   Equation (5)

    Alternative EM vs. traditional EM. We rank our AlternativeEM and analyze its relation with the rank

of traditional EM from Equation 3. Table 2 shows the results.

Table 2
AlternativeEM Rank vs. traditional EM Rank: 2011-2015 Data
Dependant Variable: AlternativeEM rank
Overall Model: p<0.0001; Adjusted R^2=0.0428

	Parameter Estimates			
Variable	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	6182.6855	67.1309	92.10	<.0001
EM Rank	-0.2910	0.0162	-17.91	<.0001

     The two measures are significantly negatively correlated with each other. Deferred tax items are influenced by asset mix, impairment loss taken, and previous year loss if there was a loss. The result seems to indicate that the larger the unexplained portion of deferred tax items, the less earnings management we observe. Could this be because impairment loss, asset mix, and even previous year loss are all discretionary to a certain extent? Through manipulation of the three items, management is able to achieve the desired deferred tax items amount. If the deferred tax items are naturally occurring during the normal course of business without much manipulation, the correlations of deferred tax items and impairment loss, asset mix, and previous year loss are weaker.

     The residual of Model 1, which is our AlternativeEM measure, is, thus, bigger. The bigger our AlternativeEM, the smaller the degree of earnings management. This explains the negative correlation between our AlternativeEM measure and the traditional EM measure. Our results are in line with previous research about deferred tax items' impacts on earnings management (Phillips, Pincus, & Rego, 2003; Phillips, Pincus, Rego, & Wan, 2004; Noor, Mastuki, & Aziz, 2007; Ifada & Wulandari, 2015; Holland & Jackson, 2004).

     Robust Test Using 2009-2010 Data: We apply Equations (3) and (5) to 2009-2010 data. We rank AlternativeEM and traditional EM as we do for 2011-2015 data. Table 3 illustrates the results. The significant negative relationship between AlternativeEM and Traditional EM ranks holds.

Table 3
AlternativeEM Rank vs. traditional EM Rank: 2009-2010 DataDependant Variable: AlternativeEM rank
Overall Model: p<0.0001; Adjusted R^2=0.0357

	Parameter Estimates			
	Parameter Estimate	Standard Error	t Value	Pr > |t|
	1915.4835	34.3669	55.74	<.0001
	-0.2184	0.0214	-10.19	<.0001

Conclusion

The alternative EM measure we develop is significantly negatively correlated with the traditional EM

measure. The bigger the alternative EM measure, the smaller the earnings management. Our alternative EM measure is easier to apply compared to the traditional EM measure. Our alternative EM measure focuses on deferred tax items. It can be applied individually. Investors can also analyze it together with other earnings management measures that focus on different items, such as the traditional EM we use for comparison in this research. Our alternative EM measure complements other earnings management measures due to its unique focus.

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