Journal of Accounting, Auditing & Finance

The Relationship Between the Management of Book Income and Taxable Income Under a Moderate Level of Book-Tax Conformity

Ester Chen, Ilanit Gavious and Rami Yosef Journal of Accounting, Auditing & Finance 2013 28: 323 originally published online 20 October 2013 DOI: 10.1177/0148558X13505591

> The online version of this article can be found at: http://jaf.sagepub.com/content/28/4/323

> > Published by:

http://www.sagepublications.com

On behalf of:

Sponsored by The Vincent C. Ross Institute of Accounting Research, The Leonard N. Stern School of Business

Additional services and information for Journal of Accounting, Auditing & Finance can be found at:

Email Alerts: http://jaf.sagepub.com/cgi/alerts

Subscriptions: http://jaf.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

Citations: http://jaf.sagepub.com/content/28/4/323.refs.html

>> Version of Record - Nov 6, 2013

OnlineFirst Version of Record - Oct 20, 2013

What is This?

The Relationship Between the Management of Book Income and Taxable Income Under a Moderate Level of Book-Tax Conformity

Journal of Accounting, Auditing & Finance 28(4) 323–347 ©The Author(s) 2013 Reprints and permissions: sagepub.com/journalsPermissions.nav DOI: 10.1177/0148558X13505591 jaf.sagepub.com



Ester Chen¹, Ilanit Gavious¹, and Rami Yosef¹

Abstract

We find evidence suggesting that taxable income management is not related to book income management in firms operating under a moderate level of book-tax conformity. For a sample of Israeli firms that the tax authorities determined had understated their earnings to avoid taxes, we do not find evidence of an overstatement of book earnings. Notably, public firms do not differ from private firms in this regard. Using a control sample of firms that were not subject to tax audits, we validate that self-selection does not affect our inferences. Given Israel's unique "intermediate" level of book-tax conformity, an important practical contribution of the findings is in shedding more light on the question of the need for a substantial transition from nonconformity to full alignment in countries with large book-tax gaps (such as the United States). Our results showing that tax-avoiding firms in Israel, public and private alike, avoid book income management even if areas of book-tax *nonconformity* allow them to do so imply that a reduction in the divergence between the tax and the accounting rules may suffice to reduce managers' opportunistic (reporting) behavior.

Keywords

earnings management, tax planning, tax avoidance, book-tax conformity

Introduction

Our research investigates the relationship between the management of book income and taxable income in firms operating under a moderate degree of book-tax conformity. In the United States, there is an ongoing debate in the tax literature and among policymakers regarding the conformity between income measures for book and tax purposes, and its impact on the quality of reported earnings.¹ The general notion is that nonconformity between financial accounting and tax rules enables firms to manage book income *and* taxable income in the same reporting period, whereas under book-tax conformity, firms make

Corresponding Author: Ilanit Gavious, Department of Business Administration, Ben-Gurion University, P.O. Box 653, Beer-Sheva 84105, Israel. Email: madaril@bgu.ac.il

¹Ben-Gurion University, Beer-Sheva, Israel

trade-offs between their financial and tax reporting decisions (e.g., Badertscher, Phillips, Pincus, & Rego, 2009; Frank, Lynch, & Rego, 2009; Hanlon, 2005; Plesko, 2007). Over the past decade, an increasing disparity has developed between the two systems, leading to calls in the United States for mandatory book-tax conformity to reduce tax and accounting reporting aggressiveness (e.g., Atwood, Drake, & Myers, 2010; Desai, 2006; Frank et al., 2009).

In our research, we seek to shed more light on the question of the need for a substantial transition from nonconformity to full alignment in countries with large book-tax gaps, or whether reducing the divergence between the tax rules and the accounting rules to a moderate level may suffice. To entertain this notion, we examine the financial reporting behavior of Israeli firms. Israel represents a case of an intermediate level of book-tax conformity and thus offers an opportunity to examine managers' financial reporting behavior in a setting where the tax system does not strongly diverge from the accounting system (such as in the United States) nor is fully aligned with it (such as in the United Kingdom).² In practice, all else being equal, the book-tax difference (BTD) in Israel would fall between the BTD in the United Kingdom and that in the United States. For U.S. firms, Frank et al. (2009) document a strong positive relationship between downward taxable earnings manipulation and upward book earnings manipulation. We are interested in whether this relationship holds in a setting of a moderate degree of book-tax conformity.

In our study, we extend the analysis to private firms. Private firms are a critically important aspect of the economy. There is, however, a dearth of knowledge about private firms, in general, and financial manipulations in these firms in particular, mainly due to the lack of access to sufficient information required to study these firms (i.e., data about private firms are not available in the public domain). This lack of data has led researchers to call for more research on private firms to help understand their reporting behavior, given their different structures and reporting incentives (see, for example, Hanlon & Heitzman, 2010).

Our study takes advantage of a unique data set that includes nonpublic information on private and public firms randomly selected from the annual tax-audit database for the time period of 1994 to 2007.³ Specifically, we obtained information on 156 Israeli firms—101 private and 55 public—that were selected by the tax authorities for a tax audit (in all, 313 firm-year observations—156 private and 157 public—with sufficient data necessary for our analyses). From the tax authorities, we also obtained 300 more firm-year observations (150 private and 150 public) that were not subject to tax audits over the research period. These nonaudited firms serve as a control sample to facilitate tests for, and procedures to deal with, a potential sample-selection bias.

The nonpublic information that we use in our analyses includes the private firms' financial statements, private and public firms' tax returns as well as the documented income tax assessments conducted by the tax authorities for each firm selected for a tax audit. These data provide us with an opportunity to conduct a variety of univariate and multivariate analyses of the management of book income reported to shareholders and the taxable income reported to the tax authorities (henceforth also referred to as book earnings management and tax planning, respectively), in private firms versus public firms. The tests are designed to account for differences between private and public firms, as well as for accrual drivers and factors affecting tax planning. We also control for tax-audit self-selection characteristics.

Measures of book earnings management are based on prior literature and include empirical measures (discretionary accruals measures based on the modified J. Jones, 1991, model as well as performance-matched abnormal accruals based on Kothari, Leone, and Wasley's, 2005, work) and nonempirical measures (nonoperating accruals based on Givoly and Hayn's, 2000, work as well as total accruals). Measures of tax planning are based on actual data about (a) book-tax differences calculated as the discrepancy between the pretax book income and the taxable income (before loss carryforwards) reported in the tax return, and (b) additional taxable income (ATI), which is the discrepancy between the final taxable income determined by the tax authorities and the taxable income (after loss carryforwards) reported by the firm in the tax return. While in the literature, the BTD is generally considered to be a better measure of tax planning than alternative measures that are based solely on data drawn from financial statements, it is acknowledged that book-tax gaps may be due to factors other than tax avoidance (Desai, 2003; Desai & Dharmapala, 2006, 2009; Plesko, 2007). In contrast, the ATI is a direct measure of the firm's tax avoidance as determined by the tax authorities in the firm's final tax assessment. We refer to the BTD and to the ATI as *ex-ante* and *ex-post* measures of tax planning, respectively.

Our study shows that for both private and public firms in our sample, taxable income management is not related to book income management. Firms that the tax authorities determined have understated earnings for tax purposes did *not* overstate book earnings. The inferences remain similar when we repeat the analyses for firms that were not selected for a tax audit by the tax authorities. For these firms as well, we do not find evidence of a relationship between the BTD⁴ and measures of book earnings management. We further validate that self-selection does not affect our inferences by using a two-stage Heckman (1979) approach in our regressions. The results indicate that the inferences made in this study are robust to controlling for tax-audit self-selection characteristics.

In addition, we do not find a direct impact of the firm's being private versus public (or vice versa) on book earnings management or on tax planning. While we find evidence that the BTD is significantly larger for private firms than for public firms, our *ex-post* measure of tax planning—ATI—indicates that tax reporting aggressiveness, in effect, is not *directly* affected by the firm's being private versus public. This finding implies that the differences in the BTD between private and public firms do not reflect tax avoidance activity.

The results show that managers do not necessarily take advantage of the ability to manage both book income and taxable income at the same time, even if areas of nonconformity between accounting and tax rules allow them to do so. While Frank et al. (2009) show that under book-tax nonconformity in the United States, there is a significant positive relationship between tax reporting aggressiveness and financial reporting aggressiveness, our results indicate that with a lower degree of nonconformity—such as in Israel—and despite a highly concentrated ownership structure in public and private firms alike, managers of tax-avoiding firms did not engage in book earnings management. Studies have shown that ownership concentration, which leads to higher information asymmetries, is related to a lower quality of reported earnings and greater earnings management (e.g., Ball, Kothari, & Robin, 2000; Ball & Shivakumar, 2005; Burgstahler, Hail, & Leuz, 2006; Leuz, Nanda, & Wysocki, 2003). Interestingly, despite the unique concentrated ownership structure of public firms in Israel, like private firms, they did not manage book earnings while understating earnings for tax purposes.

It seems that managers consider the book-tax trade-offs not only when book-tax alignment compels them to decide which earnings measure to manage, but also when the tax rules are not fully aligned with the accounting rules. This conclusion is consistent with the general expectation that a "smart" manager will refrain from biasing taxable income downward and book income upward in the same year, as a large gap between book and taxable income is bound to draw the attention of the tax authorities. An important implication of the findings in this study is that a reduction in the divergence between the tax rules and the accounting rules (from a large to a moderate degree of nonconformity) may suffice to reduce managers' opportunistic (reporting) behavior.

The research contributes to the existing literature on the relationship between tax and accounting reporting manipulations. The rare data used in the analyses add great value to the information documented in this empirical article. As these data are not publicly available, studies thus far have usually compensated for the lack of essential information by focusing on public firms and using financial statement data (e.g., tax expenses, differed taxes) to estimate or project tax planning. Hence, these studies use proxies rather than the real figures for tax planning, a compromise that may have a substantial effect on the results and the inferences drawn.⁵ Furthermore, this study extends the analysis to private firms and thus contributes to a growing, but still relatively scarce, strand of research that seeks to understand the reporting behavior of private firms. Our research will be of direct relevance to investors and other users of financial statements, auditors, financial analysts, tax authorities, and regulators. All of these parties are interested in the detection of a firm's motives for and engagement in earnings manipulation. For example, to make informed decisions, investors in public as well as private firms are presumably interested in whether accounting aggressiveness implies that the firm also engages in aggressive tax reporting, and vice versa. In addition, the Securities and Exchange Commission (SEC) and the Internal Revenue Service (IRS) need this information to evaluate whether additional costs should be invested in improving the quality of earnings reports and preventing the loss of tax revenues, respectively. Finally, regulators and accounting standard setters are interested in the extent to which nonconformity between accounting rules and tax rules affects managers' decisions with respect to managing earnings in both financial and tax reports concomitantly.

Our article proceeds as follows. The "Literature Review" section reviews prior research and discusses the level of book-tax conformity in different countries in general, and in Israel in particular. The "Data" section describes our sample. The section "Research Methods and Results" discusses our research methods and results, while the last section summarizes and concludes.

Literature Review

The relationship between accounting principles and tax laws plays an important role in a firm's financial and tax reporting. On one hand, under a high degree of book-tax conformity, corporate taxes are calculated based on book earnings. Such a situation could, in effect, create incentives for managing earnings downward to reduce tax payments (e.g., Ball, Robin, & Wu, 2003). Alternatively, firms may choose to pay additional taxes on inflated earnings to reduce the risk of detection by regulators or enforcement agencies (Erickson, Hanlon, & Maydew, 2004). Shackelford and Shevlin (2001) review empirical tax research in accounting⁶ documenting that, given the trade-offs firms face in their decisions about financial and tax reporting, they generally choose between reporting lower taxable income to the tax authorities *or* higher earnings to shareholders. For that matter, the trade-off is less severe for private firms if they manage book earnings downward to minimize taxes (e.g., Ball & Shivakumar, 2005). However, when there is an increasing book-tax gap, a firm is able to manage taxable income (downward) without impacting book earnings (e.g., McGill & Outslay, 2004; Weisbach, 2002). Other studies suggest that the discretion available in accounting principles allows book earnings management without

affecting taxable income (e.g., Hanlon, 2005; Phillips, Pincus, & Rego, 2003). Frank et al. (2009) document a strong positive relationship between aggressive book earnings management (manipulating income upward) and aggressive tax reporting (manipulating taxable income downward) for U.S. firms. Frank et al.'s results are consistent with Desai (2005), who provides systematic evidence that financial reporting and tax reporting have degraded in quality due to the dual reporting system.

In a recent study of a departure from a tax-based accounting system in China toward the adoption of International Financial Reporting Standards (IFRS), Chan, Lin, and Mo (2010) find evidence that as book-tax conformity decreases, tax noncompliance increases. Overall, it seems that a company's ability or motivation to engage in aggressive tax (financial) reporting in concomitance with aggressive financial (tax) reporting is related to the degree of book-tax conformity. Notably, with a moderate degree of book-tax conformity, *ex ante*, it is unclear what the relationships between financial and tax reporting manipulations will be. We examine this issue empirically.

The Level of Book-Tax Conformity in Different Countries

The amount of flexibility firms have in reporting taxable income that is different from pretax book income differs across countries. Recent studies attempting to rank the level of book-tax conformity of different countries (e.g., Atwood et al., 2010; Blaylock, Shevlin, & Wilson, 2012) show that countries with a relatively low (high) level of book-tax conformity include, *inter alia*, the United States, Canada, and Germany (the United Kingdom, France, and Spain). Hanlon and Heitzman (2010) note that when the European Union (EU) adopted the IFRS for financial reporting, it originally considered the adoption of IFRS as a common consolidated tax base to be used by all members, but eventually withdrew this plan (see also Schön, 2005).⁷ Hence, countries following IFRS have different levels of book-tax conformity (as shown in the rankings presented in Atwood et al., 2010, and Blaylock et al., 2012). The evidence shows that while some European countries moved away from a conformed system, others moved toward a conformed system over time (Hanlon & Heitzman, 2010).

Israel represents an interesting case in terms of its tax and accounting environments during the studied period. While some countries tend to align tax profits with book profits and others seek to make tax profits diverge from book profits, Israel combines or falls in between the two approaches, resulting in a moderate level of book-tax conformity (Income Tax Ordinance Amendment No. 188; Israel Income Tax Authority, 2012). The starting point for the tax return of an Israeli firm is the book pretax income extracted from the firm's financial statements, followed by the adjustments required by the tax laws. The Supreme Court in Israel has determined that whenever the tax law is silent, the accounting rules have the upper hand for any issue in disagreement with the Israeli Tax Authority (ITA⁸).⁹ In practice, accounting principles are used to determine the tax profits of Israeli firms if the tax laws do not offer a specific treatment for the specific case. As for the accounting environment in Israel during the sample period, it also represents a combination of the local, the U.S. and the international standards. Israeli Generally Accepted Accounting Principles (GAAP) were largely based on the accounting principles generally accepted in the United States (U.S. GAAP). Unless U.S. GAAP has been used, International Accounting Standards were applicable. Appendix I presents examples of the differences between Israeli GAAP and U.S. GAAP during the sample period.

Data

We obtained archival data on a sample of 156 Israeli firms—101 private and 55 public¹⁰—from the Israeli tax authorities. The cases were randomly selected by tax officials from the annual tax-audit database for the time period of 1994 to 2007, resulting in 469 firm-years. Our sample period does not extend beyond 2007 because in 2008, the accounting environment in Israel changed due to the full adoption of IFRS (which was not accepted by the ITA).¹¹ Note that each public (private) firm in our sample remained public (private) throughout the entire sample period (i.e., firms do not "switch" between the two subsamples). We lose 156 firm-year observations when, consistent with prior studies, we scale our earnings management measures by lagged total assets, resulting in 313 firm-years (156 private and 157 public) with sufficient data necessary for our analyses. Consistent with the earnings management literature, our database does not include financial and utility firms that are "subject to more complex earnings-management incentives due to regulation or other factors" (Burgstahler & Eames, 2003, p. 262).¹² To facilitate tests for, and procedures to deal with, a potential sample-selection bias, we obtained an additional 300 (150 private and 150 public) firm-years from the tax authorities that were not subject to tax audits over the research period. To mitigate the effect of extreme values, we winsorize extreme observations for all variables (top and bottom 1%). We winsorize outliers instead of deleting them to conserve data. The results do not change qualitatively when outliers are deleted.

Note that a data set for a study that is based on cases of firms identified as, or accused of, tax avoidance is, at the outset, relatively small. For example, the sample in Graham and Tucker (2006) consisted of 43 public firms, *including* utilities and financial services firms; the sample of tax shelter firms used in Frank et al. (2009) to validate their measure of tax reporting aggressiveness was based on Graham and Tucker's data set and consisted of 25 public firms only. Hence, our sample size is fairly large, particularly given Israel's relatively small market.

We collected information manually from the firms' financial statements, their tax returns, and the documented income tax assessments that we obtained from the firms' files at the tax authorities. We utilized our access to this information to obtain two measures for tax planning, the book-tax differences (*BTD*), which we refer to as our *ex ante* measure for tax planning, and the additional taxable income (*ATI*) determined for the firms by the tax authorities.¹³ The proportion of positive *BTD* observations is similar in private and public firms (72% and 73%, respectively). We do not exclude negative or zero *BTD*s from our analyses to avoid further loss of observations. Our inferences remain qualitatively the same as the original results when we repeat our tests excluding the nonpositive *BTD* observations.¹⁴ All of our *ATI* observations are positive, which should provide more generalizable results (Chan et al., 2010; Mills, 1998).

Tax Planning Measures

The *BTD* is the discrepancy between the pretax book income and the taxable income (before loss carryforwards) reported in the tax return. A positive *BTD* implies an understatement of earnings for tax purposes. Prior studies have indicated that the *BTD* captures elements of tax avoidance. For example, Wilson (2009) finds that the *BTD* is greater for firms that were caught using tax shelters¹⁵ than for a matched sample of firms that were not caught. Lisowsky (2010) finds a strong positive relationship between tax shelter usage

and total *BTD* (see also Frank et al., 2009; Wilson, 2009), but no significant association between tax shelter usage and either discretionary permanent *BTD* or long-run cash effective tax rates (ETR)—other proxies for tax avoidance used in prior research. Desai (2003) cites the increasing *BTD* over the 1990s as evidence of aggressive tax reporting.

While studies have shown that *BTD* is associated with tax avoidance, book-tax gaps may be due to factors other than tax avoidance. First, in countries where the tax rules are not fully aligned with the accounting rules, the *BTD* would be different than zero due to the fact that while some aspects of reporting may be identical under both reporting systems (e.g., cash sales with no right of return), others are disparate (e.g., nonqualified stock options; see Plesko, 2007).¹⁶ Furthermore, the *BTD* may also reflect book earnings management (i.e., overstatement of book income; see Desai & Dharmapala, 2009; Frank et al., 2009). Desai (2003) finds that only half of *BTD*s are explained by their known, measurable determinants (international operations, stock options, and depreciation accounting) and suggested that the unexplained portion is therefore consistent with the tax sheltering activity.

In comparison with the widely used *BTD*, *ATI* is a direct and substantially more accurate measure of tax planning, as it captures the final amount of tax avoidance as determined by the authorities following an assessment of the firm's tax reports. A positive *ATI* indicates that the final taxable income as per the tax assessor was higher than the taxable income reported by the firm in the tax return. As such, a positive *ATI* implies that the tax authorities determined that the firm had manipulated its taxable income downward through tax planning that may or may not be considered fraudulent tax evasion.

Book Earnings Management Measures

We use four alternative measures of book earnings management from the literature, (a) discretionary accruals based on the modified J. Jones (1991) model, (b) performance-matched abnormal accruals based on Kothari et al.'s (2005) work, (c) total accruals, and (d) nonoperating accruals based on Givoly and Hayn's (2000) work. Hereafter these measures are named for short *DA*, *PMA*, *TA*, and *NOA*, respectively. The measures are calculated for the public and the private firms separately.

To obtain *DA*, we estimate the following cross-sectional version of the modified J. Jones (1991) model for each industry and year, using *Bloomberg Professional* data:

$$TA_{it} = \alpha_0 + \alpha_1 (\Delta REV_{it} - \Delta AR_{it}) + \alpha_2 \times GPPE_{it} + \varepsilon_{it}, \tag{1}$$

where *TA* is total accruals, ΔREV is the change in revenues from the previous year, ΔAR is the change in accounts receivable, *GPPE* is gross fixed assets, and *i* and *t* subscripts indicate the firm and year, respectively. Each variable, including the intercept, is deflated by beginning-of-year total assets. We winsorize the dependent and independent variables at the 1st and 99th percentiles. The industry-year-specific coefficient estimates from Equation 1 are used to estimate expected accruals as a percentage of lagged total assets. Unexpected—discretionary—accruals (our *DA*) are accruals (scaled by lagged total assets) less expected accruals.

As private firms are not obligated to prepare a statement of cash flows, and most of our private firms chose not to, rather than calculating total accruals (the dependent variable in the Jones model) as net income minus cash flows from operations, we use an alternative calculation used in prior studies (e.g., Dechow, Sloan, & Sweeney, 1995; Raman & Shahrur, 2008):

$$TA_{it} = \Delta CA_{it} - \Delta CL_{it} - \Delta Cash_{it} + \Delta STD_{it} - Dep_{it}$$
⁽²⁾

where ΔCA is the change in current assets, ΔCL is the change in current liabilities, $\Delta Cash$ is the change in cash and cash equivalents, ΔSTD is the change in debt included in current liabilities, and *Dep* is depreciation.¹⁷

We estimate our second alternative measure of book earnings management, *PMA*, by adding a proxy for performance—return on assets (*ROA*)—as an independent variable in the modified Jones model and repeating the procedure described earlier.¹⁸ This approach is in keeping with Kothari et al. (2005), and consistent with other prior studies (e.g., Raman & Shahrur, 2008).¹⁹

Previous studies (e.g., Geiger, North, & O'Connell, 2005; Kothari et al., 2005) also advocate the use of nonempirical measures in addition to the discretionary accruals to address empirical concerns regarding the Jones model. The nonempirical measures that we use are TA (see also, for example, De Franco, Gavious, Jin, & Richardson, 2011; K. Jones, Krishnan, & Melendrez, 2008) and NOA (e.g., Gavious, 2009; Geiger et al., 2005). Based on Givoly and Hayn's (2000) research, NOA are calculated as net income plus depreciation and amortization, minus cash flows from operations, minus operating accruals. Again, given that cash flows from operations are unavailable for the private firms in our sample, we use Equation 2 to compute net income minus cash flows from operations. Operating accruals are defined as follows: Accounts Receivables + Inventories + Prepaid Expenses - Accounts Payable - Taxes Payable. To control for size effects, we scale TA and NOA by beginning-of-year total assets, consistent with the scaling of the modified Jones model. *NOA* consist primarily of such items as losses and bad debt provisions, asset write-downs, gains/losses on the sale of assets, restructuring charges, accrual and capitalization of expenses, the effect of changes in estimates, and deferrals of revenue and their subsequent recognition (Givoly & Hayn, 2000). Given that NOA include items that are under the discretion of management (in terms of timing and/or estimation of recorded amounts), they are used to indicate whether firms actively engage in earnings manipulation.

Table 1 contains descriptive statistics for our sample of private and public firms. The two samples differ significantly (generally at the 1% level) in a number of ways. Private firms generally demonstrate innate characteristics associated with lower earnings quality and weaker external monitoring (De Franco et al., 2011). For example, private firms are smaller, have a lower level of financial leverage and are less likely to be audited by a Big4 auditor.²⁰ The median total assets of private (public) firms is 21 (375.9) million new Israeli shekels (NIS),²¹ and their median sales is 23.6 (234.2) million NIS. The median private (public) firms' leverage is 10% (16%) of total assets. In addition, 44% (85%) of private (public) firms are audited by a Big4 auditor. In comparison with private firms, public firms' have better growth prospects and have performed better. The median private (public) sales growth measured as the percentage of change in annual sales is 8% (10%). Private firms' profitability as measured by *Profit margin, ROA*, and return on equity (*ROE*) is lower, 9% (12%), 8% (9%), and 12% (16%), respectively. Median working capital (scaled by total assets) for private (public) firms is 0.10 (0.15), which suggests that private firms have less liquidity.

The median *BTD* is 4.3% of total assets for both private and public firms, though the mean is significantly higher for private firms (11.7% compared with 5.1% of total assets for public firms). *ATI* is also larger for private firms than for public firms. Specifically, the mean (median) *ATI* for private firms is 3.5% (1.5%) of total assets, while for public firms it is 1.9% (0.8%). Prior studies indicate that, because it is less costly for private firms to

Variable	Private firms			Public firms			Difference		
Vallable	М	Median	SD	М	Median	SD	М	Median	SD
Total assets	69.04	20.98	216.58	1,678.03	375.90	3,706.65	***	***	***
Book value equity	15.25	4.50	29.49	427.72	137.40	767.38	***	***	***
Total sales	51.97	23.62	79.30	853.64	234.20	1,356.42	***	***	***
SalesGrowth%	0.48	0.08	1.96	0.65	0.10	5.90	***	***	*
Profit margin	0.20	0.09	0.69	0.28	0.12	1.05	**	*	**
ROA	0.08	0.08	0.16	0.18	0.09	0.47	***	***	***
ROE	0.05	0.12	1.90	0.08	0.16	1.62	***	***	***
Working capital	0.12	0.10	0.80	0.17	0.15	0.31	***	***	***
Leverage	0.21	0.10	0.26	0.23	0.16	0.21	***	***	***
Big4Auditor	0.44	0	0.50	0.85	I	0.36	***	***	***
Ownership concentration	I	I	0	0.70	0.75	0.18	***	***	***
Largest shareholder holdings	0.50	0.50	0.02	0.61	0.66	0.20	***	***	***
Second largest shareholder	0.49	0.50	0.02	0.07	0.02	0.11	***	***	***
BTD	0.12	0.04	0.28	0.05	0.04	0.14	***		*
ATI	0.04	0.02	0.04	0.02	0.01	0.03	***	***	*
DA	-0.00	-0.00	0.30	-0.01	-0.01	0.17			
PMA	-0.03	-0.02	0.40	-0.06	-0.01	0.41			
ТА	-0.01	-0.02	0.26	-0.05	-0.02	0.14			
NOA	-0.01	-0.01	0.24	-0.03	-0.03	0.17		**	

Table I. Descriptive Statistics.

Note. This table provides descriptive statistics for our sample of 111 private and 55 public firms randomly selected by tax officials from the annual tax audit for the years 1994-2007, resulting in 313 firm-year observations (156 private and 157 public). Extreme values (top and bottom 1%) of continuous variables are winsorized. Asterisks indicate that the private firms' value is significantly different than the corresponding public firms' value.

Variable definitions: All financial statement data are measured in million NIS. (During the sample period, FX rate was in the range of 3 to 3.8 NIS per US\$1.) SalesGrowth% is the percentage of change in the annual sales. Profit margin is earnings before interest, taxes and depreciation and amortization (EBITDA) divided by Total sales. ROA is EBITDA divided by Total assets. ROE is income before extraordinary items divided by Book value equity. Working capital is current assets minus current liabilities, divided by Total assets. Leverage is the ratio of total liabilities less current liabilities to total assets. Big4Auditor equals I if the auditor is a Big4 audit firm, and 0 otherwise. Ownership concentration represents the share ownership of managers, directors, and 5% or greater beneficial owners. (Second) largest shareholder holdings represents the percentage of share ownership by the (second) largest shareholder. Ownership data are extracted from the If'at Capital Disc Co. database. BTD is Book-Tax Income Difference and ATI is the Additional Taxable Income, both scaled by lagged total assets. DA is abnormal accruals derived from the modified Jones model, while PMA is derived from the performance-matched modified Jones model. TA is total accruals measured as the change in current assets, minus the change in current liabilities, plus the change in debt included in current liabilities, minus depreciation. NOA is nonoperating accruals based on Givoly and Hayn (2000). The accrual measures are also scaled by lagged total assets.

*,**, and *** indicate significance levels (two-tailed) of 10%, 5%, and 1%, respectively.

reduce book and tax earnings, they are likely to be more aggressive tax planners than public firms (Cloyd, Pratt, & Stock, 1996; Lin, Mills, & Zhang, 2012; Mills, 1998; Mills & Newberry, 2001).²² Given that private firms do not publish their financial statements, they face fewer trade-offs in their decisions about financial and tax reporting (e.g., Ball & Shivakumar, 2005). Another possible explanation is that private firms engage in less sophisticated tax planning, making it easier for the tax authorities to uncover evidence of

tax evasion. Furthermore, prior research argues that firms with a large *BTD* will face greater scrutiny from regulators (e.g., Badertscher et al., 2009; Cloyd, 1995; Mills, 1998). Hence, if the *BTD* is larger for private firms, then a stricter audit by the tax authorities may lead to a higher *ATI*. Notwithstanding, the univariate differences between private and public firms found in the *BTD* and *ATI* do not control for other factors potentially affecting tax planning. In the next section we extend the analysis of the difference in tax planning between private and public firms and the relationship between tax planning and book earnings management by estimating multivariate regressions that control for incentives to tax plan or to manage book earnings.

Finally, Table 1 shows the accrual measures are generally (in)significantly *negative* for public (private) firms. Nonetheless, the differences between private and public firms are statistically significant only for the median *NOA*. As stated, it is less costly for private firms to reduce book earnings to minimize the tax burden. Yet, we see that the public firms in our sample also reported their book earnings conservatively, possibly even more so than private firms. Furthermore, in Israel the ownership structure is highly concentrated in private firms as well as in public firms. The median share ownership of a control group in private (public) firms is 100% (75%), where the largest shareholder owns 50% (66%) and the second largest shareholder owns 50% (2%). Studies have shown that ownership concentration leads to higher information asymmetries and thus to a lower quality of reported earnings and greater earnings management (e.g., Ball et al., 2000; Ball & Shivakumar, 2005; Burgstahler et al., 2006; Leuz et al., 2003). Once again, surprisingly, despite the unique concentrated ownership structure of public firms in Israel, like private firms, they do not seem to have managed book earnings while understating earnings for tax purposes.²³

Research Methods and Results

Tests

We explore the relationship between management of taxable income and book income using multivariate Models 3 and 4. Following previous studies (e.g., Frank et al., 2009; Graham & Tucker, 2006; Plesko, 2007), we control for the effect of profitability, size, the presence of loss carryforwards, and leverage on tax planning. We also control for differences between private and public firms, the impact of Big4 auditors and of growth, as well as for industry and year fixed effects. For the *ATI* regression, we add *BTD*. As prior research argues that firms with large *BTD*s face greater scrutiny from regulators (e.g., Badertscher et al., 2009; Cloyd, 1995; Mills, 1998), *ATI* may be positively correlated with *BTD*:

$$BTD_{it} = \alpha_0 + \alpha_1 Public_{it} + \alpha_2 Size_{it} + \alpha_3 SalesGrowth_{it} + \alpha_4 ROA_{it} + \alpha_5 Leverage_{it} + \alpha_6 TA_{it} + \alpha_7 TA_{it} \times TAsign_{it} + \alpha_8 LossCarryforwards_{it} + \alpha_9 Big4Auditor_{it} + \varepsilon_{it}.$$
(3)

$$ATI_{it} = \alpha_o + \alpha_1 Public_{it} + \alpha_2 Size_{it} + \alpha_3 SalesGrowth_{it} + \alpha_4 ROA_{it} + \alpha_5 Leverage_{it} + \alpha_6 TA_{it} + \alpha_7 TA_{it} \times TAsign_{it} + \alpha_8 LossCarryforwards_{it} + \alpha_9 BTD_{it} + \alpha_{10} Big4Auditor_{it} + \varepsilon_{it}.$$

$$(4)$$

Public is an indicator variable that equals 1 if the firm is public, and 0 otherwise. *Size* is the log of total assets. *SalesGrowth* is the percentage of change in annual sales. *ROA* is earnings before interest, taxes, depreciation, and amortization (*EBITDA*) divided by total assets, and *Leverage* is the ratio of total liabilities less current liabilities to total assets. *LossCarryforwards* is net operating losses that can be offset against taxable income. *Big4Auditor* equals 1 if the auditor is a Big4 audit firm, and 0 otherwise. *TA* is total accruals, a proxy for book earnings management. Consistent with prior studies, we also control for the direction of earnings management and include an interaction variable *TA* × *TAsign*, where *TAsign* is an indicator variable that equals 1 if total accruals are positive, and 0 otherwise. Thus, $TA \times TAsign$ is total accruals, if total accruals > 0, and 0 otherwise.²⁴ Our results are robust to the use of other accrual measures as well (see subsection "Additional Tests"). We use *TA* in the model because, based on our results as well as on prior research, total accruals serve as *at least* as good a measure for earnings management as other empirical measures.²⁵

Note that the impact of auditors on tax planning is not explicit. On one hand, Big4 auditors are able to provide more sophisticated techniques for tax evasion and have more tools and resources to justify the tax reports of their auditees to the tax and legal authorities. On the other hand, more reputable auditors seek to reduce the risk of litigation and protect their brand name reputation (Becker, DeFond, Jiambalvo, & Subramanyam, 1998; DeAngelo, 1981; De Franco et al., 2011). Furthermore, the degree of book-tax conformity may also affect the auditors' considerations. Van Tendeloo and Vanstraelen (2008) indicate that differences in audit quality between Big4 and non-Big4 auditors exist only in countries with a high degree of book-tax conformity, such as the United Kingdom. According to Van Tendeloo and Vanstraelen, when the tax law is in conformity with accounting principles, the tax authorities tend to apply greater scrutiny to financial statements. In this setting, Big4 auditors have an incentive to provide higher quality audits to reduce the possibility that an audit failure would be detected. However, for private U.K. firms, Van Tendeloo (2008) found that in firms audited by a Big4 auditor, the tax burden was lower, implying that Big4 auditors did assist their clients in reducing the tax burden more than did smaller audit firms. In our case of an intermediate degree of book-tax conformity, it is even more difficult to form a prediction with respect to the impact of auditors on tax reporting aggressiveness.

We acknowledge that the inference about the effect of *BTD*, size, profitability, private/ public and *Big4Auditor* on *ATI* for the whole population could be biased. First, according to prior research, firms with larger *BTDs* may face a greater likelihood of being selected for a tax audit. Second, the tax authorities may be more suspicious of tax shelter activity in larger firms with structures and transactions that are more complex and sophisticated (e.g., using legal structures outside the country). Prior studies have shown that tax shelter utilization is positively related to the size and profitability of a company, as well as the presence of subsidiaries located in tax havens, foreign-source income, litigation losses, the use of promoters (suppliers, marketers, and financiers of tax shelters) and inconsistent book-tax treatment (Lisowsky, 2010; Wilson, 2009).²⁶ All of these factors are more pronounced in public firms than in private firms. In addition, public firms are generally consulted by larger and more reputable accounting firms (Big4 auditors). A tax assessor could potentially be affected by the identity of the auditor, though as discussed above, the impact of auditors on tax planning is not explicit.

To address a potential sample-selection bias, we use the two-stage Heckman (1979) approach. In the first stage, we develop a Probit regression model to estimate the

probability of a firm's being selected for a tax audit. To facilitate the first-stage estimation of the Probit regression, we obtained 300 (150 private and 150 public) firm-years from the tax authorities that were not subject to tax audits over the research period. We choose explanatory variables consistent with Chan et al. (2010):²⁷

$$Audit_{it} = \alpha_0 + \alpha_1 Public_{it} + \alpha_2 Size_{it} + \alpha_3 MarginInd_{it} + \alpha_4 Change_{it} + \alpha_5 Leverage_{it} + \alpha_6 Loss_{it} + \alpha_7 BTD_{it} + \alpha_8 BTD_{-I}ND_{it} + \alpha_9 Big4Auditor_{it} + \varepsilon_{it}.$$
(5)

Audit is 1 if the firm was selected for a tax audit, 0 otherwise. As per Chan et al. (2010), *MarginInd* is the ratio of the firm's profit margin to the industry average, *Change* is the percentage change in the firm's annual book income, *Loss* is 1 if the firm reported a loss, 0 otherwise, and *BTD_IND* is the percentage of deviation of a firm's *BTD* from the industry level. We add *Public* and *Big4Auditor* to the model. *Public, Size, Leverage, BTD*, and *Big4Auditor* are as defined earlier. We also control for industry and year fixed effects. In the second stage, we control for firm characteristics related to audit selection by including the inverse Mills ratio in the empirical Model 4.

The untabulated results for the first-stage model indicate that the probability of a firm's being selected for a tax audit is increasing in *BTD*, *BTD_IND*, and *Big4Auditor*. The impact of all the other explanatory variables on the audit selection is statistically insignificant.²⁸ Our percentage correctly classified is 63%, which is quite close to the 61.5% fit measure reported by Chan et al. (2010). The results of the second-stage model are presented in the following "Results" subsection.

Results

Table 2 reports the results from regressing our tax planning measures on book earnings management as well as on other various controls (Models 3 and 4). We run the *BTD* regression once for our sample of tax-audited firms and once for our control sample of nonaudited firms.²⁹ Given that we are dealing with a possible sample-selection bias by using a two-stage Heckman approach, we use the results from the control sample regression as "second pass" evidence that our inferences regarding the relationship between taxable income management and book income management in Israel are not biased due to self-selection.

For the *BTD* regression of the tax-audited firms presented in Table 2, all coefficients are significant except for the coefficients on *TA*, *TA* × *TAsign*, and *Big4Auditor*. Specifically, the negative coefficient on *Public* (-0.072) is consistent with prior studies indicating that private firms are likely to be more aggressive tax planners than public firms. Notwithstanding, while Mills and Newberry (2001) expect that private firms are likely to be more aggressive tax planners than public firms is smaller. Thus, they suggest that *BTD* may be a less useful indicator of private firms' aggressive tax positions. Building on this inference of Mills and Newberry, if the difference between private and public firms (the coefficient on *Public*) in the *ATI* regression is not consistent with that in the *BTD* regression, then the former can be considered more reliable, particularly given that the *ATI* is the direct—*ex-post*—measure of tax reporting aggressiveness.

The coefficients on *Size*, *SalesGrowth*, *ROA*, and *Leverage* (0.014, 0.013, 0.688, and -0.205 respectively) indicate that *BTD* is positively related to the firm's size, growth, and

	Predicted			
	Sign	Audited firms	Nonaudited firms	ATI
Intercept		-0.167*	-0.236**	0.120***
Public	?	-0.072**	-0.098**	0.007
Size	?	0.014**	0.072**	-0.006***
SalesGrowth%	+	0.013***	0.011***	0.002***
ROA	+	0.688***	0.836***	0.060***
Leverage	_	-0.205***	0.004	-0.007
TA	+	0.006	0.006	0.007
TA $ imes$ TAsign	+	0.017	0.030	0.018
LossCarryforwards	_	-0.075***	-0.043***	0.052*
BTD	+			0.011*
Big4Auditor	?	0.012	0.014	0.013***
Inverse Mills ratio	?			-0.00 I
R ²		.588	.517	.403
No. of observations		313	300	313

Table 2. Multivariate Analysis of the Relationship Between Book Earnings Management and Tax Planning.

Note. This table presents the results of regressing our tax planning measures on selected explanatory variables. We estimate various specifications of the following:

$$\begin{split} \text{BTD} = \alpha_{0} + \alpha_{1} \text{Public} + \alpha_{2} \text{Size} + \alpha_{3} \text{SalesGrowth}\% + \alpha_{4} \text{ROA} + \alpha_{5} \text{Leverage} \\ + \alpha_{6} \text{TA} + \alpha_{7} \text{TA} \times \text{TAsign} + \alpha_{8} \text{LossCarryforwards} + \alpha_{9} \text{Big4Auditor} + \epsilon. \end{split}$$

$$\begin{aligned} \mathsf{ATI} &= \alpha_{o} + \alpha_{1} \mathsf{Public} + \alpha_{2} \mathsf{Size} + \alpha_{3} \mathsf{SalesGrowth}\% + \alpha_{4} \mathsf{ROA} + \alpha_{5} \mathsf{Leverage} + \alpha_{6} \mathsf{TA} \\ &+ \alpha_{7} \mathsf{TA} \times \mathsf{TAsign} + \alpha_{8} \mathsf{LossCarryforwards} + \alpha_{9} \mathsf{BTD} + \alpha_{10} \mathsf{Big4Auditor} + \alpha_{10} \mathsf{Inverse} \text{ Mills ratio} + \epsilon \end{aligned}$$

Variable definitions: *BTD* is calculated as the discrepancy between the pretax book income and the taxable income (before loss carryforwards) reported in the tax return. *ATI* is the Additional Taxable Income determined for these firms by the tax authorities. Public is an indicator variable that equals 1 if the firm is public, and 0 otherwise. Size is the log of total assets. *SalesGrowth*% is the percentage of change in annual sales. *ROA* is *EBITDA* divided by total assets. *Leverage* is the ratio of total liabilities less current liabilities to total assets. *TA* is total accruals measured as the change in current assets, minus the change in current liabilities, minus depreciation, scaled by lagged total assets. *TAsign* is an indicator variable that equals 1 if *TA* are positive, and 0 otherwise. Thus, the interaction variable *TA* × *TAsign* is total accruals, if total accruals > 0, and 0 otherwise. *LossCarryforwards* is net operating losses that can be offset against taxable income. *Big4Auditor* equals 1 if the auditor is a Big4 audit firm, and 0 otherwise. *Inverse Mills ratio* is computed using the estimates of a first-stage Probit model (following Heckman, 1979) that models the probability that a firm will be selected for a tax audit.

*,**, and *** indicate significance levels (two-tailed) of 10%, 5%, and 1%, respectively.

profitability, and negatively related to its financial leverage. Hanlon (2005) and Lev and Nissim (2004) provide evidence that *BTD*s are systematically related to earnings growth and earnings persistence. The negative relationship with leverage is also supported by previous findings showing that tax shelter firms are less leveraged than their control sample (e.g., Frank et al., 2009; Graham & Tucker, 2006; Lisowsky, 2010; Wilson, 2009). A possible explanation for the negative relationship is that tax sheltering and debt have a substitution effect, as both vehicles result in lower taxable income. The coefficient on

LossCarryforwards is negative (-0.075), indicating that larger offset losses reduce the need or motivation for tax avoidance, as these losses are deducted from the annual pretax book income when calculating the taxable income. Finally, the coefficients on the size and sign of *TA* (the *TA* and *TA* × *TAsign* variables, respectively) are insignificantly positive, implying that the firms' *BTDs* are not significantly related to accrual quality or to the direction of the accruals. The inferences from the *BTD* regression of the nonaudited firms are consistent with those obtained for the audited firms, indicating that the latter are not sample-selection drawn results.

The results for the ATI regression presented in Table 2 indicate that, after controlling for other factors potentially affecting the level of ATI, the difference between private and public firms with regard to ATI (see Table 1) becomes insignificant. As per the ATI, tax reporting aggressiveness is not directly affected by the firm's being private rather than public or vice versa, implying that the differences between private and public firms with regard to the BTD may not reflect a tax avoidance activity (see also Mills & Newberry, 2001). The results from the multivariate model also show that ATI is negatively related to the firm's size, and positively related to its growth and profitability. Furthermore, ATI is positively related to *LossCarryforwards* and *BTD*. A possible explanation for the positive relationship with LossCarryforwards is that firms may offset losses that are not allowed to be offset as per the tax rules. The positive relationship with *BTD* may be explained by the tighter scrutiny applied by the tax authorities to larger *BTD* firms as shown in prior research. Interestingly, we find evidence for a significantly positive relationship between ATI and Big4Auditor. Given that the BTD is not found to be related to the identity of the firm's auditors, and that the ATI that is determined for private firms in their final tax assessment is no different than that of public firms, it may be that regardless of whether Big4 auditors were involved in the tax planning, the tax assessor dealing with the tax reports of a Big4 auditee is, at the outset, more suspicious of tax sheltering activity. This suspicion may lead to higher ATIs.³⁰

As for the relationship between book earnings management and our *ex-post* measure of tax planning, both coefficients on the level and the sign of *TA* are statistically insignificant. Importantly, the coefficient on the *Inverse Mills ratio* variable is not significantly different from 0, and hence there is no empirical evidence that self-selection affects our inferences.

The main result thus far is that book earnings management is not significantly related to tax planning in our sample. Specifically, after controlling for incentives for book earnings and tax manipulations, total accruals are not related to either *BTD* or *ATI*.

Additional Tests

To further validate our finding of the lack of a relationship between book earnings management and tax planning, we conduct various robustness checks. First, we repeat the analyses using the three alternative measures of book earnings management from the literature, DA, PMA, and NOA. The results (untabulated) remain qualitatively similar when we replace TAwith these other three proxies for book earnings management. Second, to validate that the finding that firms did not overstate earnings is not a result of a small sample size, we compute our four measures of book earnings management using a sample of all Israeli public companies (excluding financial and utility firms) listed on the Tel Aviv Stock Exchange (TASE) during the sample period; in all, a total of 508 companies (7,112 firm-years) with sufficient information required for the calculation of the earnings management measures. Based on this sample, the median DA, PMA, TA, and NOA are -0.051, -0.046, -0.020,

		Private firms		Public firms			
	BTD BTD			BTD	BTD		
	Audited firms	Nonaudited firms	ATI	Audited firms	Nonaudited firms	ATI	
DA	0.079	-0.05 I	0.003	-0.067	-0.030	-0.019	
РМА	-0.027	-0.079	-0.027	-0.013	-0.088	0.005	
TA	-0.074	0.005	-0.049	0.124	-0.03 I	-0.082	
NOA	0.023	0.040	0.031	-0.017	0.029	0.030	

Table 3. Correlations Between Measures of Book Earnings Management and Tax Planning.

Note. This table presents the Pearson correlations between our measures of book earnings management and tax planning. *BTD* and *ATI* are as defined in Tables I and 2. *DA* is abnormal accruals derived from the modified Jones model, while *PMA* is derived from the performance-matched modified Jones model. TA is total accruals measured as the change in current assets, minus the change in current liabilities, minus the change in cash and cash equivalents, plus the change in debt included in current liabilities, minus depreciation, scaled by lagged total assets. *NOA* is nonoperating accruals based on Givoly and Hayn (2000).

*,**, and *** indicate significance levels (two-tailed) of 10%, 5%, and 1%, respectively.

and -0.080, respectively. Thus, the finding of a lack of upward earnings management is not the result of the small sample size.

Third, we use additional tests consistent with Frank et al. (2009) for the relationship between book and tax reporting aggressiveness. Initially, we compute the correlations between our book earnings management and tax planning measures. Then, we examine the median values of book earnings management (tax planning) by quintile of our tax planning (book earnings management) measures. Lastly, we examine the frequency of firms across each quintile combination of a measure of book earnings management and a measure of tax planning. The tests are conducted for private firms and public firms separately.

Table 3 shows the Pearson correlations between our book earnings management and tax planning measures.³¹ The results are consistent with those obtained from the multivariate regressions analysis. Specifically, as the table shows, the correlations between each of the book earnings management measures and each of the tax planning measures are statistically insignificant, for private as well as for public firms, and for tax-audited as well as for non-audited firms. We note that the book earnings management measures are highly positively correlated among themselves (all pairs are above 0.5, p < 1%, for the private as well as for the public sample). The two tax planning measures, *BTD* and *ATI*, are also significantly positively correlated (.360 for private and .179 for public firms, p < 1%).

Table 4 shows the median values for our nonempirical measures of book earnings management (*TA* and *NOA*) by quintile of tax planning measures (*BTD* and *ATI*) and vice versa. The results reported in Panel A are for private firms, and those reported in Panel B are for public firms. We did not find evidence for a consistent pattern in the behavior of book earnings management by quintile of tax planning measures, nor did we find a pattern for the behavior of tax planning by quintile of earnings management measures, regardless of the firm's being subject to a tax audit. Finally and consistently, we examine the frequency of firms across each quintile combination of *TA* and *BTD*, *TA* and *ATI*, *NOA* and *BTD*, and *NOA* and *ATI* and do not identify any pattern that could indicate a relationship between book and taxable income management either for private or for public firms,

Panel A: Private Firms.						
		QI	Q2	Q3	Q4	Q5
BTD _{audited} quintiles	TA	-0.057	0.023	-0.019	-0.024	0.002
•	NOA	-0.048	-0.006	-0.019	-0.023	0.002
BTD _{nonaudited} quintiles	TA	-0.069	-0.057	-0.016	-0.035	-0.038
•	NOA	-0.045	0.024	-0.092	-0.084	0.015
ATI quintiles	TA	-0.034	-0.020	-0.012	0.025	-0.030
	NOA	-0.014	-0.008	-0.004	-0.019	-0.019
TA quintiles	BTD _{audited}	0.048	0.020	0.057	0.026	0.054
	BTD nonaudited	-0.427	-0.094	0.014	-0.014	0.011
	ATI	0.018	0.013	0.009	0.014	0.019
NOA quintiles	$BTD_{audited}$	0.035	0.123	0.050	0.039	0.146
	BTD nonaudited	0.036	-0.035	-0.023	0.020	-0.039
	ATI	0.015	0.012	0.011	0.008	0.012
Panel B: Public Firms.						
		QI	Q2	Q3	Q4	Q5
BTD _{audited} quintiles	ТА	-0.040	0148	-0.006	-0.049	-0.029
	NOA	-0.038	-0.024	-0.015	-0.03 I	-0.028
BTD _{nonaudited} quintiles	TA	-0.030	-0.082	-0.019	-0.006	0.076
	NOA	-0.045	-0.083	-0.113	-0.085	-0.065
ATI quintiles	TA	-0.022	-0.045	0.001	-0.06 I	-0.009
	NOA	-0.027	-0.032	-0.027	-0.018	-0.028
TA quintiles	BTD _{audited}	0.009	0.068	0.034	0.058	0.031
	BTD nonaudited	0.000	-0.016	-0.001	0.115	0.015
	ATI	0.008	0.008	0.006	0.006	0.012
NOA quintiles	BTD _{audited}	0.041	0.059	0.056	0.043	0.021
	BTD _{nonaudited}	0.013	0.004	0.002	0.000	0.005
	ATI	0.008	0.006	0.013	0.006	0.009

Table 4. Distribution of Median Values of Book Earnings Management (Tax Planning) AcrossQuintiles of Tax Planning (Book Earnings Management).

Note. BTD, ATI, TA, and NOA are as defined in Tables 2 and 3.

regardless of the firm's being subject to a tax audit (untabulated). We repeat all of the analyses using *DA* and *PMA* and obtain consistent inferences.

Thus, for both private and public firms, we find no evidence of income-increasing management (i.e., earnings overstatement, which is the most common type of earnings fraud, see for example, K. Jones et al., 2008). For firms that were subject to a tax audit, the *BTD* and *ATI* measures indicate these firms understated their earnings for tax purposes, while at the same time, and using the same auditors,³² they seem to have reported their book earnings in accordance with accepted accounting principles, or even more conservatively (particularly the public firms, see Table 1). Given that the tax rules in Israel are not fully aligned with the accounting rules, managers were *not* compelled entirely to avoid managing book earnings upward to reduce tax payments. In contrast, in the U.S. case, Frank et al. (2009) indeed find evidence that managers take advantage of the broad areas of book-tax nonconformity to manage book income upward while managing taxable income downward. Furthermore, the prevailing concentrated corporate governance structure of closely held firms in Israel would have made us expect to find more aggressive financial reporting. Given that the managers have not done so, an important practical implication of our results is that full alignment between tax rules and accounting rules is not a compulsory condition for them to reduce their opportunistic (reporting) behavior. A reduction in the divergence between the tax rules and the accounting rules in countries with large book-tax nonconformity such as the United States may suffice. Notably, public firms do not differ from private firms in this regard.

Conclusion

This study is motivated by the revelations of massive accounting frauds and aggressive tax planning during the past decade, by the growing book-tax gap, and by the gap in the literature with respect to the relationship between financial and tax manipulations in private companies in particular.

The growing gap between the income reported to shareholders and the income reported to the tax authorities may indicate that (a) firms are more aggressive in their financial reporting, or (b) firms are more aggressive in their tax reporting, or (c) both. Our study shows that for a sample of Israeli firms, operating under a moderate level of book-tax conformity, tax reporting aggressiveness is not related to financial reporting aggressiveness. Firms that the tax authorities determined had understated their earnings to avoid taxes did not overstate their book earnings. Using a two-stage Heckman (1979) approach and repeating our tests for a control sample of firms that were not subject to tax audits over the research period, we validate that self-selection does not affect our inferences. Furthermore, a comparison between private and public firms indicates that private firms do not seem to be significantly different from public firms in the quality of reported book earnings or in tax planning. Consistently, there is no robust evidence for a Big4 auditors' (who generally audit public firms) effect on the quality of reported earnings-in the books or in the tax returns. Hence, the significant positive relationship found between Big4 auditors and the additional taxable income determined by the tax assessor implies that regardless of whether Big4 auditors were involved in tax planning, the tax assessor dealing with the tax reports of a Big4 auditee is, at the outset, more suspicious of tax sheltering activity.

Our research should be useful to legislators, regulators and investors, as it presents evidence that managers of private as well as of public firms do not necessarily take advantage of the ability to manage both book income and taxable income in the same reporting period, even if areas of nonconformity between accounting and tax rules allow them to do so. This finding implies that managers consider the book-tax trade-offs not just when full book-tax alignment compels them to do so. Hence, the call in the United States for a substantial transition from book-tax nonconformity to full alignment to reduce managers' opportunistic (reporting) behavior may be radical. A reduction in the divergence between the tax and the accounting rules may suffice.

The results are also useful to investors and academics, because they contribute to our knowledge about financial and tax reporting aggressiveness, using private information from public and private firms, which is generally unavailable to investors or researchers. In addition, our findings should be useful to financial statement users in general as well as to regulators in assessing the involvement of auditors in financial and tax manipulations. Such an assessment is essential following the revelations of financial scandals in large corporations audited by large accounting firms and the enactment of the Sarbanes–Oxley (SOX) Act.

Future Research

Given our access to information on *real BTDs* and *ATIs*, in future research we intend to examine the efficiency of various alternative measures of tax avoidance (e.g., ETR) suggested in the literature to compensate for the lack of actual *BTD* and *ATI* data. Furthermore, in future research we also intend to explore the changes that occurred in the degree of book-tax conformity in Israel in 2008 following the adoption of IFRS and their impact on managers' reporting behavior. The growing gap between financial and taxable income has led researchers to call for an examination of the impact of a *change* in book-tax conformity in a particular country (rather than differences in book-tax conformity were adopted, Atwood et al. (2010) indicate that the ideal research design cannot be used because the United States has not switched from a book-tax conformity system to a system of nonconformity or vice versa. They suggest that this question can be examined only in a setting in which the degree of conformity has changed. Israel meets this criterion.

Appendix

Examples of the Differences Between Generally Accepted Accounting Principles (GAAP) in Israel and in the United States During the Sample Period

The accounting environment in Israel during the sample period represents a combination of the local, the United States and the international accounting standards. The order of precedence of accepted accounting standards employed was

- 1. A local standard: a standard set by the Israel Accounting Standards Board or by the Institute of Certified Public Accountants in Israel
- 2. An accepted practice: an accepted accounting standard from the U.S. GAAP
- 3. An international accounting standard
- 4. A foreign standard

In what follows we present some concrete examples of the differences between GAAP in Israel and in the United States during the sample period.³³ As the examples illustrate, the difference in a company's results as per U.S. GAAP versus Israeli GAAP is unpredictable because it depends on the specific factors in each case.

Deferred taxes. Under Israeli GAAP, deferred taxes are not provided for differences between the financial reporting and income tax basis of land and of fixed assets with depreciable lives in excess of 20 years that arise from adjustments for changes in the Israeli Consumer Price Index (CPI).

Under U.S. GAAP, deferred taxes are provided on all such differences between the financial reporting and income tax basis of land and fixed assets.

Provision for severance pay. Under Israeli GAAP, the provision for severance pay for employees who worked at the firm for more than 1 year is computed based on the final salary of the employees and according to their seniority. The liability for severance pay to employees as of the balance sheet date is covered by payments to a management insurance policy and funds included in a provision for severance pay.

Under U.S. GAAP, employees' unused sick leave is recorded as an expense in the financial statements. This expense is recorded in the financial statements based on estimates received from an external actuary, who makes estimates based on a variety of factors including retirement age and interest rates.

Derivative instruments. Under Israeli GAAP, the company accounts for its derivative instruments as hedging instruments.

Under U.S. GAAP, in accordance with the provisions of FAS 133 (as amended by FAS 137, FAS 138 and FAS 149), the company's derivative instruments do not qualify for hedge accounting. Therefore, under U.S. GAAP, changes in the fair value of the derivative instruments are carried to "gains on derivatives."

In addition, under Israeli GAAP, gains and losses on derivatives that are hedgingdeclared dividends are deducted or added to the dividend amount, whereas under U.S. GAAP, changes in the fair value of those derivatives are carried to the statements of operations.

Goodwill. Under Israeli GAAP, goodwill is amortized in equal annual installments over a period of 10 and 20 years, and reviewed for impairment when circumstances indicate the possibility that impairment exists.

Under U.S. GAAP, goodwill may not be amortized. Goodwill is to be tested for impairment on adoption of SFAS 142 and at least annually thereafter or between annual tests in certain circumstances, and written down when impaired. Goodwill attributable to a reporting unit is tested for impairment by comparing the fair value of the reporting unit with its carrying value. Fair value is determined by the company based on the market capitalization of the reporting unit.

Impairment of long-lived assets. Under Israeli GAAP, when indicators of impairment are present, the company evaluates whether the carrying amount of an asset exceeds its recoverable amount and recognizes an impairment loss for the amount by which the carrying amount of the asset exceeds its recoverable amount. The recoverable amount is defined as the higher of an asset's selling price and its value in use. Value in use is the present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal and retirement at the end of its useful life.

According to U.S. GAAP (SFAS 144—"Accounting for the Impairment or Disposal of Long-Lived Assets"), an impairment loss is recognized only if the carrying amount of an asset is not recoverable and exceeds fair value. The carrying amount is not recoverable if it exceeds the estimated undiscounted future cash flows expected to result from the use and eventual disposition of the asset. An impairment loss should be recorded for the amount by which the carrying value of the asset exceeds its fair value. As a result, when the sum of the future discounted cash flows of the long-lived assets is less than the carrying amount of such assets, but the undiscounted cash flows are more than the carrying amount, an impairment loss to be recorded under U.S. GAAP.

In addition, in accordance with Israeli GAAP, where indicators are present that beneficial events have occurred or beneficial changes in circumstances have taken place, the impairment provision with respect to the asset (other than goodwill) may be reversed in the future. In contrast, under U.S. GAAP, this impairment loss cannot be reversed in assets still in use, and the asset continues to be carried at its new cost (an impairment loss can be reversed only in assets held for sale).

Compensation expense with respect to options issued to employees. Up until 2006, the Israeli GAAP did not require the recognition of compensation expenses with respect to options issued to employees. Since 2006, with the adoption of IFRS 2 "Share-based Payment," firms are required to reflect the effects of share-based payment transactions in their profit or loss and financial positions, including expenses associated with transactions in which share options are granted to employees.

Under U.S. GAAP, accounting for employee stock options has undergone changes throughout the years. APB Opinion No. 25 "Accounting for Stock Issued to Employees," issued in 1972, utilized an intrinsic value methodology for valuing stock options granted to employees. The excess, if any, of the quoted market price of the shares at the grant date over the exercise price of the stock options was amortized to compensation expenses over the vesting period. In 1995, the Financial Accounting Standards Board (FASB) issued FAS Statement No. 123, "Accounting for Stock-Based Compensation," which established, but did not require, a fair value-based method of accounting for sharebased compensation. Following massive accounting scandals and other failures in financial reporting, in 2004 the FASB issued Statement No. 123R, "Share-Based Payment," which revised FAS 123 and superseded Opinion No. 25. FAS 123R. Based on the underlying accounting principle that compensation costs resulting from share-based payment transactions should be recognized in financial statements at fair value, the statement requires companies to report compensation expenses from employee stock options on their income statements. The amount of these expenses is based on the fair value of the employee stock options and is calculated by the firm's managers using a valuation model chosen by the company.

Acknowledgments

We have benefited from the comments of Baruch Lev, Dan Givoly, Jeffrey L. Callen, Dan Amiram, Ramy Elitzur, Dan Segal, Yaron Levy, and workshop participants at Ben-Gurion University, 2012 Annual Conference of the Multinational Finance Society (MFS), 2012 Annual Conference of the European Financial Management Association (EFMA), and 2012 Annual International Conference on Finance of the Athens Institute for Education and Research (ATINER). We are thankful to Bharat Sarath (Chief Editor, *Journal of Accounting, Auditing & Finance*) and anonymous reviewers for their excellent suggestions.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/ or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: We gratefully acknowledge the financial support of the Joseph Kasierer Institute for Research in Accounting through a research grant, and the Guilford Glazer Faculty of Business and Management at Ben-Gurion University.

Notes

1. The debate started taking off in the late 1990s and early 2000s when the gap between pretax book income that firms reported to shareholders and taxable income that firms reported to the Internal Revenue Service (IRS) increased significantly (see, for example, Desai, 2005; Guenther,

Maydew, & Nutter, 1997; Hanlon, Maydew, & Shevlin, 2008; Joint Committee on Taxation, 2006; Whitaker, 2006).

- 2. Areas of book-tax *non*conformity in the United States are much broader compared with those of Israel during the studied period (Income Tax Ordinance Amendment No. 188). Historically, European countries have generally had a much higher degree of book-tax conformity than the United States (e.g., Harris, Lang, & Moller, 1994).
- 3. Our sample period does not extend beyond 2007 because in 2008 the accounting environment in Israel changed due to the full adoption of International Financial Reporting Standards (IFRS). Prior to the adoption of IFRS, Israeli firms generally used the Israeli Generally Accepted Accounting Principles (Israeli GAAP), which was mainly influenced by the accounting principles generally accepted in the United States (U.S. GAAP) and the IFRS. After the adoption of IFRS, the level of book-tax conformity in Israel significantly decreased. In a separate study, we examine how the decrease in book-tax conformity (or the increase in book-tax nonconformity) due to the adoption of IFRS affects the ability of companies to engage in book earnings manipulation as well as tax manipulation, and the possible trade-off between the two.
- 4. Firms not selected for a tax audit do not have additional taxable incomes (ATIs).
- 5. McGill and Outslay (2004) detail the limitations of using only financial statements in detecting tax shelter activity. Plesko (2007) also finds evidence consistent with the possibility that the use of financial statement data to proxy for actual tax-related information may bias the results. According to Plesko, "... many important corporate tax attributes cannot be inferred from publicly-available financial reporting information ..." (p. 3).
- 6. An additional study that reviews tax research is that of Hanlon and Heitzman (2010) who, in addition to tax research in accounting, also review tax research in economics and finance to the extent that it is related to or is affected by research in accounting.
- 7. According to Blaylock, Shevlin, and Wilson (2012), some members of the EU opposed this proposal as they "... did not want to secede control of their tax base to a foreign entity such as the International Accounting Standards Board" (p. 8).
- 8. ITA is the Israeli IRS.
- 9. Supreme Court Appeal 494/87; www.takdin.co.il.
- 10. The public firms are traded on the Tel Aviv Stock Exchange.
- 11. See also, *future research* in the "Conclusion" section.
- The sample firms were classified into four industries, based on the industry classification of the Israeli Securities Authority. The majority of our private (public) sample firms operate in the Trading and Services industry (Real Estate), 47% (40%); followed by Real Estate (Low-Tech), 30% (29%); Low-Tech (Trading and Services), 13% (19%), and High-Tech Industries, 10% (12%).
- 13. The *ATI* measure is relevant only for our main sample of firms that were selected by the tax authorities for a tax audit. The control sample of firms that were not subject to tax audits does not have an *ATI* (for these firms, we use one measure for tax planning—the book-tax difference [*BTD*]).
- 14. Chan, Lin, and Mo (2010) find that inclusion of negative or zero BTD in their analyses causes the relationship between BTD and the magnitude of tax-audit adjustments to become insignificant (rather than positive). They refer to Mill's (1998) explanation that "negative book-tax differences are often the result of large, infrequent expenses that are not tax deductible and are thus unrelated to the magnitude of adjustments" (Chan et al., 2010, p. 69).
- 15. Tax shelter firms in the studies of Wilson (2009), Graham and Tucker (2006), and others generally refer to firms that the government has accused of tax sheltering (i.e., firms involved in tax shelter cases against the U.S. government) or firms that were served by the IRS with a notice of deficiency related to an alleged tax shelter (see also, Frank, Lynch, & Rego, 2009).
- 16. Another example of legitimate book-tax gaps is the divergence between the book income and the taxable income that results from tax laws that are aimed at encouraging firms to increase their

capital investments, for example, through accelerated depreciation (e.g., the Capital Investment Encouragement Law in Israel).

- 17. We acknowledge that measuring accruals directly from the statement of cash flows may be advantageous over the alternative measurement of the change in successive balance sheet accounts (see Hribar & Collins, 2002). However, the latter methodology is required when statements of cash flows are unavailable such as in the case of private firms.
- 18. Kothari, Leone, and Wasley (2005) explain that earnings management is related to firm performance, and therefore, the impact of performance on accruals should be accounted for when estimating abnormal (discretionary) accruals. According to Kothari et al. (2005), "Firms classified as having abnormally high or low levels of earnings management are those that manage more than would be expected given their level of performance" (p. 165).
- 19. Additional independent variables used in previous studies to augment the modified Jones model include book-to-market ratio and cash flows from operations (e.g., Larcker & Richardson, 2004). Both of these variables are unavailable for our sample of private firms.
- 20. We use "Big4 auditor" throughout the article to refer to the largest international accounting firms that existed during our sample period of 1994 to 2007. Prior to 1998, there were Big 6 accounting firms, which became the Big 5 in 1998 when Price Waterhouse merged with Coopers & Lybrand to form PricewaterhouseCoopers. In 2002, after revelations of massive accounting frauds conducted by firms audited by the Arthur Andersen accounting firm (e.g., Enron and Global Crossing), the Big 5 became the Big4 when Arthur Andersen ceased to exist as an entity.
- 21. During the sample period, the foreign exchange rate was in the range of 3 to 3.8 new Israeli shekels (NIS) per US\$1.
- 22. Chen, Chen, Cheng, and Shevlin (2010) find that, in contrast to the general conclusion of prior studies that private companies are more tax aggressive, family firms are less tax aggressive than their nonfamily counterparts. Chen et al. indicate that while family firms are similar to private firms in terms of ownership concentration, their sample of family firms are public, not private. They suggest that "the public nature of family firms gives rise to unique agency conflicts that can lead to differential nontax cost concerns and hence differential aggressiveness" (p. 43).
- 23. Shackelford and Shevlin (2001) indicate that while insider control and ownership structure are important determinants of tax aggressiveness, these factors are understudied.
- 24. $TA \times TAsign$ takes on only positive values; the coefficient on this interaction variable reflects the difference in the impact on measures of tax planning between firms with positive accruals versus firms with negative accruals. We also include the *TAsign* dummy variable in the regressions. The dummy is nonsignificant for all regressions (untabulated).
- 25. Prior studies raised concerns about the discretionary accrual measures of earnings management, advocating the use of nonempirical measures in addition to the empirical measures (e.g., Geiger, North, & O'Connell, 2005; K. Jones, Krishnan, & Melendrez, 2008; Kothari et al., 2005). K. Jones et al. (2008) conduct a comprehensive evaluation of "the ability of the popular discretionary accruals models to detect extreme cases of earnings management." They find that discretionary accrual measures have no incremental contribution beyond total accruals (TA)—"a low-cost alternative to discretionary accruals"-in detecting earnings management. In particular, they find that only accrual estimation errors, estimated from cross-sectional models of changes in working capital on past, present, and future cash flows (Dechow & Dichev, 2002), and the McNichols (2002) modification of Dechow and Dichev's (2002) model have incremental explanatory power over total accruals for both smaller and larger fraudulent events. K. Jones et al. (2008) focus on book earnings management and hence they use a sample of firms that were charged by the Securities and Exchange Commission (SEC) with having committed fraud by overstating earnings. Our sample is comparable with the smaller fraudulent events in K. Jones et al.'s study. Due to the unavailability of information on operating cash flow in our private firm sample, we were unable to use Dechow and Dichev's and McNichols' models of accrual estimation errors.

- 26. Rego (2003) reports evidence suggesting that the scale of international operations leads to more tax avoidance opportunities, resulting in lower GAAP ETRs. Lisowsky (2010) shows further that the likelihood of using a tax shelter is negatively related to leverage. We find consistent results.
- 27. Chan et al. (2010) include three additional explanatory variables in their model: the number of years the firm has been listed on the market, the percentage of shares owned by the government and an indicator variable set equal to 1 if the firm issued B-shares, and 0 otherwise. These variables are not relevant for our sample of private firms.
- 28. Our results for the first-stage estimation of the Probit regression correspond to those obtained by Chan et al. (2010) for the moderate book-tax conformity period in China (1998-2000).
- 29. Firms that were not subject to tax audits had no *ATIs*. Thus, the *ATI* regression is relevant only for tax-audited firms.
- 30. In a multivariate analysis of the effect of a Big4 auditor on book earning management (untabulated), after controlling for the effect of accrual drivers such as size, growth, profitability and leverage, we do not find a significant impact of Big4 auditors on any of our four earnings management measures. This result holds for public as well as for private firms.
- 31. Spearman correlations provide similar qualitative results.
- 32. For all of our sample firms, the auditors of the financial statements were also the ones preparing the tax returns. During the sample period, there was a partial implementation of Sarbanes–Oxley (SOX) Act in Israel. Implementation of the requirement that tax-consulting services be separated from auditing services (i.e., the firm's auditor cannot provide tax consulting) was first carried out in 2008.
- 33. Examples are extracted from the annual statements of Israeli firms that were dually listed in Israel as well as in the United States during the sample period. The U.S. SEC requires that the dual firms that report their financial statements in accordance with GAAP other than U.S. GAAP include a note of reconciliation of the results according to the local GAAP with the results according to U.S. GAAP. In addition, a firm must indicate the accounting principles (e.g., Israel GAAP or U.S. GAAP) according to which it prepares its financial statements in Note 1 of the financial statements: "Accounting Policies.".

References

- Atwood, T., Drake, M., & Myers, L. (2010). Book-tax conformity, earnings persistence and the association between earnings and cash flows. *Journal of Accounting and Economics*, 50, 111-125.
- Badertscher, B., Phillips, J., Pincus, M., & Rego, S. (2009). Earnings management strategies: To conform or not to conform? *Accounting Review*, 84, 63-98.
- Ball, R., Kothari, S., & Robin, A. (2000). The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics*, 29, 1-51.
- Ball, R., Robin, A., & Wu, J. S. (2003). Incentives versus standards: Properties of accounting income in four East Asian countries and implications for acceptance of IAS. *Journal of Accounting and Economics*, 36, 235-270.
- Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: Comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39, 83-128.
- Becker, C. L., DeFond, M. L., Jiambalvo, J., & Subramanyam, K. R. (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research*, 15, 1-24.
- Blaylock, B., Shevlin, T., & Wilson, R. (2012). Tax avoidance, large positive temporary book-tax differences and earnings persistence. *Accounting Review*, 87, 91-120.
- Burgstahler, D., & Eames, M. (2003). Earnings management to avoid losses and earnings decreases: Are analysts fooled? *Contemporary Accounting Research*, 20, 253-294.
- Burgstahler, D., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *Accounting Review*, 81, 983-1016.
- Chan, K. H., Lin, K. Z., & Mo, P. L. L. (2010). Will a departure from tax-based accounting encourage tax noncompliance? Archival evidence from a transitory economy. *Journal of Accounting and Economics*, 50, 58-73.

- Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). Are family firms more tax aggressive than nonfamily firms? *Journal of Financial Economics*, 95, 41-61.
- Cloyd, C. B. (1995). The effects of financial accounting conformity on recommendations of tax preparers. *Journal of the American Taxation Association*, 17, 50-70.
- Cloyd, C. B., Pratt, J., & Stock, T. (1996). The use of financial accounting choice to support aggressive tax positions: Public and private firms. *Journal of Accounting Research*, *34*, 23-43.
- DeAngelo, L. (1981). Auditor size and audit quality. *Journal of Accounting and Economics*, *3*, 183-199.
- Dechow, P. M., & Dichev, I. (2002). The quality of accruals and earnings: The role of accrual estimation errors. Accounting Review, 77, 35-59.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. Accounting Review, 70, 193-225.
- De Franco, G., Gavious, I., Jin, J., & Richardson, G. D. (2011). Do private company targets that hire Big4 auditors receive higher proceeds? *Contemporary Accounting Research*, 28, 215-262.
- Desai, M. A. (2003). The divergence between book and tax income. In J. M. Poterba (Ed.), Tax policy and the economy (Vol. 17, pp. 169-206). Cambridge, MA: MIT Press.
- Desai, M. A. (2005). The degradation of reported corporate profits. Journal of Economic Perspectives, 19, 171-192.
- Desai, M. A. (2006, May 9). Reform alternatives for the corporate tax. Testimony before the Subcommittee on Select Revenue Measures, Committee on Ways and Means, House of Representatives. Retrieved from http://www.people.hbs.edu/mdesai/DesaiTestimony050906%20% 282%29.pdf
- Desai, M. A., & Dharmapala, D. (2006). Corporate tax avoidance and high powered incentives. *Journal of Financial Economics*, 79, 145-179.
- Desai, M. A., & Dharmapala, D. (2009). *Earnings management, corporate tax shelters and book-tax alignment* (Working paper). Boston, MA: Harvard Business School.
- Erickson, M., Hanlon, M., & Maydew, E. (2004). How much will firms pay for earnings that do not exist? Evidence of taxes paid on allegedly fraudulent earnings. *Accounting Review*, 79, 387-408.
- Frank, M. M., Lynch, L. J., & Rego, S. O. (2009). Tax reporting aggressiveness and its relation to aggressive financial reporting. *Accounting Review*, 84, 467-496.
- Gavious, I. (2009). An empirical analysis of analyst reaction to the extent and direction of earnings managements. *International Research Journal of Finance and Economics*, 27, 145-167.
- Geiger, M. A., North, D. S., & O'Connell, B. T. (2005). The auditor-to-client revolving door and earnings management. *Journal of Accounting, Auditing and Finance, 20*, 1-26.
- Givoly, D., & Hayn, C. (2000). The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? *Journal of Accounting and Economics*, 29, 287-320.
- Graham, L., & Tucker, A. (2006). Tax shelters and corporate debt policy. Journal of Financial Economics, 81, 563-594.
- Guenther, D. A., Maydew, E. L., & Nutter, S. E. (1997). Financial reporting, tax costs and book-tax conformity. *Journal of Accounting and Economics*, 23, 225-248.
- Hanlon, M. (2005). The persistence and pricing of earnings, accruals, and cash flows when firms have large book-tax differences. Accounting Review, 80, 137-166.
- Hanlon, M., & Heitzman, S. (2010). A review of tax research. Journal of Accounting and Economics, 50, 127-178.
- Hanlon, M., Maydew, E., & Shevlin, T. (2008). An unintended consequence of book-tax conformity: A loss of earnings informativeness. *Journal of Accounting and Economics*, *46*, 294-311.
- Harris, T., Lang, M., & Moller, H. P. (1994). The value relevance of German Accounting Measures: An empirical analysis. *Journal of Accounting Research*, *32*, 187-209.
- Heckman, J. J. (1979). Sample selection bias as a specification error. Econometrica, 47, 153-162.
- Hribar, P., & Collins, D. W. (2002). Errors in estimating accruals: Implications for empirical research. Journal of Accounting Research, 40, 105-134.

- Israel Income Tax Authority. (2012). Income Tax Ordinance Amendment No. 188. Retrieved from http://oknesset.org/committee/meeting/5428/
- Joint Committee on Taxation. (2006, May 8). Present law and background relating to corporate tax reform: Issues of conforming book and tax income and capital cost recovery (JCX-16-06). Available from www.jct.gov/
- Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29, 193-228.
- Jones, K., Krishnan, G., & Melendrez, K. (2008). Do models of discretionary accruals detect actual cases of fraudulent and restated earnings? An empirical analysis. *Contemporary Accounting Research*, 25, 499-531.
- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39, 163-197.
- Larcker, D. F., & Richardson, S. A. (2004). Fees paid to audit firms, accrual choices and corporate governance. *Journal of Accounting Research*, 42, 625-656.
- Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: An international comparison. *Journal of Financial Economics*, 69, 505-527.
- Lev, B., & Nissim, D. (2004). Taxable income, future earnings, and equity values. Accounting Review, 79, 1039-1074.
- Lin, K., Mills, L., & Zhang, F. (2012). *The tradeoff between tax savings and financial reporting costs: Public versus private firms in China* (Working Paper). Austin: University of Texas at Austin.
- Lisowsky, P. (2010). Seeking shelter: Empirically modeling tax shelters using financial statement information. Accounting Review, 85, 1693-1720.
- McGill, G., & Outslay, E. (2004). Lost in translation: Detecting tax shelter activity in financial statements. *National Tax Journal*, 57, 739-756.
- McNichols, M. F. (2002). Discussion of "the quality of accruals and earnings: The role of accrual estimation errors. *Accounting Review*, 77, 61-69.
- Mills, L. F. (1998). Book-tax differences and Internal Revenue Service adjustments. *Journal of Accounting Research*, *36*, 343-356.
- Mills, L. F., & Newberry, K. J. (2001). The influence of tax and nontax costs on book-tax reporting differences: Public and private firms. *Journal of the American Taxation Association*, 23, 1-19.
- Phillips, J., Pincus, M., & Rego, S. (2003). Earnings management: New evidence based on deferred tax expense. Accounting Review, 78, 491-521.
- Plesko, G. (2007). *Estimates of the magnitude of financial and tax reporting conflicts* (Working Paper). Storrs: University of Connecticut.
- Raman, K., & Shahrur, H. (2008). Relationship-specific investments and earnings management: Evidence on corporate suppliers and customers. *Accounting Review*, 83, 1041-1081.
- Rego, S. (2003). Tax-avoidance activities of US multinational corporations. *Contemporary Accounting Research*, 20, 805-833.
- Schön, W. (2005). The odd couple: A common future for financial and tax accounting. Tax Law Review, 58, 111-148.
- Shackelford, A. D., & Shevlin, T. (2001). Empirical tax research in accounting. Journal of Accounting and Economics, 31, 321-387.
- Van Tendeloo, B. (2008). Audit quality and tax-induced earnings management in UK private firms (Working Paper). Antwerp, Belgium: University of Antwerp.
- Van Tendeloo, B., & Vanstraelen, A. (2008). Earnings management and audit quality in Europe. European Accounting Review, 17, 447-469.
- Weisbach, D. (2002). Thinking outside the boxes: A response to Professor Schlunk. *Texas Law Review*, 80, 893-911.
- Whitaker, L. (2006). Forecasting the resurgence of the U.S. economy in 2010: An expert judgment approach. *Socio-economic Planning Sciences*, 44, 114-121.
- Wilson, R. (2009). An examination of corporate tax shelter participants. *Accounting Review*, 84, 969-999.