

Supplementary Appendix for Online Publication

”How to Account for Tax Planning and Its Uncertainty in Firm Valuation?”

A. Additional Statistics and Robustness Tests

A.1. Point Estimates Dependent on Control Settings

Table A.1 shows the various control settings used to create tables A.2 and A.3, the results of which are shown in the main paper in Figures 2 (for the separate view) and 3 (for the composite view). The settings are oriented on previous studies that touch on the main issues of the paper, and vary considerably. In some cases, the settings were adjusted because the focus of the selected studies deviated slightly from directly examining the value implications of TP (e.g., the book-to-market ratio was not included because the inverse of this measure is the dependent variable).

Table A.4 (A.5) contains the results of the same exercise when the CETR is used instead of the GETR as the TP measure for the separate (composite) view. In general, the observations from the GETR analyses also apply to the CETR. When using the latter, the coefficient estimates become even more unstable, as shown in Figures A.1 and A.2.

Table A.1: Control variables oriented on prior literature

Oriented on	Control Variables
Ammann et al. (2011)	Total Assets; Property, Plant and Equipment; Leverage; Ebitda; Cash; Sales Growth; Research and Development; Capital Expenditures
Chen et al. (2014)	Total Assets; Property, Plant and Equipment; Leverage; Sales Growth; Beta; Return on Assets
Cook et al. (2017)	Total Assets; Property, Plant and Equipment; Dividend Yield; Leverage; Sales Growth; Return on Assets; Price Volatility; Ebitda Volatility; Research and Development; Capital Expenditures
De Simone and Stomberg (2012)	Sales; Sales Growth; Leverage; Return on Assets; Price Volatility; Research and Development; Capital Expenditures
Goh et al. (2016)	Market Value; Leverage; Ebitda; Sales Growth; Beta; Stock Return; Price Volatility; Ebitda Volatility; Capital Expenditures
Guenther et al. (2017)	Total Assets; Leverage; Ebitda; Ebitda Volatility; Cashflow Volatility
Hasan et al. (2014)	Total Assets; Leverage; Sales Growth; Return on Assets; Cash; Property, Plant and Equipment; Ebitda Ebitda Volatility
Heitzman and Ogneva (2019)	Total Assets; Property, Plant and Equipment; Leverage; Stock Return; Price Volatility; Research and Development; Capital Expenditures
Kim et al. (2011)	Market Value; Sales; Leverage; Return on Assets; Stock Return; Price Volatility
Pratama (2018); Saragih (2017)	Total Assets; Leverage; Return on Assets
Santana and Rezende (2016)	Sales; Property, Plant and Equipment; Long Term Debt; Cashflow
Sikes and Verrecchia (2020)	Market Value, Leverage; Return on Equity; Beta; Dividend Yield
Yee et al. (2018)	Total Assets; Leverage; Sales Growth; Return on Assets; Return on Equity

Table A.2: Separate View – Control Settings

Notes: This table reports the point estimates that are shown in Figure 2 for regression Eq. 8 with different control settings. The dependent variable is the price-to-book ratio, while *TP* and *TU* are based on the *GETR*. Column (1) refers to the control setting following Ammann et al. (2011), column (2) Chen et al. (2014), column (3) Cook et al. (2017), column (4) De Simone and Stomberg (2012), column (5) Goh et al. (2016), column (6) Guenther et al. (2017), column (7) Hasan et al. (2014), column (8) Heitzman and Ogneva (2019), column (9) Kim et al. (2011), column (10) Pratama (2018); Saragih (2017), column (11) Santana and Rezende (2016), column (12) Sikes and Verrecchia (2020), and column (13) Yee et al. (2018). All specifications include year and firm fixed effects. Standard errors are reported in parentheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>TP</i>	-0.001 (1.333)	-1.075 (0.807)	-1.211 (1.217)	-0.811 (1.282)	-1.419** (0.679)	-0.659 (0.836)	-0.391 (0.866)
<i>TU</i>	-0.515 (1.125)	0.382 (0.618)	0.554 (1.015)	-0.939 (1.077)	1.034** (0.505)	0.446 (0.618)	0.799 (0.641)
<i>TP#TU</i>	-4.386 (2.787)	2.015 (1.546)	-0.346 (2.511)	-4.308 (2.668)	2.098* (1.264)	2.024 (1.548)	2.580 (1.614)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	915	2,033	906	942	1,941	1,941	1,853
R-squared	0.331	0.230	0.469	0.404	0.483	0.219	0.231

Variable	(8)	(9)	(10)	(11)	(12)	(13)
<i>TP</i>	-0.696 (1.317)	-1.493** (0.672)	-1.058 (0.808)	-0.702 (0.824)	-1.824*** (0.621)	-1.166 (0.735)
<i>TU</i>	-0.734 (1.102)	0.572 (0.515)	0.390 (0.617)	0.014 (0.630)	0.956** (0.474)	0.520 (0.561)
<i>TP#TU</i>	-3.113 (2.739)	1.159 (1.287)	2.061 (1.543)	1.683 (1.577)	1.922 (1.187)	2.380* (1.405)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	942	2,035	2,035	2,024	2,035	2,035
R-squared	0.378	0.466	0.226	0.196	0.544	0.360

Table A.3: Composite View – Control Settings

Notes: This table reports the point estimates that are shown in Figure 3 for regression Eq. 9 with different control settings. The dependent variable is the price-to-book ratio, while the *TPS* is based on the *GETR*. Column (1) refers to the control setting following Ammann et al. (2011), column (2) Chen et al. (2014), column (3) Cook et al. (2017), column (4) De Simone and Stomberg (2012), column (5) Goh et al. (2016), column (6) Guenther et al. (2017), column (7) Hasan et al. (2014), column (8) Heitzman and Ogneva (2019), column (9) Kim et al. (2011), column (10) Pratama (2018); Saragih (2017), column (11) Santana and Rezende (2016), column (12) Sikes and Verrecchia (2020), and column (13) Yee et al. (2018). All specifications include year and firm fixed effects. Standard errors are reported in parentheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>PI</i>	6.898*** (0.531)	5.895*** (0.338)	5.574*** (0.521)	6.613*** (0.533)	5.655*** (0.316)	5.549*** (0.329)	5.931*** (0.348)
<i>TPS</i>	-0.011*** (0.004)	-0.006*** (0.002)	-0.013*** (0.003)	-0.015*** (0.003)	-0.005*** (0.002)	-0.005** (0.002)	-0.005** (0.002)
<i>TPS#PI</i>	0.057*** (0.010)	0.045*** (0.006)	0.056*** (0.010)	0.064*** (0.010)	0.026*** (0.005)	0.038*** (0.006)	0.039*** (0.006)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	915	2,033	906	942	1,941	1,941	1,853
R-squared	0.477	0.393	0.560	0.524	0.584	0.379	0.393

Variable	(8)	(9)	(10)	(11)	(12)	(13)
<i>PI</i>	5.348*** (0.384)	5.736*** (0.274)	5.911*** (0.337)	5.092*** (0.279)	4.124*** (0.228)	5.914*** (0.338)
<i>TPS</i>	-0.012*** (0.003)	-0.007*** (0.001)	-0.006*** (0.002)	-0.005*** (0.002)	-0.005*** (0.002)	-0.006*** (0.002)
<i>TPS#PI</i>	0.058*** (0.009)	0.035*** (0.005)	0.046*** (0.006)	0.043*** (0.006)	0.029*** (0.005)	0.046*** (0.006)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	942	2,035	2,035	2,024	2,035	2,035
R-squared	0.557	0.599	0.392	0.388	0.551	0.392

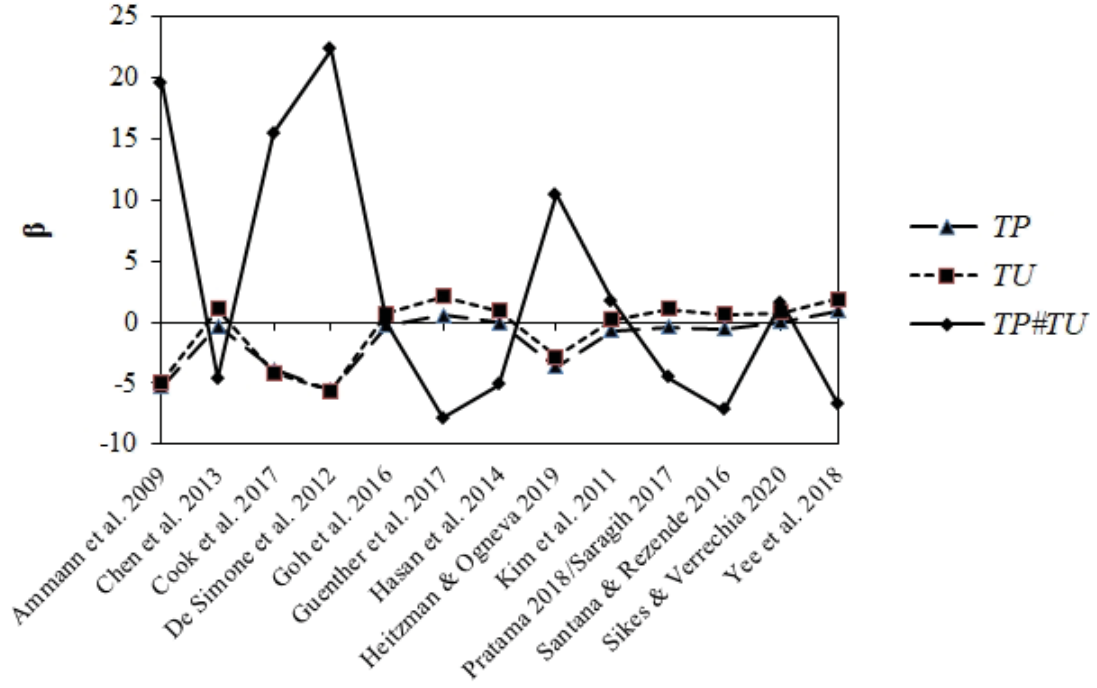


Figure A.1: Separate View CETR – Control Settings

Note: This figure presents the results from performing regressions for the separate view (Eq. 8) with altering control variables using the *CETR*. The x-axis shows the applied control setting (Table A.1). Coefficient estimates for *TP*, *TU*, and their interaction are denoted on the y-axis (Table A.4 in Appendix A). All main variables are defined as in the baseline analysis and are described in more detail in Table 1.

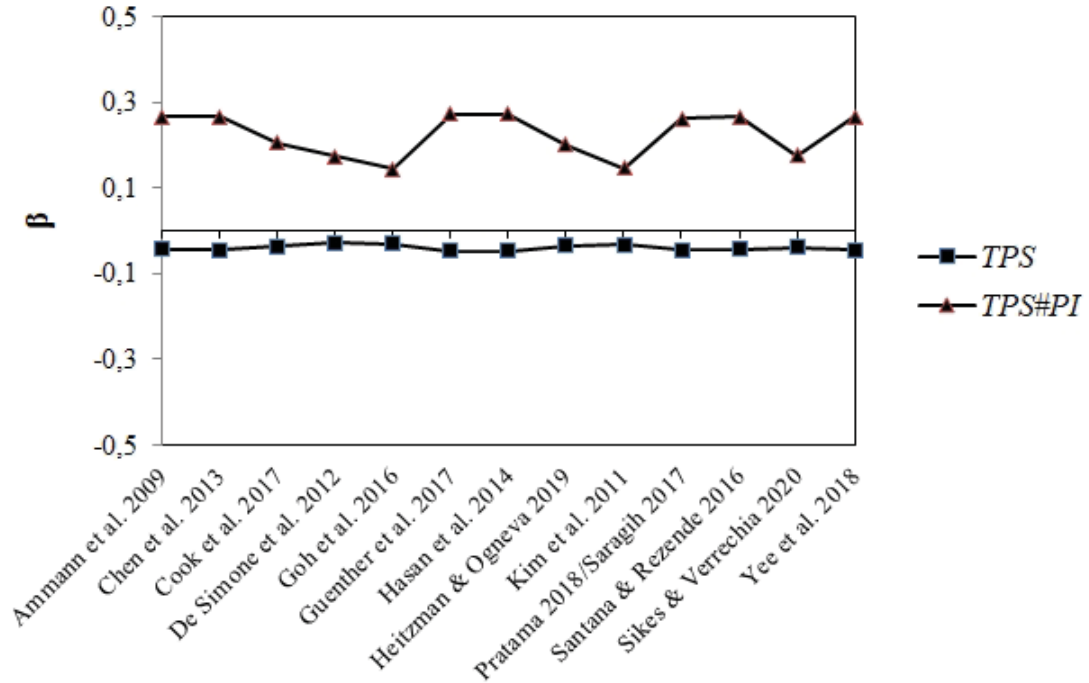


Figure A.2: Composite View CETR – Control Settings

Note: This figure presents the results from performing regressions for the composite view (Eq. 9) with altering control variables using the *TPS* based on the *CETR*. The x-axis shows the applied control setting (Table A.1). Coefficient estimates for *TPS*, and the interaction with *PI* are denoted on the y-axis (Table A.5 in Appendix A). All main variables are defined as in the baseline analysis and are described in more detail in Table 1.

Table A.4: Separate View CETR – Control Settings

Notes: This table reports the point estimates that are shown in Figure A.1 for regression Eq. 8 with different control settings. The dependent variable is the price-to-book ratio, while the *TP* and *TU* are based on the *CETR*. Column (1) refers to the control setting following Ammann et al. (2011), column (2) Chen et al. (2014), column (3) Cook et al. (2017), column (4) De Simone and Stomberg (2012), column (5) Goh et al. (2016), column (6) Guenther et al. (2017), column (7) Hasan et al. (2014), column (8) Heitzman and Ogneva (2019), column (9) Kim et al. (2011), column (10) Pratama (2018); Saragih (2017), column (11) Santana and Rezende (2016), column (12) Sikes and Verrecchia (2020), and column (13) Yee et al. (2018). All specifications include year and firm fixed effects. Standard errors are reported in parentheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>TP</i>	5.230*** (1.896)	0.287 (1.217)	3.869** (1.580)	5.523*** (1.675)	0.213 (0.952)	-0.602 (1.203)	0.060 (1.276)
<i>TU</i>	-4.860** (2.181)	1.073 (1.418)	-4.156** (1.848)	-5.636*** (1.959)	0.709 (1.100)	2.121 (1.393)	0.914 (1.469)
<i>TP#TU</i>	-19.599*** (7.192)	4.630 (4.348)	-15.477** (6.006)	-22.351*** (6.444)	0.081 (3.379)	7.831* (4.241)	5.108 (4.522)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	633	1,116	618	641	1,075	1,075	1,064
R-squared	0.318	0.303	0.536	0.424	0.613	0.374	0.312

	(8)	(9)	(10)	(11)	(12)	(13)
<i>TP</i>	3.650** (1.515)	0.665 (0.926)	0.409 (1.219)	0.521 (1.276)	-0.076 (0.898)	-0.901 (1.169)
<i>TU</i>	-2.803 (1.765)	0.165 (1.082)	1.049 (1.421)	0.630 (1.498)	0.762 (1.044)	1.911 (1.357)
<i>TP#TU</i>	-10.437* (5.810)	-1.748 (3.322)	4.507 (4.354)	7.200 (4.552)	-1.567 (3.204)	6.663 (4.156)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	641	1,116	1,116	1,116	1,116	1,116
R-squared	0.535	0.598	0.296	0.230	0.626	0.363

Table A.5: Composite View CETR – Control Settings

Notes: This table reports the point estimates that are shown in Figure A.2 for regression Eq. 9 with different control settings. The dependent variable is the price-to-book ratio, while the *TPS* is based on the *CETR*. Column (1) refers to the control setting following Ammann et al. (2011), column (2) Chen et al. (2014), column (3) Cook et al. (2017), column (4) De Simone and Stomberg (2012), column (5) Goh et al. (2016), column (6) Guenther et al. (2017), column (7) Hasan et al. (2014), column (8) Heitzman and Ogneva (2019), column (9) Kim et al. (2011), column (10) Pratama (2018); Saragih (2017), column (11) Santana and Rezende (2016), column (12) Sikes and Verrecchia (2020), and column (13) Yee et al. (2018). All specifications include year and firm fixed effects. Standard errors are reported in parentheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>PI</i>	3.598*** (1.022)	1.950*** (0.594)	1.038 (0.956)	3.350*** (0.976)	3.484*** (0.574)	0.152 (0.676)	1.754*** (0.615)
<i>TPS</i>	-0.044*** (0.015)	-0.046*** (0.008)	-0.036*** (0.014)	-0.028* (0.014)	-0.031*** (0.007)	-0.048*** (0.009)	-0.047*** (0.009)
<i>TPS#PI</i>	0.267*** (0.060)	0.265*** (0.034)	0.204*** (0.054)	0.173*** (0.057)	0.143*** (0.027)	0.273*** (0.034)	0.273*** (0.035)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	633	1,116	618	641	1,075	1,075	1,064
R-squared	0.393	0.412	0.556	0.455	0.668	0.437	0.420

	(8)	(9)	(10)	(11)	(12)	(13)
<i>PI</i>	1.295*	2.569***	1.997***	2.534***	1.981***	1.983***
	(0.663)	(0.454)	(0.595)	(0.510)	(0.419)	(0.595)
<i>TPS</i>	-0.035***	-0.032***	-0.045***	-0.043***	-0.038***	-0.046***
	(0.013)	(0.006)	(0.008)	(0.009)	(0.007)	(0.008)
<i>TPS#PI</i>	0.201***	0.147***	0.262***	0.267***	0.175***	0.267***
	(0.051)	(0.026)	(0.034)	(0.034)	(0.027)	(0.034)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	641	1,116	1,116	1,116	1,116	1,116
R-squared	0.573	0.659	0.407	0.387	0.639	0.408

A.2. Robustness for Loss Analysis

Table A.6 shows the results for the loss analyses (Section 5.2 in the paper) when using the TPS based on CETR_s (columns 1 and 2), the TPS based on BT_D (columns 3 and 4), and the TPS based on PBT_D (columns 5 and 6).

Controlling for recent losses as proposed by Dyreng et al. (2021) (*Loss5*) seems to only affect the baseline results when effective tax rates are used as a measure, confirming the results in the main paper on the GET_R. The coefficients become insignificant and essentially zero, even if the TPS and the composite view is used. Using book tax differences leads to results that are not substantially altered (see also Table 6). As Henry and Sansing (2018) note, their measure is close to book tax differences, but slightly different (they find a positive correlation between D_MVA and BT_D of about 0.8). Overall, TP measures need to be carefully chosen – even in the composite view – to account for recent losses.

Table A.6: Losses Robustness – TPS on CETR and Book-Tax-Differences

Notes: This table shows the robustness results for the loss analyses as suggested by Dyreng et al. (2021) in Section 5.2. The dependent variable is the price-to-book ratio. Columns 1 and 2 show the results when calculating the *TPS* based on CETR, columns 3 and 4 when it is calculated with *BTD*, and columns 5 and 6 when it is based on *PBTD*. Columns 1, 3, 5 (2, 4, 6) include the variable *Loss5* (*Loss5%*). Standard errors are reported in parentheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

Variable	TPS (CETR)		TPS (BTD)		TPS (PBTD)	
	Loss5	Loss5%	Loss5	Loss5%	Loss5	Loss5%
<i>PI</i>	2.433*** (0.234)	2.426*** (0.234)	1.565*** (0.183)	1.576*** (0.183)	0.554 (0.494)	0.606 (0.494)
<i>TPS</i>	0.001 (0.001)	0.001 (0.001)	-0.063*** (0.012)	-0.057*** (0.012)	-0.116** (0.051)	-0.098* (0.052)
<i>TPS#PI</i>	-0.002 (0.003)	-0.002 (0.003)	0.368*** (0.037)	0.361*** (0.037)	1.160*** (0.218)	1.116*** (0.219)
<i>Loss5</i>	0.069 (0.088)		-0.098 (0.082)		-0.147 (0.150)	
<i>Loss5%</i>		0.203 (0.217)		0.349** (0.177)		0.372 (0.417)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,190	2,190	4,795	4,795	1,262	1,262
R-squared	0.270	0.270	0.228	0.228	0.467	0.467

A.3. Robustness for Heterogeneity Analyses

Table A.7 shows the results for choosing the median of the heterogeneity indicator as cutoff for the sample splits instead of 20/80 splits as in Table 9 in the main paper. The conclusions from the main text hold: The positive association between pre-tax income, the TPS, and the market-to-book ratio is statistically significant only in firms with low leverage, while the coefficients on the interaction term of TPS and PI are slightly larger for relatively small firms and firms with low cash flows.

Table A.8 shows the results for applying alternative measurement approaches to the heterogeneity dimensions: Leverage is operationalized by using long term debt only, firm size is measured by sales, and cash holdings are used instead of cash flows. As this item has a few more missings than the other variables, the observation number slightly differs from the baseline sample (1,913 observations instead of 2,035).

Table A.7: Robustness Heterogeneity – Median Splits

Notes: This table shows the results from splitting the sample at median values (instead of top 2 deciles vs. all other deciles as in Table 9) into firms with high/low leverage (columns 1-2), big and small firms (columns 3-4), and firms high high/low cash flows (columns 5-6). The dependent variable is the price-to-book ratio. Standard errors are reported in parentheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

Variable	Leverage		Large	Resources		
	High	Low		Small	High CF	Low CF
<i>PI</i>	4.616*** (0.531)	3.471*** (0.622)	4.385*** (0.566)	3.183*** (1.013)	4.404*** (0.531)	4.853*** (0.557)
<i>TPS</i>	-0.001 (0.002)	-0.012*** (0.003)	-0.005** (0.002)	-0.007*** (0.002)	-0.008*** (0.003)	-0.006** (0.002)
<i>TPS#PI</i>	0.004 (0.012)	0.047*** (0.006)	0.026*** (0.008)	0.059*** (0.009)	0.029*** (0.009)	0.042*** (0.007)
Obs.	1,018	1,017	1,018	1,017	1,018	1,017
R-squared	0.460	0.537	0.489	0.354	0.478	0.495
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table A.8: Robustness Heterogeneity – Long Term Debt, Sales, and Cash Holdings

Notes: This table shows the results from splitting the sample into firms with high/low leverage (columns 1-2), big and small firms (columns 4-5), and firms high/low cash holdings instead of cashflows as in Table 9 (columns 7-8). Column 3 (5; 7) shows the estimates when interacting $TPS\#PI$ with *Leverage*, using long-term debt (*Size*, measured as sales; *Cash*, measured as the cash holdings). The dependent variable is the price-to-book ratio. Standard errors are reported in parentheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

Variable	Leverage			Resources					
	Long Term Debt			Firm Size (Sales)			Cash Holdings		
	High	Low	Interact.	Large	Small	Interact.	High	Low	Interact.
<i>PI</i>	5.018*** (0.988)	4.148*** (0.480)	4.434*** (0.489)	9.450*** (0.793)	2.739*** (0.412)	2.281*** (0.535)	3.591** (1.467)	4.965*** (0.357)	4.668*** (0.345)
<i>TPS</i>	0.001 (0.004)	-0.011*** (0.002)	-0.010*** (0.002)	0.003 (0.004)	-0.008*** (0.002)	-0.008*** (0.003)	-0.023*** (0.008)	-0.003** (0.002)	-0.006*** (0.002)
<i>TPS#PI</i>	-0.006 (0.024)	0.048*** (0.006)	0.043*** (0.006)	0.021** (0.009)	0.039*** (0.008)	0.044*** (0.013)	0.027 (0.017)	0.023*** (0.006)	0.026*** (0.008)
<i>#Leverage</i>			-0.025 (0.044)						
<i>#Size</i>						-0.007 (0.007)			
<i>#Cash</i>									-0.005 (0.027)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	407	1,628	2,035	407	1,628	2,035	383	1,530	1,913
R-squared	0.576	0.452	0.436	0.659	0.453	0.480	0.582	0.501	0.489

B. Reconciling the Separate and Composite View

Despite the different view on the consideration of TU, Drake et al. (2019) assume a direct link between TP and FV without interactions with pre-tax income, as does Jacob and Schütt (2020). When using the *TPS* as a measure of (uncertainty weighted) TP, the separate view would imply a direct link between TPS and FV. Accordingly, the TPS can be inserted into Eq. 8 without interaction terms, yielding the following:

$$MTB_{i,t} = \beta_0 + \beta_1 TPS_{i,t} + \beta_4 PI_{i,t} + \beta_5 VolPI_{i,t} + \beta_6 PI_{i,t} \cdot VolPI_{i,t} + \beta_6 SalesGrowth_{i,t} + \beta_7 X_{i,t} + \theta_i + \gamma_t + \epsilon_{i,t}, \quad (B.1)$$

where β_1 is expected to be positive, since a higher TPS indicates either a higher level or a lower volatility of TP (or both).²³

Table B.9: TPS – Isolated

Notes: This table reports the results of estimating Eq. B.1. The TPS is calculated using the GETR over 5 years as in the baseline analyses. The dependent variable is the price-to-book ratio. Columns (1)–(3) include year fixed effects; columns (4)–(6) include year and firm fixed effects. Standard errors are reported in parentheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
<i>PI</i>	6.080*** (0.249)	7.132*** (0.438)	7.344*** (0.441)	5.812*** (0.256)	6.701*** (0.489)	7.021*** (0.496)
<i>TPS</i>	0.006*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.006*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
Risk Controls	No	Yes	Yes	No	Yes	Yes
Other Controls	No	No	Yes	No	No	Yes
Firm FE	No	No	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,035	2,035	2,035	2,035	2,035	2,035
R-squared	0.364	0.414	0.417	0.365	0.417	0.422

Table B.9 contains the results of estimating Eq. B.1. As predicted, the coefficient estimates in all columns are positive and statistically significant at the 1%-level (see also Figure 1c).

A general drawback of the TPS by construction is that one cannot be sure how a certain TPS value was achieved by a firm. For example, a firm with a TPS of 10 can either have an ETR of 0.3 and a corresponding volatility of 7%, or an ETR of 0.5 with a volatility of 5%.²⁴ By only looking at the TPS, it is unclear whether the degree of TP (numerator) or rather the TU (denominator) is the main driver behind potential FV

²³Note that Eq. 3 makes no prediction about the direct effect of the TPS on FV. However, the intuition behind the Jacob and Schütt (2020) model would imply that the TPS should be positively associated with FV. This is also supported by Figure 1, Panel 1c in the main paper.

²⁴Calculated using the *TPS* formula of Eq. 7: $(1 - 0.3)/0.07 = (1 - 0.5)/0.05 = 10$

associations. To gain more insight into this, the indirect connection of TP and FV through income channels can be modeled in the separate view by interacting TP and TU with PI and adjusting Eq. 8.²⁵ For brevity, the control vector X contains all the baseline control variables previously used in all following equations. For the sake of interpretation, I omit the triple interaction term:

$$MTB_{i,t} = \beta_0 + \beta_1 PI_{i,t} + \beta_2 TP_{i,t} + \beta_3 TU_{i,t} + \beta_4 PI_{i,t} \cdot TP_{i,t} + \beta_5 PI_{i,t} \cdot TU_{i,t} + \beta_6 X_{i,t} + \theta_i + \gamma_t + \epsilon_{i,t}, \quad (\text{B.2})$$

In Eq. B.2, β_2 and β_4 would be expected to be positive (reflecting a positive association between the level of TP and FV, as well as an amplifying impact of TP on the coefficient of PI), while β_3 and β_4 would be expected to be negative. Table B.10 contains the results of estimating Eq. B.2.

Table B.10: Separate View – Double Interaction with PI

Notes: This table reports the results from estimating Eq. B.2 similar to Jacob and Schütt (2020), p. 428, Table 6. The dependent variable is the price-to-book ratio. Columns (1)–(3) include year fixed effects; columns (4)–(6) include year and firm fixed effects. Standard errors are reported in parantheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
PI	2.725*** (0.568)	5.410*** (0.842)	5.643*** (0.843)	2.785*** (0.594)	4.519*** (0.881)	4.739*** (0.883)
TP	1.665*** (0.613)	0.665 (0.648)	0.810 (0.647)	1.531** (0.697)	0.606 (0.746)	0.606 (0.744)
TU	-0.144 (0.236)	-0.260 (0.265)	-0.219 (0.264)	-0.237 (0.241)	-0.673** (0.271)	-0.676** (0.270)
$TP\#PI$	-13.591*** (1.994)	-6.590*** (2.304)	-6.446*** (2.305)	-12.117*** (2.086)	-8.562*** (2.426)	-8.894*** (2.423)
$TU\#PI$	-1.364** (0.688)	-5.668*** (1.021)	-5.612*** (1.020)	-1.155* (0.694)	-6.170*** (1.039)	-6.224*** (1.036)
Risk Controls	No	Yes	Yes	No	Yes	Yes
Other Controls	No	No	Yes	No	No	Yes
Firm FE	No	No	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,035	2,035	2,035	2,035	2,035	2,035
R-squared	0.368	0.425	0.427	0.369	0.430	0.435

A comparison with the baseline replication of the separate view (Table 3 and the robustness tests in the main paper) shows that the coefficients for TP and TU have the expected sign and are more stable (although TP is significant only in columns 1 and 4 and

²⁵As Jacob and Schütt (2020) have already indicated, and as the replications in the main paper have shown, however, this is precisely the kind of specification that is prone to misspecification. Nevertheless, separately measuring TP and TU while indirectly connecting them to FV via income is a suitable final robustness check for this notion (see also Table 6 in Jacob and Schütt 2020, p. 428).

TU only in columns 5 and 6). The interactions with PI are significant in all columns, but the estimates for $TP\#PI$ are negative, implying that the higher the GETR, the larger the positive association between pre-tax income and FV. Lastly, interacting TP and TU with PI yields a slightly higher explanatory power of the models compared to directly linking TP and TU to FV. However, the conclusions that can be drawn from this exercise are limited. This is also supported by Table B.11, which includes the triple interaction term between TP , TU , and PI .

Table B.11: Separate View – Tripe Interaction With PI

Notes: This table reports the results from Eq. B.2 when the triple interaction of TP , TU , and PI is included. The dependent variable is the price-to-book ratio. Columns (1)–(3) include year fixed effects; columns (4)–(6) include year and firm fixed effects. Standard errors are reported in parantheses. ***, **, and * indicate significance levels of 0.01, 0.05, and 0.1, respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
PI	1.778** (0.751)	5.157*** (0.974)	5.416*** (0.975)	1.610** (0.789)	3.710*** (1.019)	3.964*** (1.021)
TP	2.097*** (0.774)	1.012 (0.791)	1.161 (0.790)	1.596* (0.888)	1.050 (0.923)	1.068 (0.920)
TU	-0.634 (0.666)	-0.717 (0.665)	-0.696 (0.665)	-0.346 (0.687)	-1.065 (0.686)	-1.101 (0.685)
$TP\#TU$	-1.448 (1.679)	-1.231 (1.619)	-1.270 (1.617)	-0.443 (1.748)	-1.199 (1.686)	-1.274 (1.682)
$TP\#PI$	-16.926*** (2.611)	-7.454*** (2.839)	-7.217** (2.837)	-16.170*** (2.744)	-11.510*** (3.049)	-11.701*** (3.043)
$TU\#PI$	2.954 (2.302)	-4.634* (2.465)	-4.734* (2.462)	4.060* (2.318)	-2.451 (2.509)	-2.704 (2.502)
$TP\#TU\#PI$	11.832** (5.994)	2.888 (5.874)	2.504 (5.867)	14.310** (6.059)	9.656 (5.983)	9.172 (5.966)
Risk Controls	No	Yes	Yes	No	Yes	Yes
Other Controls	No	No	Yes	No	No	Yes
Firm FE	No	No	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,035	2,035	2,035	2,035	2,035	2,035
R-squared	0.370	0.425	0.427	0.372	0.431	0.436

Compared to directly relating TP and TU to FV, it seems that following the residual income model as a theoretical background by interacting TP and TU with pre-tax income leads to more consistent results – even in the separate view: The coefficients for TP (TU) in Table B.11 are positive (negative), while the interaction of TP and TU is negative, as would be expected by the separate view. While the remarks regarding the size and signs of estimates for $TP\#PI$ and $TU\#PI$ from Table B.10 still hold, the most important triple interaction is positive, contrary to expectations. Moreover, the estimates are significant only in columns 1 and 4 and are very difficult to interpret economically due to the large number of interactions involved.

Overall, reconciling the separate and composite view confirms the findings from the main paper and from Jacob and Schütt (2020): (i) The composite view leads to more stable and consistent empirical results than the separate view. (ii) Measuring TP and TU separately but interacting them with pre-tax income leads to results that are slightly more stable and more consistent with Drake et al. (2019), but dependence on modeling decisions remains and interpretation of estimates becomes difficult. (iii) Despite the disadvantage of a composite measure of not being able to be sure whether the degree of TP or rather its uncertainty is more important in a valuation framework, the idea that they should be considered jointly seems to be the most consistent choice. The estimates in Tables B.10 and B.11 do not allow a reasoned conclusion as to whether TP or TU is more important because either there is no statistical significance or the gap between estimates for the two concepts is not significantly different (e.g., column 6 of Table B.10).