



## Online-Appendix

### „The Effect of Changes in Internal Control Systems on Audit Risk“

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## Appendix

Table 10: Variable Definitions

Variable	Expected Sign	Definition
$\Delta ICW$	-	Indicator variable that takes the value of 1 if a firm remediates its internal control weaknesses, and 0 otherwise
$\Delta SALE$	$\pm$	Amount of sales in $t=1$ less amount of sales in $t=0$ divided by total assets
ABAFEE	+	Abnormal audit fees estimated as residuals from the Audit Fee Model
BIG4	+	Indicator variable that takes the value of 1 if the auditor is one of the big four audit firms (KPMG, EY, Deloitte and PWC), and 0 otherwise
BUSY	+	Indicator variable that takes the value of 1 if the fiscal year ends in December, and 0 otherwise
CA	+	Current-assets ratio (total current assets divided by total assets)
CR	-	Current ratio (total current assets divided by total current liabilities)
DAC	$\pm$	Discretionary Accruals estimated as the residuals from the Total Accruals Model
DCF	$\pm$	Indicator variable that takes the value of 1 if the firm reports negative operating cash flows, 0 otherwise
EARN- INGS- GROW	+	Indicator variable that takes the value of 1 if the net income increases, 0 otherwise
FREEC	+	Demand for external financing (net cash inflow from operating activities less capital expenditures divided by lagged total assets)

<sup>167</sup> Definitions retrieved from Blankely, Hurtt and MacGregor (2012), pp. 83, 84; Eshleman and Guo (2014), p. 126; Krauß, Pronobis and Zülch (2015), pp. 80-81; Viciwati (2020), p. 797.

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Variable	Expected Sign	Description
INDCON	$\pm$	Indicator variable that takes the value of 1 if the company belongs in a specific industry, 0 otherwise
INTANG	+	Intangibles ratio (intangibles divided by total assets)
INVREC	+	Sum of inventories and receivables divided by total assets
LOSS	+	Indicator variable that takes the value of 1 if the current year's net income is negative, 0 otherwise
LEV	+	Leverage ratio (total long-term debt divided by total assets)
LNAFEE	$\pm$	Natural log of audit fees
LNSALES	+	Natural log of total sales
LNTA	+	Natural log of total assets
MERGER	+	Indicator variable that takes the value of 1 if the acquisition value is not equal to zero, 0 otherwise
OCF	$\pm$	Operating cash flow divided by total assets
OPINION	+	Indicator variable that takes the value 1 if the auditor issues a going concern audit opinion, 0 otherwise
PPE	$\pm$	Gross property, plant, and equipment amount divided by total asse
REMY1	$\pm$	Indicator variables that takes the value of 1 if a firm remediated its internal control weaknesses and it is the first year after the disclosure of the internal control weaknesses

<sup>168</sup> Definitions retrieved from Blankely, Hurtt and MacGregor (2012), pp. 83, 84; Eshleman and Guo (2014), p. 126; Krauß, Pronobis and Zülch (2015), pp. 80-81; Viciwati (2020), p. 797.

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Variable	Expected Sign	Description
REMY2	+	Indicator variables that takes the value of 1 if a firm remediated its internal control weaknesses and it is the second year after the disclosure of the internal control weaknesses
REMY3	+	Indicator variables that takes the value of 1 if a firm remediated its internal control weaknesses and it is the third year after the disclosure of the internal control weaknesses
REST	±	Indicator variable that takes the value of 1 if the firm has issued a financial statement restatement for the respective fiscal year, and 0 otherwise
ROA	-	Return on assets (EBIT divided by total assets)
TACC	±	Total accruals (net income less operating cash flows)
XSCORE	+	Zmijewski's (1984) financial condition index $(-4.3-4.5*(\text{net income}/\text{total assets})+5.7*(\text{total liabilities}/\text{total assets})-0.004*(\text{total current assets}/\text{total current liabilities}))$
YEAR	±	Indicator variable that takes the value of 1 depending on the year of the firm observation

<sup>169</sup> Definitions retrieved from Blankely, Hurtt and MacGregor (2012), pp. 83, 84; Eshleman and Guo (2014), p. 126; Krauß, Pronobis and Zülch (2015), pp. 80-81; Viciwati (2020), p. 797.