Online Appendix for

"The Effect of Language on Income Smoothing: Cross-Country Evidence"

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Online Appendix A. Measuring Income Smoothing

We use three measures from prior literature to capture corporate income smoothing behavior. Our first measure, *IS1*, it is calculated as the country-industry ratio of the cross-sectional standard deviation of operating income divided by the standard deviation of cash flow from operations, multiplied by -1:

$$IS1 = \sigma(NI)/\sigma(CFO) \times -1$$

where

NI = net income scaled by lagged total assets, $oiadp_t/at_{t-1}$, and CFO = cash flow from operations scaled by lagged total assets, $oancf_t/at_{t-1}$.

Our second measure, *IS2*, is calculated as the country-industry Spearman correlation between changes in total accruals and contemporaneous changes in operating cash flow, multiplied by -1.

$$IS2 = \rho[\Delta ACC, \Delta CFO] \times -1$$

where

ACC = total accruals, [Δcurrent assets (Δact_t) - Δcash (Δche_t) - Δcurrent liabilities (Δlct_t) + Δshort-term debt (Δdlc_t) - depreciation (dp_t)]/lagged total assets (at_{t-1}) and CFO is defined above.

The third measure, *IS3*, is calculated as the country-industry Spearman correlation between the change in discretionary accruals (ΔDAC) and the change in pre-discretionary income ($\Delta NDNI$) (i.e., net income minus discretionary accruals), multiplied by -1:

$$IS3 = \rho[\Delta DAC, \Delta NDNI] \times -1$$

where

DAC = discretionary accruals calculated using the performance-adjusted modified Jones model (Kothari et al. 2005), $NDNI$ = net income minus discretionary accruals, $NI - DAC$, and NI is defined above.

For each of our primary measures, we first calculate the input at the firm-year level and then we compute the ratio/correlation at the country-industry unit level. That is, for each country-industry group, we compute the cross-sectional ratio/correlation for *IS1*, *IS2*, and *IS3*, respectively. Following Dou et al. (2013) and Baik et al. (2020), we use principal component analysis to obtain an aggregate score (*IS_Score*) based on these three measures.

We compute the ratio/correlation at different unit level in robustness analyses. To compute *IS_Score_CIY*, we estimate the individual measures at the country-industry-year unit and to compute *IS_Score_FY* and *IS_Score_UK*, we calculate the individual measures at the firm-year unit over rolling 5-year windows (i.e., t_{-4} to t).

Online Appendix B. Decomposing Income Smoothing

Our decomposition follows the modified model in Dou et al. (2013), which takes into account the difference in the predictability of earnings for profit versus loss firms. We estimate the following regression at the country-industry level:

$$R_t = b_0 + b_1 X_{t-1} + b_2 X_t + b_{3P} Profit * X_{t3} + b_{3L} Loss * X_{t3} + b_4 R_{t3} + e_t \quad \text{(C1)}$$

where R_t is the stock return in year *t*, X_{t-1} and X_t are earnings per share (EPS) in years *t*-1 and *t*, respectively, *Profit* (*Loss*) is an indicator variable set to one if the three-year aggregate EPS in years *t*+1 through *t*+3 is positive (negative), X_{t3} is the sum of EPS in years *t*+1 through *t*+3, and R_{t3} is the stock return in years *t*+1 through *t*+3. b_{3P} and b_{3L} capture revisions in investors' expectations about future earnings.

Next, for each country with 20 or more industries, we estimate the following regression:

$$IS\_Score_{c,i} = \alpha_0 + \alpha_1 b_{3P\,c,i} + \alpha_2 b_{3L\,c,i} + \varepsilon_{c,i} \quad \text{(C2)}$$

The predicted value of $IS\_Score_{c,i}$ captures the informational component of income smoothing ($IS\_Info_{c,i}$) and the residual, $\varepsilon_{c,i}$, captures the garbled component of income smoothing ($IS\_Garb_{c,i}$). That is,

$$IS\_Info_{c,i} = \hat{\alpha}_0 + \hat{\alpha}_1 b_{3P\,c,i} + \hat{\alpha}_2 b_{3L\,c,i} \quad \text{(C3a)}$$

$$IS\_Garb_{c,i} = \varepsilon_{c,i} \quad \text{(C3b)}$$