

Debt Maturity Financial Agility and Corporate Growth Opportunities Evidence from an Emerging Market Firm Panel

Heba M. Srour

Tanta University

Noura Roushdy

nmrushde@imamu.edu.sa

Imam Mohammad ibn Saud Islamic University

Maha Moussa

Utah State University

Mohamed F. Abouelenein

Imam Mohammad ibn Saud Islamic University

Samaa O. A. Razzak

Mansoura University

David Zohny

Sadat Academy for Management Sciences

Research Article

Keywords: debt maturity, financial agility, financial flexibility, cash holdings, net working capital, corporate growth, PLS-SEM, panel data, emerging markets

Posted Date: August 5th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10178538/v1>

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Additional Declarations: No competing interests reported.

Abstract

This study examines whether debt maturity and related financing choices are associated with corporate growth through the conditioning role of financial agility. Financial agility is measured using two balance-sheet liquidity indicators: the cash holding ratio and the net working capital ratio. Using an unbalanced panel of 23 Egyptian listed firms observed from 2003 to 2023, the study links debt maturity, term structure, dividend policy, tax burden, firm size, and Tobin-Q to two dimensions of corporate growth: asset expansion and profit performance. The empirical design combines SmartPLS v4 path-analysis estimates with a reproducible panel-data workflow that documents data quality, produces journal-style descriptive evidence, and estimates fixed-effects robustness checks. The structural results indicate that debt maturity has heterogeneous associations with growth outcomes: it is positively associated with tangible asset growth but negatively associated with capital expenditure and selected profitability indicators. Financial agility is not uniformly growth-enhancing; cash holdings and net working capital condition the effect of financing structure, strengthening some growth channels while weakening others. Fixed-effects robustness checks support a more cautious interpretation because several SmartPLS associations are attenuated after controlling for firm and year heterogeneity. The study contributes to the debt maturity and financial flexibility literature by showing that liquidity buffers condition, rather than simply transmit, the relationship between financing structure and growth in an emerging-market setting. The findings are best interpreted as associative evidence rather than causal identification.

JEL classifications: G31; G32; M41; O16

1. Introduction

Corporate growth depends not only on access to capital but also on the maturity structure and liquidity design of the firm's financing policy. A firm may have investment opportunities, reflected for example by Tobin-Q, but still fail to convert those opportunities into tangible investment if the maturity of its liabilities, cash buffers, or working-capital position constrains the timing and flexibility of investment. Conversely, longer debt maturity can reduce refinancing pressure and support long-horizon asset accumulation, but it may also weaken monitoring pressure or encourage conservative liquidity retention.

This paper examines the nexus between debt maturity, financial agility, and corporate growth opportunities in an emerging-market firm panel. The term financial agility is used to describe the firm's ability to absorb financing shocks and redeploy internal liquidity toward investment. This construct is closely related to financial flexibility: the ability to preserve debt capacity, liquidity, and access to financing so the firm can invest when valuable opportunities arise (DeAngelo and DeAngelo, 2007; Gamba and Triantis, 2008).

The empirical motivation is threefold. First, debt maturity may mitigate liquidity risk but also alter managerial incentives and the timing of investment (Myers, 1977; Diamond, 1991). Second, cash holdings and net working capital can protect investment under financing frictions, but excessive liquidity may also signal precautionary behavior or a shortage of productive projects (Opler et al., 1999; Almeida

et al., 2004; Bates et al., 2009). Third, corporate growth is multidimensional: asset growth, capital expenditure, profitability, earnings volatility, and earnings quality need not move in the same direction. This setting is particularly relevant because emerging-market firms often face less complete capital markets, more volatile financing conditions, and stronger dependence on internal liquidity than firms in developed financial systems. Under these conditions, the maturity structure of debt and the availability of cash or working capital can have stronger implications for investment timing and growth realization. Studying Egyptian listed firms, therefore, provides evidence on how financing structure and liquidity buffers jointly shape corporate growth when external financing frictions are likely to be important. This study contributes to the literature in four ways. First, it links debt maturity to multiple growth outcomes rather than treating corporate growth as a single construct. Second, it distinguishes financial agility as a conditional channel: liquidity buffers may support investment capacity, but they may also reflect precautionary retention or inefficient deployment of funds. Third, it integrates SmartPLS path-analysis evidence with transparent data-quality diagnostics, which is important because several raw variables have severe missingness. Fourth, it adds fixed-effects validation using lagged predictors, firm effects, year effects, and firm-clustered standard errors, providing a more cautious empirical design than a stand-alone structural path model.

The paper proceeds as follows. Section 2 develops the theoretical background and hypotheses. Section 3 describes the data, variable construction, data-quality audit, and empirical design. Section 4 reports the SmartPLS and fixed-effects evidence. Section 5 discusses implications for theory, managers, investors, and policy. Sections 6 and 7 present limitations, future research directions, and the conclusion.

2. Literature Background and Hypothesis Development

2.1 Debt maturity and growth opportunities

Debt maturity is a central corporate-finance decision because it affects refinancing risk, lender discipline, agency costs, and the ability to finance long-lived assets. Myers (1977) argues that risky debt can create underinvestment incentives when future growth opportunities are not fully captured by existing claimholders. Diamond (1991) emphasizes that maturity choice trades off the benefits of short-term debt against liquidity risk. Empirical evidence shows that maturity structure is systematically related to contracting costs, firm size, and growth opportunities (Barclay and Smith, 1995; Stohs and Mauer, 1996). For firms in emerging markets, these mechanisms may be stronger because external financing can be more volatile, banking relationships may matter more, and market-based refinancing channels are often less complete. Longer maturity can therefore support long-term asset accumulation, but it may not automatically translate into higher current capital expenditure or profitability. The predicted effect of debt maturity on growth is therefore ambiguous. Longer maturity can reduce refinancing risk and help firms finance long-lived assets, but short-term debt can also impose discipline and reduce agency costs. The same financing choice may increase tangible asset accumulation while reducing contemporaneous investment intensity or profitability. This ambiguity motivates the paper's separate treatment of asset-

growth and profit-growth outcomes rather than forcing all growth measures into a single aggregate construct.

H1. Debt maturity and related debt-structure variables are significantly associated with corporate growth, but the sign and magnitude of the association differ across asset-growth and profit-growth outcomes.

2.2 Financial agility as a liquidity channel

Financial flexibility models suggest that firms hold cash and preserve financing capacity when external financing is costly and investment opportunities are uncertain. Opler et al. (1999) and Bates et al. (2009) show that cash holdings are related to growth opportunities, risk, and financing frictions. Almeida et al. (2004) show that financially constrained firms save more cash out of cash flow, making liquidity policy an informative signal of financing constraints. At the same time, liquidity has two possible interpretations: it can be a productive buffer that enables investment under adverse financing conditions, or it can reflect managerial caution and inefficient retention of funds.

Net working capital complements cash holdings because it captures operating liquidity rather than only cash reserves. A firm with strong working capital can manage short-term obligations and maintain operating continuity, but high working capital may also tie resources to inventories, receivables, or inefficient short-term assets. Cash and working capital are therefore treated as separate indicators of financial agility, and their effects are allowed to differ across growth outcomes.

This distinction is important for interpreting financial agility in secondary financial-statement data. High liquidity may represent strength when it enables investment during external financing constraints, but it may represent caution or weak investment demand when it is retained without being converted into productive assets. The empirical analysis therefore avoids assuming that financial agility is uniformly beneficial.

H2. Financial agility, measured by the cash holding ratio and the net working capital ratio, has a significant direct association with corporate growth outcomes.

2.3 Channel and moderation mechanisms

The proposed mechanism is both channel-based and moderating. Financial agility may transmit part of the effect of financing policy to growth by changing the liquidity available for investment. It may also moderate the strength of the debt maturity-growth association: the effect of debt maturity may differ for firms with high cash reserves or high working capital compared with firms with limited liquidity buffers. Because the available SmartPLS output does not include a complete specific-indirect-effects table, this manuscript avoids claiming confirmed mediation and instead refers to a financial-agility channel and moderation evidence.

The moderation perspective is especially relevant in this setting. If long debt maturity lowers refinancing pressure, its growth effect should depend on whether the firm also has sufficient liquidity to invest. Conversely, high liquidity without disciplined financing may weaken growth if funds remain idle or are

absorbed by inefficient working-capital management. The interaction terms between debt characteristics and financial-agility indicators directly test this conditional mechanism.

H3. Financial agility acts as a financing channel linking debt structure to corporate growth.

H4. Financial agility moderates the association between debt characteristics and corporate growth, so interaction effects between debt structure and liquidity indicators are statistically significant.

3. Data, Variables, and Research Design

3.1 Sample construction

The empirical file contains an unbalanced firm-year panel of 23 Egyptian listed firms observed between 2003 and 2023. The cleaning workflow standardizes firm identifiers, converts financial variables to numeric values, computes ratio variables, constructs lagged predictors, and winsorizes key continuous variables to reduce the influence of extreme observations. The analysis is observational; therefore, the results are interpreted as associations and channel evidence rather than definitive causal estimates.

The use of an unbalanced panel is appropriate because listed firms may enter or leave the sample, and because accounting and market variables are not always observed for every firm-year. Rather than hiding this limitation, the paper reports variable-level missingness and separates core variables with adequate coverage from variables that require cautious interpretation. This approach improves transparency and helps readers evaluate which results are supported by the strongest data coverage.

3.2 Variable construction

Table 1
Variable definitions and empirical constructs.

Construct	Variable(s)	Operational definition
Debt structure	Debt maturity	Long-term debt divided by total debt
Debt structure	Term structure	Short- versus long-term financing mix; interpreted cautiously because of missingness
Financial agility	Cash holding ratio	Cash and equivalents divided by total assets
Financial agility	Net working capital ratio	Net working capital divided by total assets
Asset growth	Tangible asset growth	Change in tangible fixed assets scaled by lagged total assets
Asset growth	CAPEX proxy	Change in tangible fixed assets plus depreciation/amortization scaled by lagged assets
Profit growth	Profitability	Operating income divided by total assets
Profit growth	Earnings volatility	Rolling standard deviation of profitability
Profit growth	Earnings quality proxy	Forward EPS change scaled by price
Controls	Firm size, Tobin-Q, leverage, tax rate, dividends	Standard controls for scale, growth opportunities, capital structure, tax burden, and payout policy

3.3 Data quality and descriptive statistics

The data audit shows that several variables have severe missingness, including term-structure and original earnings-quality variables. These variables are therefore interpreted cautiously, and the fixed-effects validation relies on cleaned variables with better coverage whenever possible.

Table 2
Descriptive statistics for core variables from the cleaned panel.

Variable	N	Mean	SD	Median	P25	P75
Debt maturity	375	0.158	0.184	0.088	0.002	0.268
Cash holding ratio	373	0.185	0.240	0.114	0.047	0.231
Net working capital ratio	368	0.010	0.163	0.006	-0.100	0.123
Tangible asset growth	358	0.042	0.185	0.004	-0.012	0.039
CAPEX proxy	351	0.070	0.190	0.028	0.007	0.070
Profitability (ROA)	385	0.148	0.113	0.111	0.070	0.210
Earnings volatility	327	0.040	0.059	0.027	0.013	0.041
Earnings quality proxy	134	0.014	0.122	0.008	-0.009	0.026
Firm size	385	15.596	1.806	15.395	14.556	16.592
Tobin-Q	273	8.495	18.685	1.690	0.799	6.489
Leverage	380	0.525	0.267	0.522	0.332	0.693
Effective tax rate	376	0.296	0.677	0.201	0.093	0.246
Dividend	319	0.433	0.496	0.000	0.000	1.000
Net debt issuance	374	0.548	0.352	0.544	0.325	0.708

Table 3
Highest missingness variables in the cleaned panel.

Variable	Non-missing	Missing	Missing (%)
3M treasurt	1	478	99.79%
Term Structure	1	478	99.79%
E-Quality	1	478	99.79%
10years bond	1	478	99.79%
CAPEX	18	461	96.24%
eps_change_scaled	134	345	72.03%
price	209	270	56.37%
tobin_q	273	206	43.01%
L1_tobin_q	273	206	43.01%
lead_eps	295	184	38.41%
eps	299	180	37.58%
L1_dividend	311	168	35.07%

3.4 Empirical design

The structural component uses SmartPLS v4 path-analysis output to estimate direct paths from debt characteristics to growth outcomes, direct paths from financial-agility indicators to growth outcomes, and two-way interactions between debt characteristics and agility indicators. PLS-SEM is appropriate for prediction-oriented modeling of complex path structures when reported transparently (Hair et al., 2019; Henseler et al., 2015).

To strengthen the empirical design, the paper adds a complementary panel validation model with lagged predictors, firm fixed effects, year fixed effects, and firm-clustered standard errors:

$$\text{Growth}_{i,t} = \beta_1 \text{DebtMaturity}_{i,t-1} + \beta_2 \text{Cash}_{i,t-1} + \beta_3 \text{NWC}_{i,t-1} + \beta_4 (\text{DebtMaturity} \times \text{Cash})_{i,t-1} + \beta_5 (\text{DebtMaturity} \times \text{NWC})_{i,t-1} + \text{Controls}_{i,t-1} + \alpha_i + \tau_t + \epsilon_{i,t}$$

This model is not a replacement for the SmartPLS structural model; rather, it examines whether the main patterns remain visible after controlling for unobserved time-invariant firm heterogeneity and common year shocks.

This two-stage reporting strategy is intentional. The SmartPLS results are used to summarize the structural channel and moderation patterns, while the fixed-effects models provide a conservative check against time-invariant firm heterogeneity and common macroeconomic shocks. Agreement between the

two approaches strengthens interpretation; disagreement signals that the structural paths should be viewed as predictive associations rather than causal effects.

4. Empirical Results

4.1 Correlations and annual trends

The correlation heatmap provides a preliminary diagnostic for relationships among core variables. The descriptive evidence suggests that debt maturity, liquidity, leverage, profitability, and growth outcomes are jointly related but not interchangeable. These patterns motivate the structural and fixed-effects analyses rather than serving as causal evidence.

Annual medians show that leverage remains materially higher than the liquidity ratios, while debt maturity and working capital show meaningful variation over time. Profitability and growth indicators fluctuate across the sample period, reinforcing the importance of controlling for year effects in robustness checks.

4.2 SmartPLS model fit and explanatory power

The SmartPLS v4 output reports acceptable model fit for the two structural models. Model 1, focused on asset growth, has SRMR = 0.076 and NFI = 0.978. Model 2, focused on profit growth, has SRMR = 0.092 and NFI = 0.958. These values support the use of the structural results as prediction-oriented channel evidence, although the interpretation remains cautious because of missingness in selected variables and the observational nature of the panel.

Table 4 PLS-SEM model fit statistics from SmartPLS v4 output.		
Fit statistic	Model 1: asset growth	Model 2: profit growth
SRMR	0.076	0.092
d_ULS	0.314	0.621
d_G	0.062	0.083
Chi-square	17.477	16.903
NFI	0.978	0.958

Table 5
Explanatory power of SmartPLS structural models.

Outcome	R-squared	Model
Tangible asset growth / TAR	0.468	Model 1
CAPEX	0.030	Model 1
Profitability	0.846	Model 2
Earnings volatility	0.858	Model 2
Earnings quality	0.195	Model 2

4.3 Direct effects on asset growth

The first structural model indicates that debt characteristics are significantly associated with both tangible asset growth and capital expenditure. Debt maturity is positively associated with tangible asset growth but negatively associated with CAPEX. This pattern suggests that longer debt maturity may support accumulated asset structure while not necessarily increasing contemporaneous investment spending.

Economically, this result suggests that the maturity profile of debt may be more closely related to accumulated asset structure than to current investment spending. Firms with longer maturity may already have committed to asset bases financed through longer-term liabilities, while CAPEX responds more immediately to liquidity, taxation, payout policy, and investment opportunities. This distinction helps explain why the sign of debt maturity differs across the two asset-growth indicators.

Table 6
Direct debt-structure paths in the asset-growth SmartPLS model.

Pathway	Coefficient	t-statistic	p-value
Debt maturity -> CAPEX	-0.030	2.897	0.011
Debt maturity -> TAR	0.209	4.036	0.001
Term structure -> CAPEX	0.006	2.122	0.027
Term structure -> TAR	-0.190	3.872	0.002
ETR -> CAPEX	0.186	2.066	0.028
ETR -> TAR	0.078	2.033	0.029
Firm size -> CAPEX	-0.053	3.036	0.009
Firm size -> TAR	-0.141	3.384	0.005
Dividend -> CAPEX	-0.011	2.164	0.026
Dividend -> TAR	-0.015	2.197	0.025
Tobin-Q -> CAPEX	-0.005	2.072	0.028
Tobin-Q -> TAR	0.180	3.617	0.003

The financial-agility paths are mixed. Cash holding is negatively associated with both CAPEX and tangible asset growth, while net working capital is positively associated with CAPEX but negatively associated with tangible asset growth. This supports a conditional liquidity-buffer interpretation: liquidity can preserve optionality, but it is not growth-enhancing unless it is converted into productive investment.

Table 7
Direct financial-agility paths in the asset-growth SmartPLS model.

Pathway	Coefficient	t-statistic	p-value
Cash holding -> CAPEX	-0.150	2.204	0.025
Cash holding -> TAR	-0.099	2.184	0.026
NWC -> CAPEX	0.037	2.125	0.027
NWC -> TAR	-0.724	5.275	0.000

4.4 Direct effects on profit growth

The second structural model separates profitability, earnings volatility, and earnings quality. Debt maturity is negatively associated with earnings quality and profitability and positively, although modestly, associated with earnings volatility. Tobin-Q is positively associated with earnings quality and profitability

and negatively associated with earnings volatility, consistent with the interpretation of market valuation as a signal of stronger growth opportunities.

The profit-growth model also shows why profitability should not be analyzed alone. A variable may improve profitability while worsening earnings volatility or earnings quality, implying that short-term profit gains may not reflect sustainable performance. This is particularly important for investors and creditors who evaluate whether growth is supported by stable and high-quality earnings.

Table 8
Direct debt-structure paths in the profit-growth SmartPLS model.

Pathway	Coefficient	t-statistic	p-value
Debt maturity -> Earnings quality	-0.029	2.581	0.017
Debt maturity -> Earnings volatility	0.005	2.228	0.025
Debt maturity -> Profitability	-0.015	2.585	0.017
Term structure -> Earnings quality	-0.156	5.052	0.000
Term structure -> Earnings volatility	-0.096	2.954	0.010
Term structure -> Profitability	-0.259	3.869	0.002
ETR -> Earnings quality	-0.440	2.197	0.025
ETR -> Earnings volatility	-0.473	2.357	0.022
ETR -> Profitability	0.104	2.081	0.028
Firm size -> Earnings quality	0.014	2.118	0.027
Firm size -> Earnings volatility	-0.075	3.015	0.009
Firm size -> Profitability	-0.217	5.297	0.000
Dividend -> Earnings quality	-0.007	2.061	0.029
Dividend -> Earnings volatility	0.162	4.671	0.000
Dividend -> Profitability	0.072	3.032	0.009
Tobin-Q -> Earnings quality	0.183	2.938	0.010
Tobin-Q -> Earnings volatility	-0.011	2.207	0.025
Tobin-Q -> Profitability	0.031	2.526	0.018

Cash holdings are positively associated with profitability and earnings volatility but negatively associated with earnings quality. Net working capital has a weak positive association with profitability and earnings volatility, but a negative association with earnings quality. Thus, financial agility should not be treated as

a purely positive construct; its value depends on whether liquidity is deployed efficiently and whether reported profitability is stable and high quality.

Table 9
Direct financial-agility paths in the profit-growth SmartPLS model.

Pathway	Coefficient	t-statistic	p-value
Cash holding -> Earnings quality	-0.363	2.585	0.017
Cash holding -> Earnings volatility	0.899	4.758	0.000
Cash holding -> Profitability	0.717	4.010	0.001
NWC -> Earnings quality	-0.195	2.466	0.019
NWC -> Earnings volatility	0.096	2.634	0.016
NWC -> Profitability	0.004	2.039	0.029

4.5 Moderation effects

The interaction results show that the growth effect of debt structure changes materially across liquidity conditions. In the asset-growth model, interactions involving cash holdings and Tobin-Q are especially large, while interactions involving net working capital and debt maturity are negative for tangible asset growth. In the profit-growth model, liquidity interactions are again heterogeneous: cash can strengthen selected profitability channels but weaken others, and net working capital interacts negatively with Tobin-Q for earnings quality.

Table 10
Selected interaction effects in the asset-growth SmartPLS model.

Selected pathway	Coefficient	t-statistic	p-value
Cash x debt maturity -> CAPEX	0.039	2.341	0.022
NWC x debt maturity -> CAPEX	0.126	2.763	0.013
Cash x debt maturity -> TAR	-0.531	4.046	0.001
NWC x debt maturity -> TAR	-0.608	4.163	0.001
Cash x Tobin-Q -> TAR	0.932	4.099	0.001
NWC x Tobin-Q -> TAR	-0.474	3.569	0.003
Cash x size -> CAPEX	0.364	3.768	0.002
NWC x size -> TAR	-0.446	4.188	0.001

Table 11
Selected interaction effects in the profit-growth SmartPLS model.

Selected pathway	Coefficient	t-statistic	p-value
Cash x debt maturity -> Earnings quality	0.171	2.887	0.011
NWC x debt maturity -> Earnings quality	0.218	3.294	0.006
Cash x debt maturity -> Profitability	-0.001	2.010	0.030
NWC x debt maturity -> Profitability	-0.139	3.568	0.004
Cash x size -> Profitability	-0.496	5.146	0.000
NWC x size -> Profitability	-0.152	2.936	0.010
Cash x Tobin-Q -> Earnings quality	0.980	3.307	0.006
NWC x Tobin-Q -> Earnings quality	-1.298	4.005	0.001

4.6 Fixed-effects validation

The fixed-effects validation table provides a more conservative check because it uses lagged predictors, firm fixed effects, year fixed effects, and firm-clustered standard errors. These estimates are not expected to match the SmartPLS paths exactly. Instead, they test whether the core relationships remain visible after accounting for persistent firm differences and common year shocks. The robustness results suggest that the main SmartPLS patterns should be interpreted cautiously: the debt maturity coefficient is not statistically precise in the fixed-effects models, while net working capital and selected interaction terms remain relevant for some outcomes.

The attenuation of several SmartPLS associations in the fixed-effects models is informative rather than problematic. It suggests that part of the structural association is related to persistent firm characteristics, such as managerial quality, industry positioning, or long-run financing style. The paper therefore emphasizes patterns, channels, and robustness rather than strong causal claims.

Table 12

Fixed-effects robustness check using lagged explanatory variables. Entries report coefficients with firm-clustered standard errors in parentheses. Models include firm and year fixed effects and controls. *, **, and *** indicate $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Variable	Tangible asset growth	CAPEX proxy	Profitability (ROA)	Earnings volatility	Earnings quality proxy
Debt maturity (t-1)	-0.185 (0.217)	-0.176 (0.227)	0.122 (0.094)	0.010 (0.026)	-0.035 (0.297)
Cash holding (t-1)	0.061 (0.207)	0.060 (0.209)	0.122 (0.160)	-0.005 (0.039)	-0.258 (0.346)
NWC ratio (t-1)	0.365* (0.207)	0.387 (0.239)	-0.074 (0.091)	0.040 (0.026)	-0.688*** (0.249)
Debt maturity x cash	-2.227 (1.735)	-2.561 (1.718)	-1.266** (0.531)	0.256 (0.161)	-1.087 (1.357)
Debt maturity x NWC	0.082 (0.987)	0.516 (0.973)	-0.267 (0.401)	-0.102 (0.126)	0.383 (0.607)
Observations	246	243	247	236	100
Firms	21	21	21	21	17
Adjusted R-squared	0.225	0.251	0.617	0.603	0.256

5. Discussion

The evidence supports a nuanced interpretation of debt maturity and financial agility. Longer debt maturity appears to be linked to structural asset accumulation in the SmartPLS asset-growth model, but the association is not uniformly positive across CAPEX and profit outcomes. This distinction matters because tangible asset growth, investment spending, profitability, volatility, and earnings quality reflect different economic mechanisms.

From a theoretical perspective, the results support a contingent view of financial flexibility. The value of liquidity depends on how it interacts with maturity structure and growth opportunities. This helps reconcile competing interpretations in the literature: cash and working capital can mitigate financing frictions, but they can also indicate that firms are delaying investment or holding resources in low-productivity forms.

The main substantive implication is that financial agility is conditional. Cash and working capital are not simply good or bad. They can buffer financing risk and preserve investment capacity, but they can also reflect precautionary retention, underinvestment, or inefficient deployment of liquidity. Managers should

therefore evaluate liquidity policy jointly with debt maturity and growth opportunities rather than treating cash reserves as a stand-alone indicator of financial strength.

For investors, the findings imply that debt maturity should be interpreted alongside liquidity and growth-opportunity indicators. A high Tobin-Q firm with liquidity reserves may be better positioned to invest than a low-growth firm with similar debt maturity. For policymakers and market regulators, the results highlight the importance of deepening long-term financing channels and improving financial disclosure quality in emerging markets.

For managers, the results imply that financing policy should be evaluated as an integrated system rather than as isolated ratios. Extending debt maturity may be useful when it supports productive asset accumulation, but it is less valuable if liquidity remains idle or if working-capital management weakens investment efficiency. Similarly, high cash holdings should be assessed against the firm's opportunity set, payout policy, and ability to convert liquidity into growth.

For researchers, the paper also demonstrates the importance of combining structural path modeling with transparent data diagnostics and panel robustness checks. PLS-SEM can summarize complex direct and interaction paths, but it should be accompanied by clear variable definitions, missingness analysis, and robustness specifications when the data are observational and unbalanced.

6. Limitations and Future Research

Several limitations should guide interpretation. First, variables with near-complete missingness, especially term-structure and original earnings-quality fields, should be replaced with verified sources or excluded from the main specification in future versions. Second, the available SmartPLS report includes direct and interaction effects but not a complete specific-indirect-effects table; therefore, the manuscript describes financial agility as a channel and moderator rather than claiming fully established mediation. Third, the fixed-effects robustness checks attenuate several structural associations, suggesting that causal language should remain conservative.

Future research should add dynamic panel estimators, alternative lag structures, industry-year controls, sensitivity to winsorization thresholds, and sub-sample tests by growth-opportunity group. If PLS-SEM remains central, the final submission should also report PLSpredict, f-square effect sizes, HTMT/discriminant-validity diagnostics where applicable, and the full specific-indirect-effects table from SmartPLS bootstrapping.

7. Conclusion

This study investigates how debt maturity and financial agility jointly relate to corporate growth in an emerging-market firm panel. The results indicate that debt maturity, cash holdings, and net working capital are connected to growth outcomes in heterogeneous ways. The asset-growth model suggests that debt maturity can support tangible asset accumulation, while liquidity indicators reveal a more

complicated relationship with investment and profitability. The profit-growth model further shows that liquidity buffers may improve profitability but can also coincide with higher earnings volatility or lower earnings quality.

The main conclusion is that financial agility is best understood as a conditional channel. It can shape the debt-growth relationship, but its effect depends on whether liquidity is deployed toward productive investment and whether the firm's growth opportunities justify the retained flexibility. The paper contributes to the debt maturity and financial flexibility literature by emphasizing the joint role of maturity structure, liquidity buffers, and growth opportunities in emerging-market firms.

Declarations

Data and Code Availability

The empirical analysis uses a firm-year panel assembled by the authors. The Python replication workflow supports data cleaning, descriptive statistics, missingness analysis, figures, VIF diagnostics, and fixed-effects robustness checks. Code, data files, and generated outputs are available in the following repository, subject to journal and data-distribution requirements: <https://github.com/Mahamoussa321/debt-maturity-financial-agility>. SmartPLS path coefficients, model-fit statistics, and interaction effects are reported in the manuscript tables and appendices; the corresponding SmartPLS output files should be archived in the repository or supplied as supplementary material where permitted by the target journal.

Data Availability Statement:

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

Consent to publish:

Not applicable.

Ethics and Consent to Participate declarations:

not applicable

Funding Statement

This work was supported and funded by the Deanship of Scientific Research at Imam Mohammad Ibn Saud Islamic University (IMSIU) (grant number IMSIU-DDRSP2604)

Conflicts of Interest

The authors declare no conflicts of interest.

References

1. Almeida, H., Campello, M., and Weisbach, M. S. (2004). The cash flow sensitivity of cash. *Journal of Finance*, 59(4), 1777-1804.
2. Barclay, M. J., and Smith, C. W. (1995). The maturity structure of corporate debt. *Journal of Finance*, 50(2), 609-631.
3. Bates, T. W., Kahle, K. M., and Stulz, R. M. (2009). Why do U.S. firms hold so much more cash than they used to? *Journal of Finance*, 64(5), 1985-2021.
4. DeAngelo, H., and DeAngelo, L. (2007). Capital structure, payout policy, and financial flexibility. Working paper.
5. Diamond, D. W. (1991). Debt maturity structure and liquidity risk. *Quarterly Journal of Economics*, 106(3), 709-737.
6. Fazzari, S. M., Hubbard, R. G., and Petersen, B. C. (1988). Financing constraints and corporate investment. *Brookings Papers on Economic Activity*, 1988(1), 141-206.
7. Gamba, A., and Triantis, A. (2008). The value of financial flexibility. *Journal of Finance*, 63(5), 2263-2296.
8. Graham, J. R., and Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics*, 60(2-3), 187-243.
9. Hair, J. F., Risher, J. J., Sarstedt, M., and Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24.
10. Henseler, J., Ringle, C. M., and Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115-135.
11. Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147-175.
12. Myers, S. C., and Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.
13. Opler, T., Pinkowitz, L., Stulz, R., and Williamson, R. (1999). The determinants and implications of corporate cash holdings. *Journal of Financial Economics*, 52(1), 3-46.
14. Stohs, M. H., and Mauer, D. C. (1996). The determinants of corporate debt maturity structure. *Journal of Business*, 69(3), 279-312.
15. Whited, T. M. (1992). Debt, liquidity constraints, and corporate investment: Evidence from panel data. *Journal of Finance*, 47(4), 1425-1460.

Figures

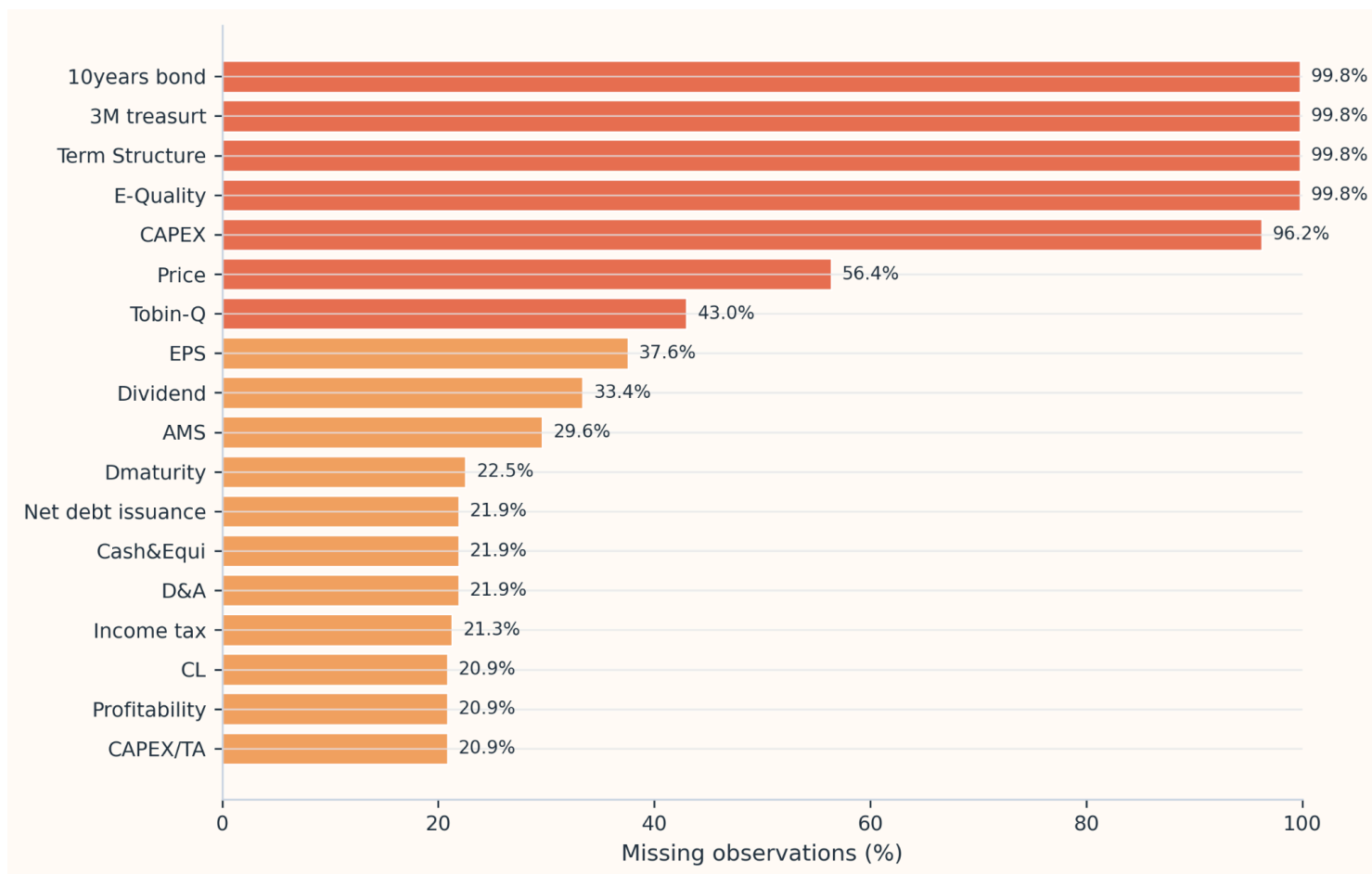


Figure 1

Missingness audit for the most incomplete variables in the panel.

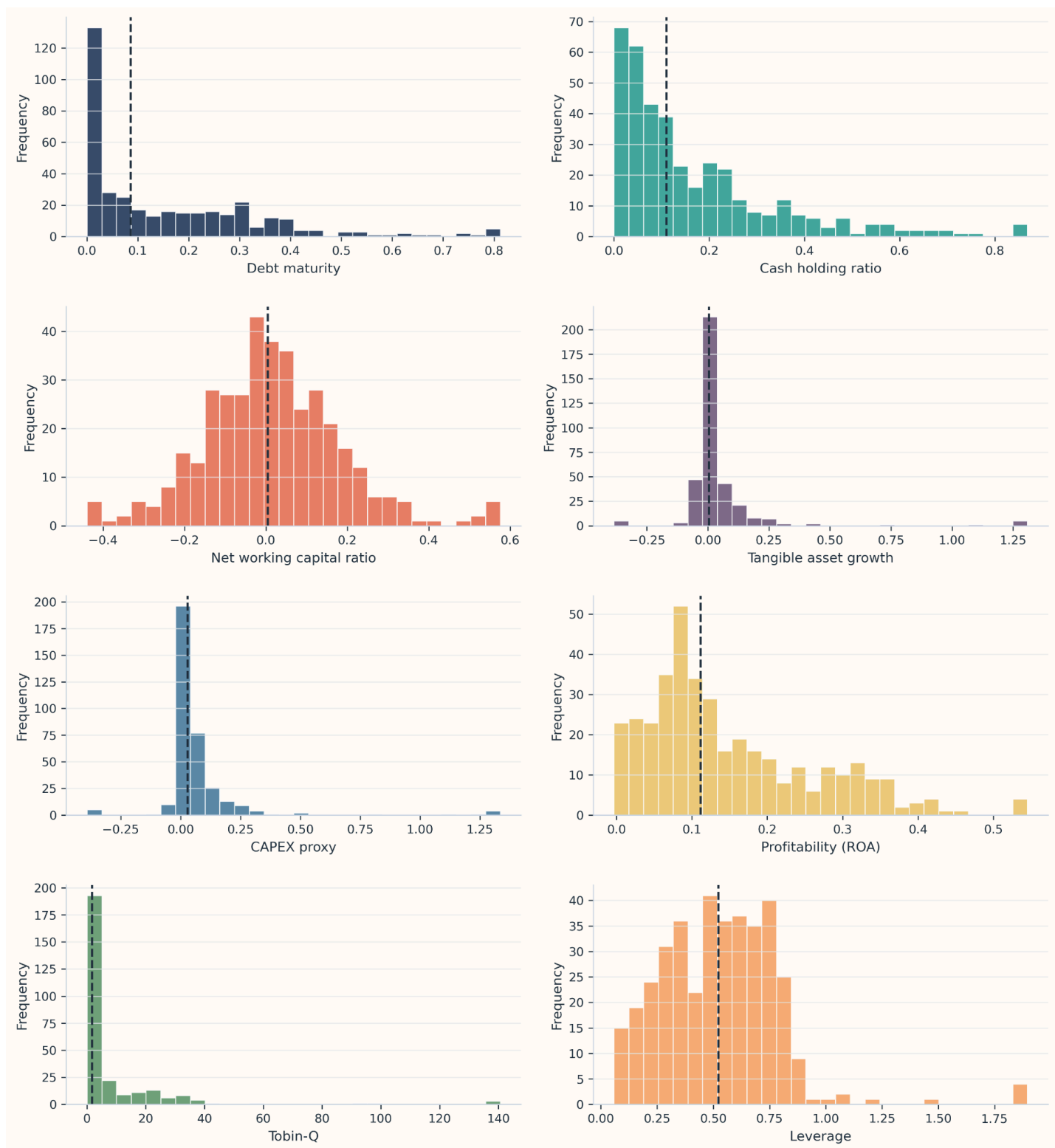


Figure 2

Distributions of main debt, agility, and growth variables after cleaning and winsorization.

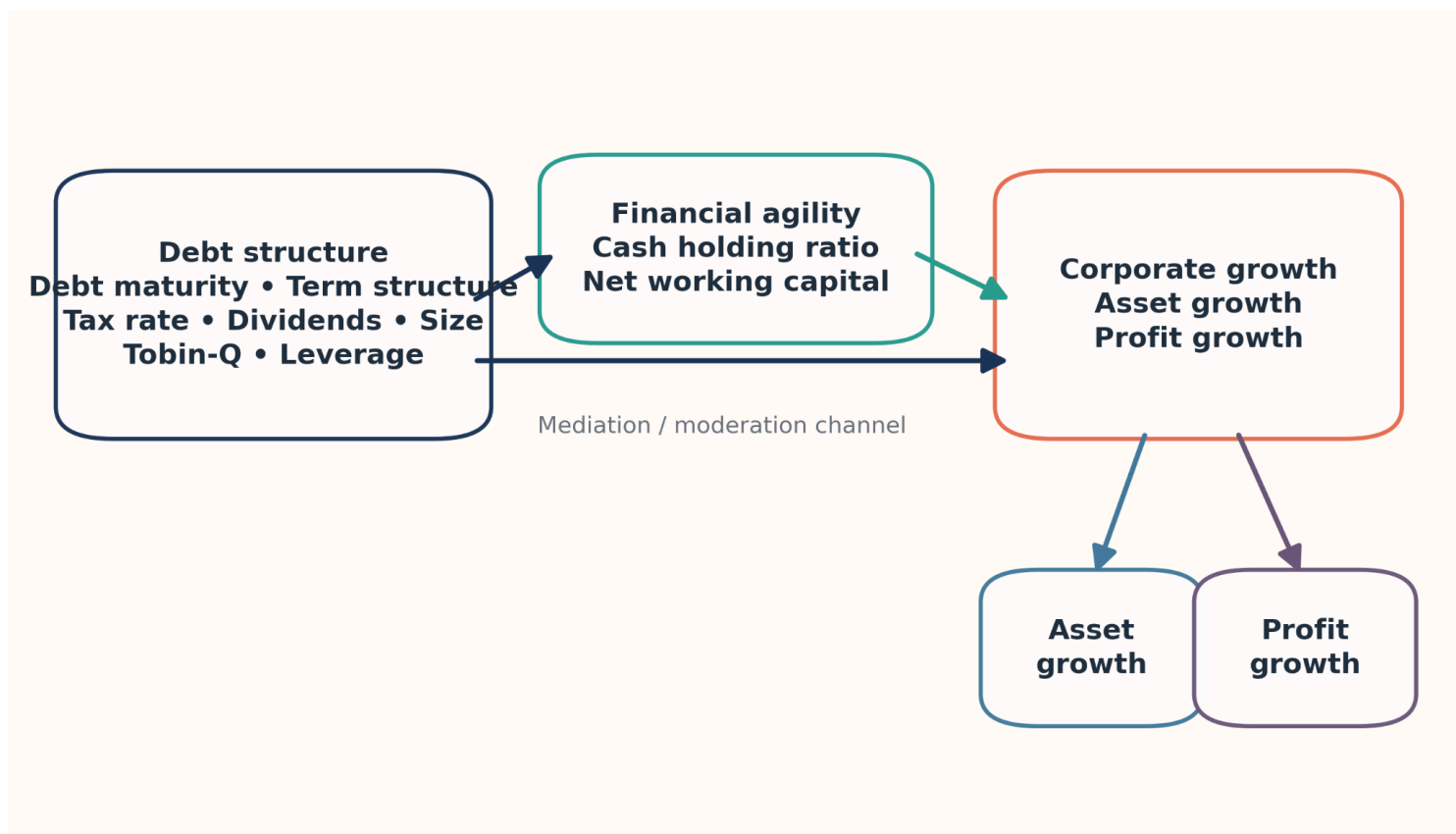


Figure 3

Conceptual framework linking debt structure, financial agility, and corporate growth.

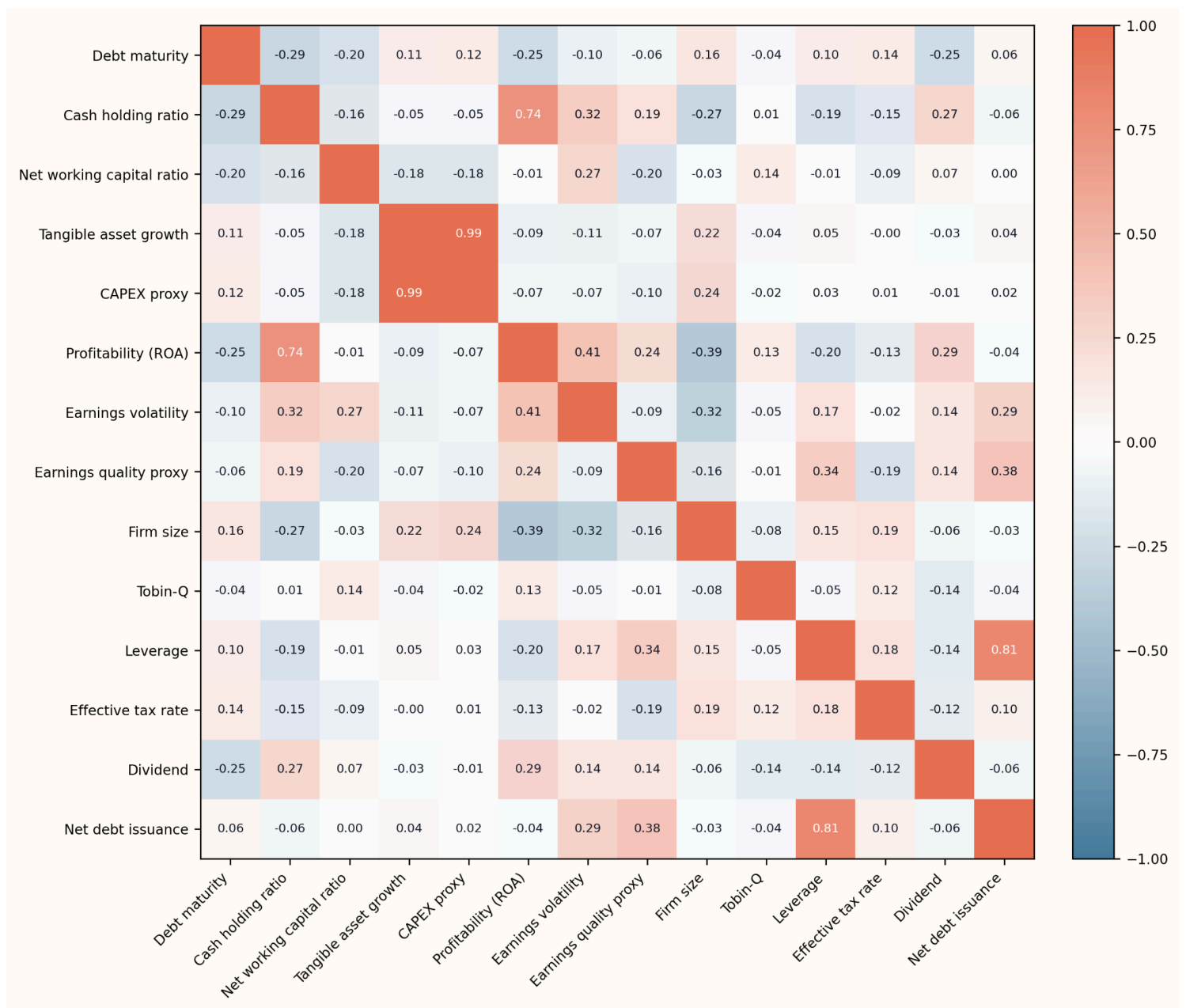


Figure 4

Pairwise correlations among core financing, agility, and growth variables.

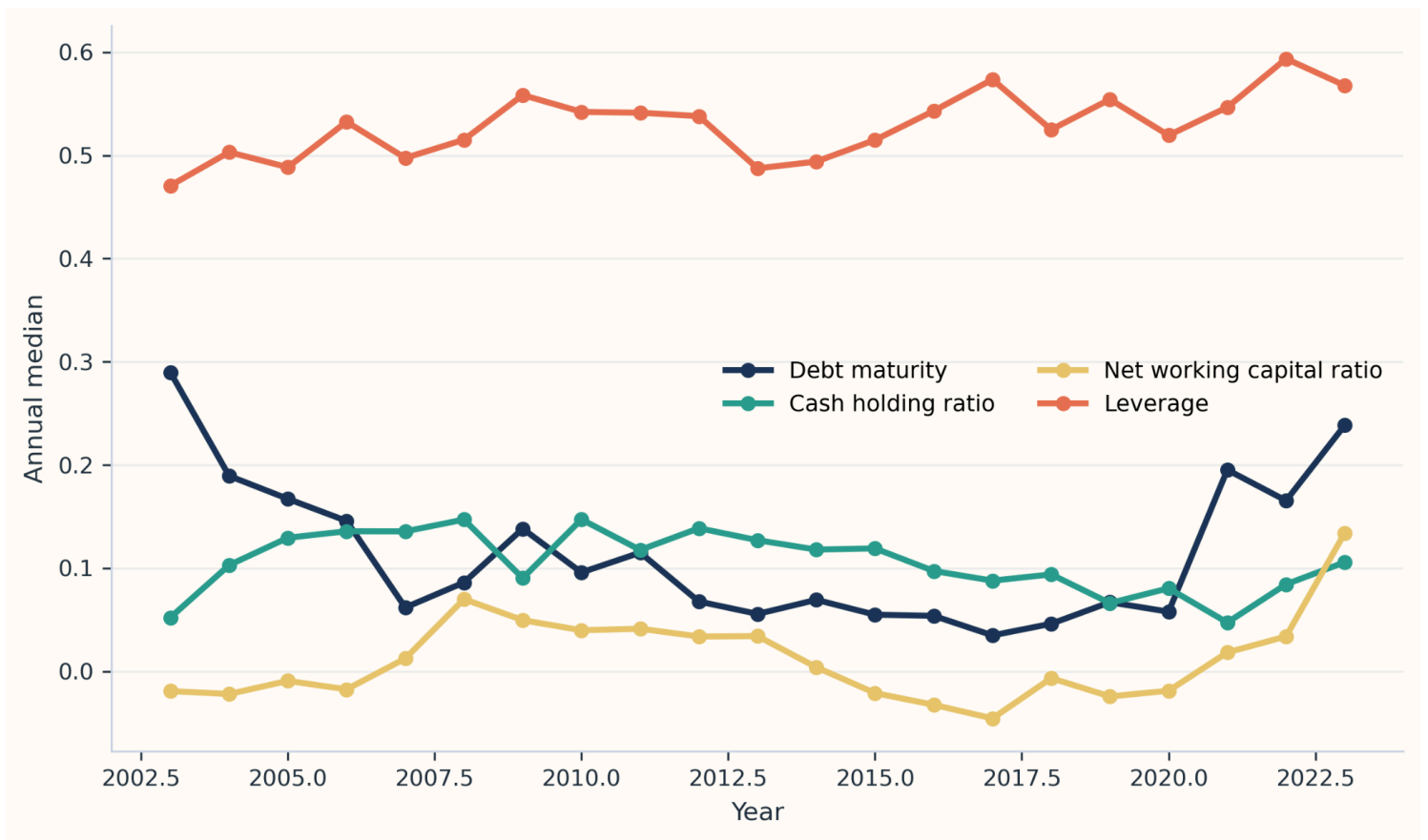


Figure 5

Annual median trends in debt maturity, leverage, and financial agility indicators.

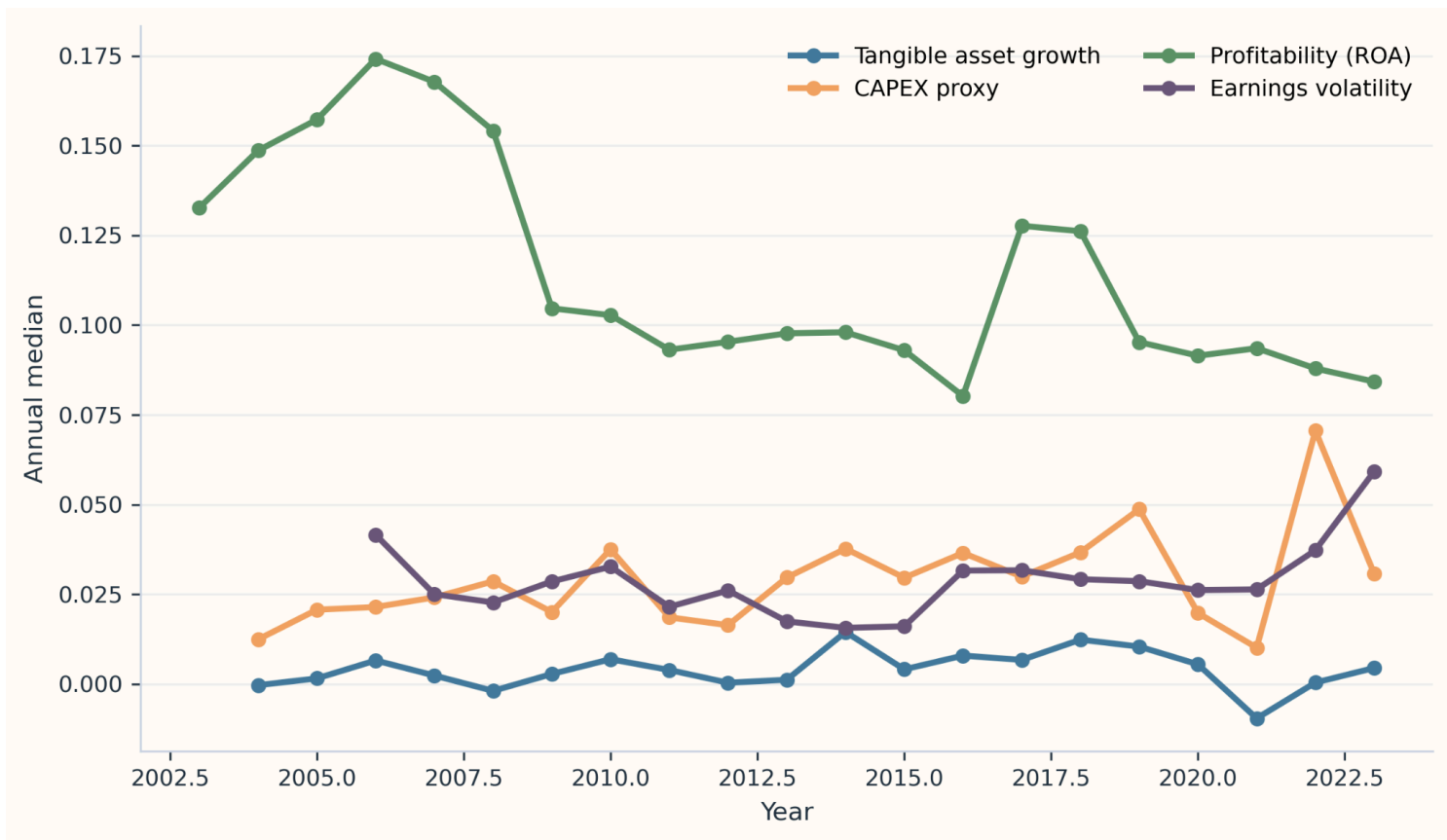


Figure 6

Annual median trends in asset-growth and profit-performance indicators.

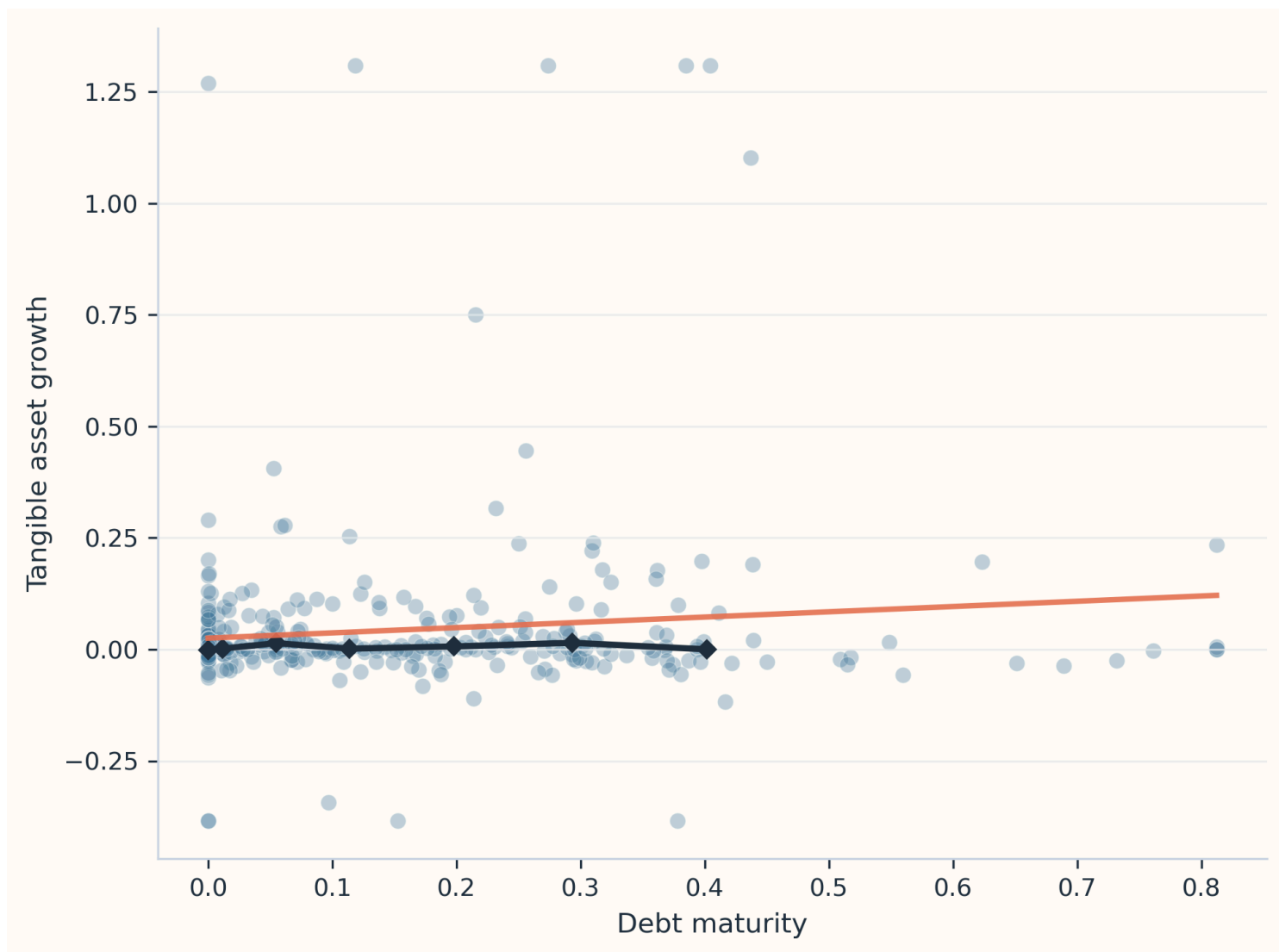


Figure 7

Debt maturity and tangible asset growth with binned median trend.

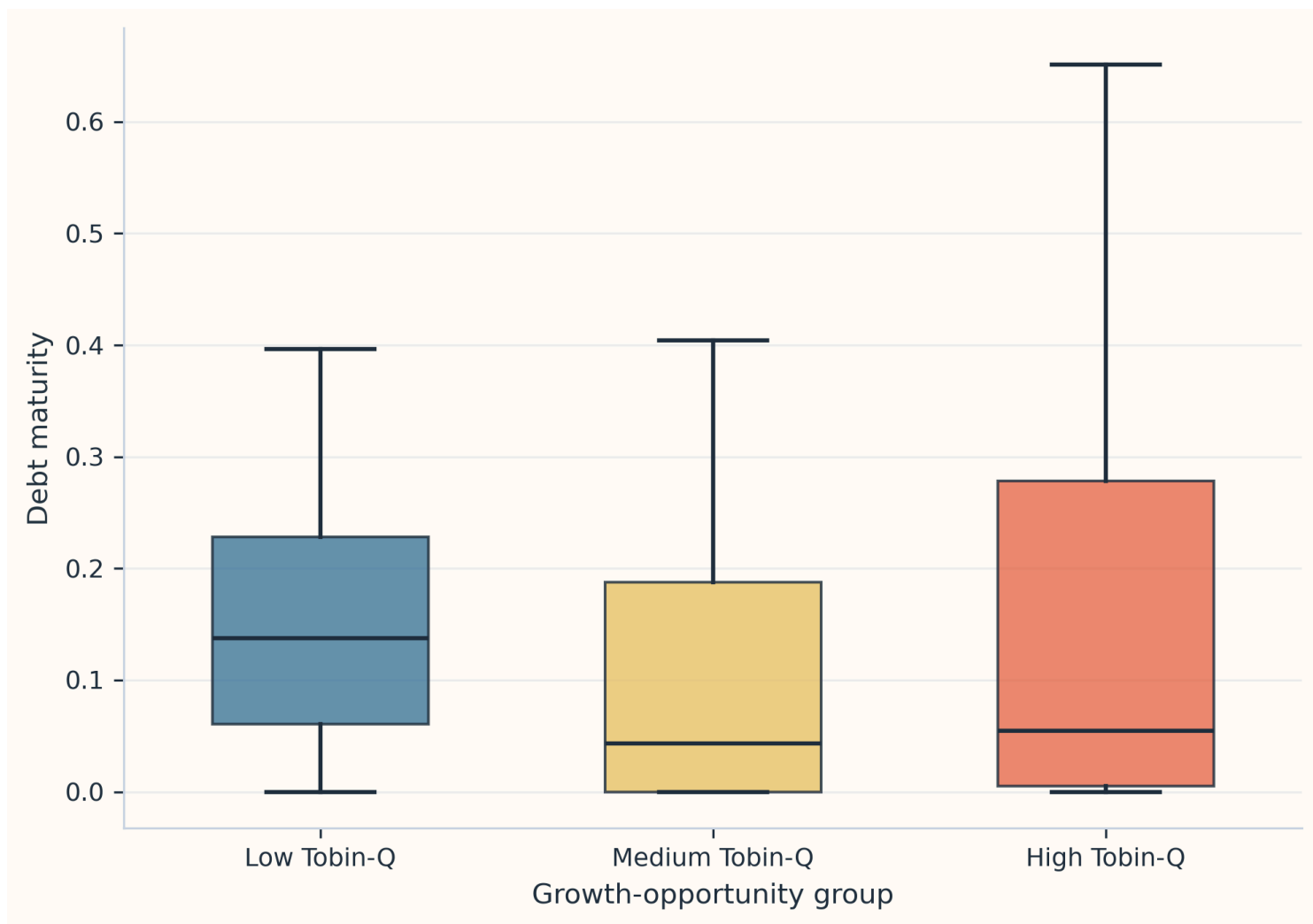


Figure 8

Debt maturity distribution across Tobin-Q growth-opportunity groups.

Supplementary Files

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- [Appendix.docx](#)