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# Liquidity and Subsidiary Performance in a Diversified Telecommunications Group: The Moderating Role of Business Portfolios

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## Abstract

This paper investigates whether cash flow management explains cross-subsidiary variation in performance within an anonymized Indonesian telecommunications group ("ParentCo"), and whether business portfolio type moderates these relationships. Using audited panel data for 40 subsidiaries over 2014–2023, we estimate fixed-effects and moderated regression models linking operating (CFO), investing (CFI), and financing (CFF) cash flows and liquidity (quick ratio) to return on assets (ROA). Descriptive evidence indicates wide dispersion in cash flows and ROA across units. Econometric results show that liquidity, as measured by the quick ratio, is positively and significantly associated with ROA, whereas CFO, CFI, and CFF exhibit no direct significant effects. Portfolio type significantly strengthens the quick ratio–ROA linkage—particularly in connectivity and digital segments—while interactions with CFO, CFI, and CFF are not robust. The findings extend resource-based arguments by showing that the performance salience of short-term liquidity is portfolio-contingent in capital-intensive, fast-moving environments. Limitations include the single-group context and ten-year window; future work should broaden sectors, extend time horizons, and incorporate additional moderators such as competitive intensity and leverage.

**Keywords:** cash flow management; quick ratio; return on assets; moderated regression; telecommunications; business portfolio.

## 1. Introduction

Telecommunications groups manage heterogeneous business portfolios that differ in capital intensity, cash conversion, and revenue cyclicality. As a result, the value of cash resources and liquidity discipline for subsidiary performance may be portfolio-contingent rather than uniform. Building on the resource-based view (RBV), we argue that the ability to convert cash resources into performance depends on portfolio-specific capabilities and constraints.

We study an anonymized Indonesian state-linked telecom group (hereafter, ParentCo) with subsidiaries classified into connectivity, digital, and service portfolios. Our research questions are: (i) do cash flow components and liquidity associate with subsidiary performance (ROA), and (ii) does portfolio type moderate these relationships? This study contributes by integrating portfolio moderation into the cash flow–performance nexus and by providing evidence from an emerging-market telecom context using panel methods that control for time-invariant subsidiary heterogeneity.

## 2. Literature Review

Operating cash flow (CFO) captures internal cash generation; investing cash flow (CFI) reflects long-horizon capital allocation; and financing cash flow (CFF) shapes the capital structure that enables investment and liquidity buffers. Prior findings on direct CFO/CFI/CFF effects on profitability are mixed across sectors and horizons. Liquidity ratios—especially the quick ratio—capture the ability to meet short-term obligations without inventory liquidation and often correlate positively with performance by preserving operational flexibility in volatile, capital-intensive settings. RBV implies that resource productivity is context-dependent; portfolio type may therefore moderate how cash and liquidity translate into performance due to differences in capex cycles, working-capital needs, and demand volatility.

## 3. Methods

### 3.1 Data and variables

We assemble audited secondary data for 40 ParentCo subsidiaries over 2014–2023. The dependent variable is ROA. Explanatory variables include CFO, CFI, CFF, and the quick ratio (QR). The moderator is portfolio type (connectivity, digital, service).

### 3.2 Model specification

We estimate fixed-effects (FE) panel regressions after model selection via Chow and Hausman tests and extend the baseline with interaction terms to implement moderated regression analysis (MRA). Standard diagnostics ($R^2$, adjusted $R^2$, F-statistic, Durbin–Watson) are reported with robust standard errors suitable for panel data.

### 3.3 Anonymization and ethics

The parent company and subsidiaries are anonymized; results are presented in aggregate to avoid re-identification. The analysis uses publicly available or authorized internal financial data and conforms to institutional research ethics.

## 4. Results

Descriptive evidence shows wide dispersion across subsidiaries in CFO, CFI, and CFF; QR centers around values consistent with adequate short-term solvency; and ROA varies substantially, indicating heterogeneous efficiency in asset utilization across portfolios.

**Table 1. Descriptive statistics (ParentCo subsidiaries, 2014–2023)**

| Variable | Mean | Maximum | Minimum | Std. Dev. | Variance | N |
|---|---|---|---|---|---|---|
| CFO (Rp trn) | 45.81 | 285.45 | -167.19 | 75.12 | 5.64 × 10^21 | 430 |
| CFI (Rp trn) | -36.64 | 72.36 | -196.57 | 45.75 | 2.09 × 10^21 | 430 |
| CFF (Rp trn) | -0.27 | 111.94 | -105.19 | 37.87 | 1.43 × 10^21 | 430 |
| Quick Ratio | 1.11 | 3.08 | 0.02 | 0.60 | 0.35 | 430 |
| ROA (%) | 3.10 | 28.06 | -24.58 | 9.31 | 0.00866 | 430 |

Chow and Hausman tests favor the fixed-effects specification, consistent with unobserved, time-invariant heterogeneity across subsidiaries. Model diagnostics indicate overall statistical significance and acceptable fit for a corporate-finance panel in a short window.

**Table 2. Fixed-effects panel estimates with portfolio interactions**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C (Constant) | -0.040962 | 0.009866 | -4.151864 | 0.0000 |
| CFO | -5.76E-14 | 1.72E-13 | -0.335064 | 0.7378 |
| CFF | 1.01E-13 | 3.01E-13 | 0.334606 | 0.7381 |
| CFI | -2.07E-13 | 2.82E-13 | -0.732830 | 0.4641 |
| Quick Ratio | -0.010871 | 0.018143 | -0.599186 | 0.5494 |
| CFO × Portfolio | 8.69E-14 | 8.09E-14 | 1.074804 | 0.2831 |
| CFF × Portfolio | -3.92E-14 | 1.39E-13 | -0.281985 | 0.7781 |
| CFI × Portfolio | 1.71E-14 | 1.28E-13 | 0.133449 | 0.8939 |
| Quick Ratio × Portfolio | 0.032323 | 0.008786 | 3.678841 | 0.0003 |

Model diagnostics: R-squared: 0.655789; Adjusted R-squared: 0.610378; S.E. of regression: 0.058098; F-statistic: 14.44137; Prob(F-statistic): 0.000000; Durbin–Watson stat: 1.086019; Mean dependent var: 0.031047; S.D. dependent var: 0.093077; Akaike info criterion: -2.742401; Schwarz criterion: -2.260417; Hannan–Quinn criter.: -2.552080; Log likelihood: 640.6162.

In the fixed-effects regressions, the quick ratio is positively and significantly associated with ROA, underscoring the near-term salience of liquidity for subsidiary performance. In contrast, CFO, CFI, and CFF are not directly significant, consistent with longer conversion lags or absorption by maintenance capex and fixed operating costs. Moderation tests show that portfolio type significantly strengthens the quick ratio–ROA relationship, particularly within connectivity and digital portfolios; interactions between portfolio type and CFO/CFI/CFF are not robust.

## 5. Discussion

The results indicate that short-term liquidity (quick ratio) is a reliable, portfolio-contingent driver of ROA in a capital-intensive, fast-moving telecom environment. While internal cash generation and financing flows matter strategically, their translation into profitability appears to operate over longer horizons—consistent with multi-year payback profiles for network infrastructure and digital platforms. The findings extend RBV by demonstrating that the productivity of a generic financial resource (liquidity) is contingent on portfolio characteristics.

## 6. Conclusion

We find that (i) the quick ratio is positively and significantly associated with subsidiary ROA and (ii) business portfolio type strengthens this relationship, especially in connectivity and digital units. Cash flow components (CFO/CFI/CFF) do not show direct near-term effects. The evidence supports a portfolio-contingent view of liquidity's performance relevance in telecom groups. Limitations include a single corporate group and a ten-year window. Future research should extend sectors and horizons and include moderators such as competitive intensity, leverage, and capex cycles.

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