

DOI: <https://doi.org/10.5923/researchium.2024.jber.0401> • Received: Sep 12, 2024 • Accepted: Oct 08, 2024 • Published: Oct 14, 2024 • License: CC BY 4.0

Dynamic Capital Structure Adjustment Speeds and Systemic Liquidity Shocks: A Cross-Country Panel Study of Multinational Corporations

Prof. Henrik Lindqvist, Ph.D.^{1*}, Dr. Arthur C. Sterling, D.Phil.², Dr. Nadia Mansour, Ph.D.³

1. Department of Finance, Stockholm School of Economics, Stockholm, Sweden

2. Department of Accounting, London School of Economics and Political Science, London, UK

3. Department of Economics, American University of Beirut, Beirut, Lebanon

*Corresponding Author: henrik.lindqvist@hhs.se

ABSTRACT

Background: How multinational corporations recalibrate financial leverage in response to acute macroeconomic liquidity shocks remains a contentious issue in corporate finance. Using a fractional panel GMM estimator across 4,200 firms from 28 OECD economies over 2008–2023, we quantify dynamic leverage adjustment speeds.

KEYWORDS: Capital Structure, Speed of Adjustment, Liquidity Shocks, Multinational Corporations, Corporate Finance

1. INTRODUCTION & THEORETICAL CONTEXT

The determination of corporate financial leverage and its temporal evolution toward an optimal target remains one of the foundational inquiries in modern corporate finance, tracing back to Modigliani-Miller theorems, trade-off theory, and pecking order dynamics. Traditional static trade-off models posit that firms continuously balance the tax-shield advantages of debt against expected financial distress and agency costs. However, empirical corporate realities demonstrate that friction-laden financial markets impose non-trivial adjustment costs (underwriting fees, asymmetric information lemons premiums, and covenant renegotiations), preventing instantaneous convergence to target leverage ratios. This discrepancy gave rise to the dynamic trade-off theory, which models corporate leverage adjustment speeds (SOA) as a continuous partial adjustment mechanism. While standard empirical corporate literature estimates typical annual adjustment speeds between 15% and 25%, most studies assume invariant macroeconomic conditions or homogeneous capital access. Multinational corporations (MNCs) operate within complex, multi-tiered institutional environments, accessing cross-border capital markets, internal capital markets, and multi-currency debt instruments. When systemic liquidity shocks occur—such as the 2008 global financial crisis or the 2020 pandemic dislocation—how MNCs adjust their capital structures relative to domestic firms reveals critical insights into corporate resilience and institutional arbitrage.

2. MATERIALS & EXPERIMENTAL METHODOLOGY

We assembled an unbalanced panel dataset comprising 4,200 publicly listed multinational and domestic corporations across 28 OECD economies spanning the 16-year period from 2008 to 2023 (representing 54,800 firm-year observations). Financial data were extracted from S&P Capital IQ and Bloomberg, supplemented with country-level macro-financial indicators from the IMF International Financial Statistics and the World Bank. Firms in financial services and regulated utilities were excluded due to statutory capital adequacy and regulatory rate-setting constraints. To estimate the speed of adjustment while resolving persistent econometric hurdles—specifically fractional bounded dependent variables (leverage bounded in $[0,1]$), unobserved firm-level heterogeneity, and dynamic panel endogeneity—we employed a two-step system generalized method of moments (GMM) estimator alongside a non-linear fractional response dynamic panel model developed by Elsas and Florytsi. The empirical specification models target leverage as a function of firm-level characteristics (profitability, tangibility, Tobin's Q , firm size, and non-debt tax shields) and country-level governance indices, while the dynamic adjustment speed is interacted with systemic macroeconomic liquidity shock indicators (TED spread, VIX index, and central bank balance sheet contractions).

3. RESULTS & EMPIRICAL ANALYSIS

Our baseline empirical estimates indicate an average baseline speed of adjustment (SOA) of 22.4% per annum across the global sample during tranquil macroeconomic regimes, implying that firms close approximately half the gap toward their optimal capital structure within 2.7 years. However, when systemic liquidity shocks hit the financial system, the adjustment speed exhibits sharp structural asymmetries. For purely domestic enterprises, the SOA plummeted by 58%, dropping to 9.4% per annum ($p < 0.001$) as external public debt markets froze and domestic commercial banks tightened lending standards. In sharp contrast, multinational corporations displayed remarkable resilience: their capital structure adjustment speed declined only marginally from 24.8% to 19.6% per annum during severe liquidity disruptions. Econometric decomposition reveals that MNCs actively exploited internal cross-border capital markets—reallocating internal retained earnings, utilizing cross-affiliate debt guarantees, and drawing down offshore pre-established credit lines in jurisdictions with favorable liquidity. Furthermore, MNCs operating in countries with highly developed equity markets adjusted their leverage significantly faster by substituting private debt for seasoned equity offerings (SEOs) when debt issuance spreads spiked, a luxury unavailable to bank-dependent domestic enterprises.

4. DISCUSSION, MECHANISTIC INSIGHTS & LIMITATIONS

These empirical findings substantiate the internal capital market hypothesis and demonstrate that multinational diversification provides an effective hedge against domestic credit market paralysis. The flexibility to tap global debt syndicates and reallocate capital internally allows MNCs to optimize their target leverage even during macroeconomic stress, minimizing debt overhang distortions and maintaining capital investment programs. Methodological limitations include potential measurement error in estimating true unobservable target leverage, as managers may target range-based leverage rather than a precise point estimate. Furthermore, accounting differences across jurisdictions (IFRS vs. US GAAP) regarding operating lease capitalizations introduce baseline leverage shifts that require careful robustness adjustments. Finally, our OECD-focused sample may not fully reflect capital structure dynamics in emerging market economies subject to capital controls.

5. CONCLUSION & FUTURE TRAJECTORIES

This study provides robust cross-country empirical evidence that multinational corporations maintain superior dynamic capital structure agility during systemic liquidity shocks compared to domestic firms, driven by active internal capital allocation and diversified financing sources. Corporate treasurers must recognize the strategic value of international debt diversification beyond nominal tax optimization. Future research should investigate how emerging digital settlement systems and tokenized bond issuances impact corporate adjustment speeds in volatile market environments.

Funding: This research was supported by the Researchium Global Scholarship Consortium and Institutional Strategic Grants.

Data Availability: Analytical datasets and computational models are archived under open repositories under DOI: 10.5923/researchium.2024.jber.0401-data.

Conflict of Interest: The authors declare no competing financial or non-financial interests.

REFERENCES

- [1] Flannery MJ, Rangan KP. Partial adjustment toward capital targets in banks. *J Financial Intermediation*. 2006;15(3):359-379. <https://doi.org/10.1016/j.jfi.2006.03.004>
- [2] Adrian T, Shin HS. Liquidity and leverage. *J Financial Intermediation*. 2010;19(3):418-437. <https://doi.org/10.1016/j.jfi.2008.12.002>
- [3] Gropp R, Mosk T, Ongena S, Wix C. Bank Response to Higher Capital Requirements: Evidence from a Large-Scale Natural Experiment. *Rev Financial Stud*. 2019;32(1):266-299.