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The unused debt capacity channel of financial flexibility in corporate investment decisions in a frontier market

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Abstract

This study investigates the effect of financial flexibility on investment decision of the Sri Lankan listed consumer services companies. It is based on the financial flexibility, capital structure, liquidity and financing constraints literature that suggests that firms with larger liquidity and unused borrowing power are better positioned to make investments when they occur. The study uses data from the financial statements of 30 listed consumer services companies during 2010–2025 and defines three measures, cash flexibility, unused debt capacity and composite financial flexibility index. Corporate investment is defined as scaled capital expenditure, using total assets lagged one year as the scale. The empirical analysis is based on one-year lags of the explanatory variables, firm and year fixed effects and robust standard errors. The results indicate that financial flexibility that lags investment has a positive and significant effect on investment. In isolation, unused debt capacity has a positive and statistically significant effect on investment, as does cash flexibility, though not statistically significant. This indicates that, beyond cash holdings, financial flexibility facilitates investment mainly through conservative leverage and spare borrowing capacity. But, no crisis interaction effects are significant across the various crisis definitions, suggesting that financial flexibility did not improve during the crisis years. The investment cash flow sensitivity model also does not imply that increased financial flexibility leads to a decrease in reliance on internal cash flow. Findings are resilient to different investment measures, winsorization levels and Driscoll-Kraay standard errors. The study provides frontier market evidence from Sri Lanka, and finds unused debt capacity to be the more relevant channel for investment support.

JEL Classification: G31, G32, M41

1. Introduction

Corporate investment is a key means by which companies build productive capacity, gain competitiveness, seize market opportunities, and generate value over the long run. However, investment decisions are not solely based on the availability of investment opportunities. They also rely on the availability of appropriate financing at the time of the opportunities. Capital market imperfections, information asymmetry, agency costs, and financing frictions can affect real investment decisions [1–5]. The ability of the firm to sustain investment spending would also depend on its internal capacity to generate liquidity or to borrow flexibly, such that firms with greater internal liquidity or borrowing capacity might be able to invest more than those with less[6–8]. Financial flexibility is thus an important notion in corporate finance. In general, it is a firm's capacity to borrow and restructure its financing portfolio at relatively low cost in response to unanticipated events or new investment opportunities [20, 44].

Some of the ways firms can maintain financial flexibility include cash, retained earnings, conservative leverage, maintaining credit capacity, flexible payout policy, and access to outside finance [6, 9–11]. Financial flexibility is also among the most important factors influencing corporate financing and capital structure decisions, as supported by survey evidence [12–14]. The financial flexibility literature suggests that firms might intentionally operate at a lower level of leverage than predicted by standard capital structure theory to preserve their borrowing power for future investments [8, 15–17]. This argument is especially relevant, given that many companies appear debt-constrained despite positive operating profits and low expected distress costs [18, 19] Marchica and Mura demonstrate that a conservative leverage policy subsequently leads to higher capital expenditures and abnormal investment, thus supporting the view that such a policy can improve firms' investment capability [8]. A theoretical explanation is given by Gamba and Triantis who demonstrate that financial flexibility can be valuable when external financing is expensive, growth opportunities are uncertain, and investment is partly irreversible [20].

It is particularly pertinent in emerging and frontier markets. Businesses in these markets tend to have less access to long-term financing, greater reliance on the banking system, lower market liquidity, macroeconomic instability, and higher financing costs than businesses in developed markets [21–24]. In these situations, financial flexibility can be an important strategic asset for firms to continue investing under unfavourable external financing conditions. For East Asian companies, Arslan-Ayaydin et al. demonstrate that financial flexibility enabled them to maintain investments and performance during crisis periods, particularly through conservative leverage policies [25]. Financially flexible firms experienced smaller investment declines during the global financial crisis, as evidenced by emerging-market evidence presented by Yung et al [26]. In recent emerging-market research, financial flexibility is also portrayed as a dynamic asset which can help inform firms' strategic decisions in times of uncertainty [27].

Sri Lanka serves as a valuable case study for the subject in the context of frontier markets. The listed firms in Sri Lanka are saddled with relatively shallow capital markets, bank-based financing, exchange rate volatility, inflationary pressures, interest rate fluctuations, and, at times, macroeconomic instability. These trends were exacerbated during the COVID-19 pandemic and the following economic downturn. Firms in the consumer services sector and in hotel-related activities were especially vulnerable, as they rely on tourism demand, are asset-intensive, and have limited interest in discretionary consumer spending, as well as import restrictions, exchange-rate fluctuations, and mobility restrictions. Hence, it is appropriate to examine this sector to investigate the link between financial flexibility and capital investment.

Although this is relevant, there is little evidence on the impact of financial flexibility on companies' investment decisions in Sri Lanka. Most studies on financial flexibility have focused on developed markets, a broad sample of emerging markets, or a multi-country crisis setting [8, 20, 25, 26, 28, 29]. In addition, previous studies indicate that the elements of financial flexibility can work differently. Having cash on hand can cushion the impact of cash-flow shocks and periods of distress, and unused debt capacity can provide flexibility to borrow for future investment needs [6, 8–10, 25]. This distinction has not been investigated in a smaller, more specific context of frontier markets.

To fill that gap, this study investigates the relationship between financial flexibility and corporate investment decisions among consumer services-listed companies in Sri Lanka. More specifically, the study examines the ability of lagged cash flexibility, lagged unused debt capacity, and the lagged composite financial flexibility index to predict subsequent capital investment. It also analyses if the impact of financial flexibility intensifies in crisis years and if financial flexibility decreases investment cash flow sensitivity.

The study has three contributions. First, it brings the field of financial flexibility and the investment literature to Sri Lanka, a frontier-market country that has been understudied. Second, it differentiates between cash-based flexibility and debt-capacity-based flexibility, enabling the study to determine which is more applicable for investment purposes. Third, it offers sector-specific data from companies in the listed consumer services sector, where the sector's fixed asset intensity makes investments highly significant.

The results indicate that lagged financial flexibility has positive and significant effects on the subsequent corporate investment. The impact is primarily due to unused debt capacity, not to cash. The findings indicate that the more conservative firms' leverage ratios and the higher their borrowing capacity, the more suitable they will be to invest next year. By contrast, cash flexibility is positive but not statistically different from zero, so the cash position could be used more for precautionary or liquidity-protection purposes than for financing capital

expenditure. The crisis interaction is not significant under any alternative definition, and the financial flexibility and reliance on the internal cash flow sensitivity model do not support the expectation that financial flexibility will reduce dependence on internal cash flow.

The remainder of the paper is organised as follows. The literature review is found in Section 2, where the hypotheses are also formulated. The data, variables and empirical methodology are explained in Section 3. The results are presented in Section 4. The results are presented in Section 5 in comparison with the existing literature. The paper ends in section 6.

2. Literature Review and Hypothesis Development

2.1 Financial flexibility and corporate finance policy

Financial flexibility has emerged as one of the key factors that might explain firms' observed financing behaviour. According to traditional trade-off theory, the level of leverage is determined by a trade-off between the tax advantages of debt financing and the expected distress costs of debt [1, 30, 31]. The Pecking order theory is based on asymmetric information and suggests that they generally prefer to use funds from a firm first, then borrow from a bank and then issue equity shares in the market to obtain funds when they need them [1, 2]. In addition, agency theory suggests that debt may work as a discipline on management, but also may cause underinvestment or risk-shifting incentives [32–34]. These theories help account for many financing decisions, but not for why so many companies keep their leverage ratios lower than usual.

This low-leverage behaviour can be attributed to financial flexibility. Graham and Harvey demonstrate that financial flexibility is a major factor influencing a company's debt policy [12]. The same survey evidence is reported by Bancel and Mittoo, and by Brounen et al. on international companies [13, 14] DeAngelo and DeAngelo state that one missing component of capital structure theory is financial flexibility, as firms prefer the ability to borrow when needed in the future [16]. Likewise, Byoun suggests that firms react to capital structure targets to maintain financial flexibility [17].

Gamba and Triantis present a theoretical model in which financing, investment, cash retention, and payout policies are determined jointly [20]. They find that financial flexibility depends on external financing costs, tax effect, growth opportunities, firm maturity, and investment reversibility in their model. This means that financial flexibility goes beyond being a passive balance-sheet item. A strategic capacity that makes it possible for companies to adjust to shocks and investment opportunities. DeAngelo et al. subsequently find that corporations tend to deleverage from high to more conservative leverage ratios, consistent with theories suggesting that firms are seeking to re-establish financial flexibility [15].

There are several ways to obtain financial flexibility. Cash holdings offer internal liquidity and have a positive effect on the need for external financing [6, 9, 35]. Having excess debt capacity provides the flexibility for a company to borrow in the future [8, 15]. Other factors such as credit lines, payout flexibility, and risk management policies also influence the financial flexibility and the corporate liquidity [10] [11]. Hence, it would be appropriate to examine financial flexibility in terms of not only liquidity but also leverage-related capacity.

2.2 Financial flexibility and investment ability

The capacity to invest and the investment opportunities are both necessary for corporate investment. Assuming perfect capital markets, internal and external finance would be perfect substitutes, and investment decisions would only be based on the expected return on the project [36]. Whereas, underinvestment occurs under conditions of high external finance costs due to asymmetric information and agency problems [2, 3, 34]. It may be easier for companies with greater financial flexibility to avoid underinvestment and pursue more valuable alternative projects.

Financial flexibility increases the ability to invest, as shown by Marchica and Mura [8]. They conclude that financially flexible companies have excess debt capacity and will then make larger capital and abnormal investments. They also reveal that new investment is financed through debt issuance, implying that companies retain the capacity to borrow to capitalise on investment opportunities. This evidence is relevant to this study, as a measure of financial flexibility is also employed in the present research: unused debt capacity.

Following this claim, Arslan-Ayaydin et al. further argue the case for the East Asian firms and crisis periods [25]. They demonstrate that lower leverage and, to a lesser extent, higher cash holdings are key to achieving financial flexibility in a firm. They conclude that financial flexibility enhances the firm's investibility during crises and that leverage-induced flexibility is particularly significant. Additionally, Fliers provides recent evidence that financial flexibility and debt capacity influence corporate investment policies, thereby confirming that capital structure decisions influence real investment policy [29].

The study predicts increased investment in future periods for financially flexible firms, based on this theoretical and empirical analysis. Thus, the first hypothesis is,

H1: The financial flexibility is positively associated with the corporate investment.

2.3 Cash flexibility and corporate investment

The study of cash holdings has been a long-standing area of research for liquidity and financial flexibility of the firm. Opler demonstrates that firms with greater growth opportunities have higher cash ratios, that firms with riskier cash flows have higher cash ratios, and that firms with more favourable access to capital markets have lower cash ratios [9]. Almeida et al. have suggested that when firms have restricted resources, they save more cash from cash flows because, when the cost of external finance is high, financing with cash is essential to fund future investments [6]. Bates et al. report that the amount of cash held by companies in the U.S. increased significantly and attribute this to increased cash-flow risk and adjustments in firm characteristics [35]. Denis and Sibilkov demonstrate that cash holdings are more valuable for financially constrained firms and that cash holdings are correlated with increased investment for constrained firms with strong hedging requirements [7].

The studies indicate that cash flexibility can lead to investment, as it does not rely on external funding. During periods of uncertainty, cash reserves can enable firms to sustain equipment investments, pay down debt, meet working capital needs, and prevent costly financing delays. In consumer services industries, companies maintain cash reserves to address demand and exchange-rate fluctuations, as well as financing restrictions in Sri Lanka.

However, cash does not always mean investment. Lins et al. provide evidence that firms use cash and credit lines differently. The former are associated with negative cash-flow shocks, while the latter are more closely related to future business opportunities [10]. Similarly, Arslan-Ayaydin et al. propose that the effect of cash on investment

could be an indirect effect of this cash insurance rather than a direct effect [25]. The empirical relationship between the two may therefore vary by context, as a positive relationship is theoretically expected.

The second hypothesis is,

H2: The cash flexibility is positively associated with corporate investment.

2.4 Debt capacity and corporate investment

One of the most important financial flexibilities is unused debt capacity. Firms that are less leveraged than the target firm or levered firms have a greater ability to borrow more in the future. Having some spare borrowing capacity can enable firms to invest at the right time without putting them at significant risk of financial distress or constraint [8, 15, 17]. The debt capacity argument goes hand in hand with the notion of conservative leverage strategy. Marchica and Mura demonstrate that firms that maintain spare debt capacity invest more later and finance their new investment with debt [8]. According to Arslan-Ayaydin et al., large cash holdings are a less effective means of achieving flexibility than conservative leverage, and leverage-related flexibility plays a significant role in investment during a crisis period [25]. The debt capacity indicator is also used as a key proxy of financial flexibility in the context of investment policy in Fliers [29].

This is a relevant argument to Sri Lankan consumer services companies. Property improvements, hotel expansions, equipment upgrades, and other important capital expenditures necessitate substantial capital financing for the asset-heavy sector. If there is unused debt capacity, firms may be able to access more bank finance or other forms of debt financing when investment needs arise. The third hypothesis is that:

H3: The unused debt capacity is positively associated with corporate investment.

2.5 Financial flexibility during crisis periods

Financial flexibility can be particularly useful in crises, as crises disrupt cash flows, increase uncertainty, restrict credit availability, and raise the cost of external funding. Campello, Graham and Harvey demonstrate that in response to the global financial crisis, financially constrained firms made substantial reductions in capital spending, technology spending and employment planning [43]. Corporate investment fell markedly following the financial crisis, particularly among companies affected by external finance-supply shocks, as demonstrated by Duchin et al [37]. Barry et al. demonstrate that corporate flexibility was a factor in employment and investment decisions during the COVID-19 crisis [28].

It is also found in the literature on financial flexibility during the crisis period. Arslan-Ayaydin et al. demonstrate that financially flexible firms were better able to exploit investment opportunities during the Asian financial crisis and were less dependent on internal funds [25]. Yung et al. show that the impact of the global financial crisis on investment was less for emerging-market firms that were financially flexible [26]. The results of these studies indicate that financial flexibility might become increasingly important in periods of declining external finance and increasing uncertainty.

The sample period witnessed severe crises for Sri Lankan firms, especially during the COVID-19 pandemic and the domestic economic crisis. Consumer services and related hotel businesses were vulnerable to adverse effects from tourism, mobility, inflation, interest rates, exchange rates, and import restrictions. It therefore seems reasonable to assume that financial flexibility might have had a greater impact on investment in crisis years.

The fourth hypothesis is that,

H4: The positive association between financial flexibility and corporate investment is stronger during crisis periods

2.6 Financial flexibility and investment-cash flow sensitivity

One of the most discussed topics of corporate finance is the investment-cash flow sensitivity. Based on this reasoning, Fazzari et al. suggest that firms with financing constraints will be more sensitive to internal cash flows because they are unable to use outside financing in place of internal funding readily [3]. However, Kaplan and Zingales cast doubt on the notion that greater investment-cash flow sensitivity necessarily implies greater financing constraints [38]. Subsequent research has continued to discuss the circumstances in which cash-flow sensitivity is linked to constraints, agency issues or investment opportunities [6, 39, 40]

The financial flexibility theory implies that flexible firms should have less need to rely on internal funds, as they can obtain external funds more readily. When firms have excess debt capacity, they should have lower investment-cash flow sensitivity because they can borrow when needed for investments, as opportunities arise [8]. Another study by Arslan-Ayaydin et al. also shows that flexible companies rely less on internal funds during crises [25].

The fifth hypothesis is,

H5: Financial flexibility weakens investment-cash flow sensitivity.

3. Methodology

3.1 Data and sample

The study employs annual financial statement data for consumer services firms listed in Sri Lanka for the years 2010–2025. The final dataset consists of 30 firms and 478 firm-year observations. This emphasis on the services sector is appropriate, since it includes asset-intensive firms, such as hotel and tourism-related firms, for which capital expenditure is economically significant. Sector-specific analysis limits the extent of heterogeneity compared with amalgamating firms from industries with widely varying investment cycles, asset structures, and financing requirements. After addressing missing values, lagged variables, and model requirements, the main regression sample contains 392 observations.

3.2 Variable measurement

The outcome variable is the corporate investment (capital expenditure per lagged total assets). Capital expenditure is commonly employed in corporate investment research since it represents the expenditures on long-term productive capacity [3, 6, 8, 37]

Investment_CAPEX = Absolute value of Capital Expenditures / Lagged Total Assets

Capital expenditures are reported as positive because financial statements tend to present capital expenditures as negative cash flow. The main independent variable is financial flexibility. The study follows prior research that defines financial flexibility as a blend of liquidity and borrowing capacity [8, 20, 25, 44] and relies on three proxies

namely cash flexibility, unused debt capacity, and a composite index. The flexibility of cash is measured as follows.

CashFlex = Cash and Short-Term Investments / Total Assets

Unused debt capacity is constructed using leverage,

Leverage = Total Debt / Total Assets

DebtCapacity = Year Median Leverage − Firm Leverage

PositiveDebtCapacity = max(DebtCapacity, 0)

The composite financial flexibility index is,

FFIndex = Z-score(CashFlex) + Z-score(PositiveDebtCapacity)

The higher the FFIndex, the more financially flexible. These variables are financial flexibility measures, which are one year lagged, so that investment in year t is assumed to be affected by the firm's financial situation in year t − 1. Lagged regressors also help minimise simultaneity bias but do not entirely remove endogeneity.

The controlled factors are operating cash flow, profitability, firm size, sales growth, tangibility, and liquidity. The influence of investment on internal funds, firm performance, scale, growth opportunities, asset structure and the liquidity conditions is highlighted by research on the factors affecting corporate investment [3, 6–9]

3.3 Empirical models

The baseline fixed effects model is,

$$Investment_{i,t} = \alpha + \beta 1\ FinancialFlexibility_{i,t-1} + \beta 2\ Controls_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{i,t}$$

where μ_i represents firm fixed effects and λ_t represents year fixed effects. Firm fixed effects account for the time-invariant nature of firm attributes such as ownership heritage, business model, asset base, and managerial style. Year fixed effects are used to control for common macroeconomic shocks that affect all firms in a given year.

The crisis interaction model is,

$$Investment_{i,t} = \alpha + \beta 1\ FFIndex_{i,t-1} + \beta 2\ Crisis_t + \beta 3\ FFIndex_{i,t-1} \times Crisis_t + \beta 4\ Controls_{i,t-1} + \mu_i + \varepsilon_{i,t}$$

A robustness version includes fixed effects for firms and for years. In that model, the standalone crisis dummy is absorbed by the year effects; however, the interaction term remains estimable.

The sensitivity model of the investment cash flow is,

$$Investment_{i,t} = \alpha + \beta 1\ CFO_TA_{i,t-1} + \beta 2\ FFIndex_{i,t-1} + \beta 3\ CFO_TA_{i,t-1} \times FFIndex_{i,t-1} + \beta 4\ Controls_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{i,t}$$

If the β3 is negative, it would lend credence to this notion that financially flexible companies are less reliant on internal cash flow.

3.4 Diagnostic and robustness approach

The study provides pooled OLS, fixed-effects, and random-effects estimates. Even though the Hausman test does not provide sufficient evidence to reject the random-effects specification, the fixed-effects model remains the preferred model because the goal here is to eliminate unobserved heterogeneity among firms over time. Heteroskedasticity is identified, and therefore robust standard errors are used. The study additionally performs serial correlation tests, Pesaran cross-sectional dependence tests, Pearson correlation tests, Spearman correlation tests, and VIF tests for the specific model.

Robustness checks comprise alternative measures of investment, alternative winsorization levels, exclusion of 2025 observations, replacement of ROA with operating profitability, and Driscoll-Kraay standard errors. The checks are significant because corporate finance panel data may suffer from outliers, heteroskedasticity, serial dependence, and unobserved firm-level heterogeneity [41, 42].

4. Results and Analysis

4.1 Descriptive analysis

Table 1
Descriptive Statistics of Key Variables

Variable	N	Mean	Median	Std. Dev.	P25	P75	Max
Investment_CAPEX_w	446.0000	0.0530	0.0266	0.0787	0.0096	0.0606	0.4579
CashFlex_lag_w	447.0000	0.0852	0.0409	0.1160	0.0131	0.1049	0.6540
FFIndex_lag_w	427.0000	-0.1140	-0.7482	1.4698	-1.2681	0.5460	4.3846
CFO_TA_lag	448.0000	0.0454	0.0409	0.0653	0.0075	0.0825	0.3066
ROA_lag	448.0000	0.0123	0.0151	0.0688	-0.0239	0.0528	0.3049
Size_lag	448.0000	8.2365	8.2664	1.3167	7.4051	8.9660	11.5894
SalesGrowth_lag	413.0000	0.4954	0.1240	4.2369	-0.0301	0.3579	84.4358
Tangibility_lag	442.0000	0.7536	0.8107	0.1960	0.6805	0.8797	1.8240
CurrentRatio_lag	448.0000	3.5160	1.1459	11.0650	0.5343	2.5388	152.4923

Note: "lag" indicates that the variable is measured using the previous year's value. "w" indicates winsorisation at the 1st and 99th percentiles

The final sample consists of 30 listed consumer services firms and 478 firm-year observations over 2010–2025. The regression sample is the main sample with 392 observations. The descriptive statistics reveal that capital investment is not uniform across firms. The mean and median of the winsorized investment ratio are 0.053 and 0.027, respectively, meaning that the typical firm invests about 2.7% of lagged total assets, and some firms invest significantly more.

Cash flexibility is also skewed. The average cash flexibility ratio is 0.085, and the median is 0.041. This indicates that it means only some firms have high cash reserves. The median tangibility ratio is 0.811, a high value

indicating that the sample is asset-intensive; this is similar to the balance sheet structures of companies in the hotel and consumer services sectors. The relevance of this asset intensity to the study of capital investment decisions in the sector lies in its nature. The relevance of this asset intensity for the study of the sector's capital investment decisions is its asset intensity.

4.2 Main regression findings

Table 2
Main Regression Results

Variable	M1 CashFlex	M2 Debt Capacity	M3 FFIndex	M4 Crisis	M5 Cash-flow Sensitivity	M6 Alternative Investment
CashFlex_lag_w	0.1295					
	(0.0826)					
PositiveDebtCapacity_lag_w		0.2024***				
		(0.0711)				
FFIndex_lag_w			0.0116**	0.0070	0.0097**	0.0115**
			(0.0051)	(0.0055)	(0.0048)	(0.0052)
Crisis1				-0.0160***		
				(0.0056)		
FFIndex_lag_w × Crisis1				-0.0004		
				(0.0026)		
CFO_TA_lag_w × FFIndex_lag_w					0.0652*	
					(0.0356)	
CFO_TA_lag_w	-0.0938	-0.0899	-0.0839	-0.0687	-0.0875	-0.0978
ROA_lag_w	0.1920**	0.1185	0.1070	0.2198***	0.1102	0.1220
Size_lag_w	-0.0078	0.0007	-0.0013	-0.0281**	-0.0015	-0.0030
SalesGrowth_lag_w	0.0010	0.0022	0.0020	0.0032	0.0014	0.0014
Tangibility_lag_w	-0.0863	-0.1228*	-0.0843	-0.0739	-0.0748	-0.0903
CurrentRatio_lag_w	-0.0006	0.0000	-0.0006	-0.0005	-0.0005	-0.0006
Observations	407.0000	392.0000	392.0000	392.0000	392.0000	392.0000
Firms	30.0000	30.0000	30.0000	30.0000	30.0000	30.0000
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	No	Yes	Yes
Adjusted R^2	0.2533	0.2569	0.2645	0.1990	0.2701	0.2745

*Note: Robust standard errors are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively*

According to Table 02, the main fixed-effects results indicate that financial flexibility positively affects corporate investment. The coefficient of FFIndex_lag_w is 0.0116 and significant at 5% level. This provides evidence for H1 and suggests that companies' financial flexibility in the year before the increase in capital investment is positively related to the subsequent increase in capital investment.

When financial flexibility is broken down into its two elements, the results indicate that the unused debt path is stronger. The coefficient for PositiveDebtCapacity_lag_w is 0.2024 and is significant at the 1% level, confirming H3. On the other hand, CashFlex_lag_w is positive but not significant, so that H2 is not supported.

This finding carries considerable theoretical importance. It implies that financial flexibility is a means of financing investment, not by using cash reserves but by relying on spare borrowing capacity. This finding corroborates the results of [8], who report that firms with spare debt capacity invest more, and those of [25], who show that leverage-based flexibility is more important for investment than cash-based flexibility. It also aligns with the findings of Fliers, which emphasise the importance of debt capacity in investment policy [29].

4.3 Crisis interaction findings

Table 3
Crisis Interaction Robustness with Year Fixed Effects

Crisis definition	FFIndex_lag_w	p-value	Interaction coefficient	Interaction p-value	Firm FE	Year FE	Adjusted R^2
Crisis1: 2020–2023	0.0131	0.0290	-0.0024	0.4359	Yes	Yes	0.2630
Crisis2: 2020–2022	0.0124	0.0237	-0.0016	0.5420	Yes	Yes	0.2626
Crisis3: 2022–2023	0.0123	0.0251	-0.0018	0.6197	Yes	Yes	0.2626

As shown in Table 03 above, the results of the crisis interaction do not support H4. In both the 2020–2023 and 2020–2022 crisis dummy definitions, the interaction between the FFIndex_lag_w and the crisis dummy is relatively unimportant across the three crisis definitions. The interaction between the FFIndex_lag_w and the crisis dummy is insignificant for both the 2020–2023 and 2020–2022 crisis dummy definitions, across the three crisis definitions. The overall result remains not statistically significant with the inclusion of year fixed effects.

This implies that financial flexibility plays a role in investment, though it did not increase during the crisis years. This contrasts with previous crisis-based evidence, which found that financial flexibility and/or reduced financing constraints facilitated the maintenance of real activity during crises [25, 26, 28, 43]. The result, however, is comprehensible within the confines of the Sri Lankan sectoral context. During the crisis period, hotel and consumer services companies faced macroeconomic constraints and industry-wide pressures that could have affected their investment decisions, even in the face of financial flexibility. The constraints can include disruptions to tourism demand, import limitations, rising construction costs, exchange-rate volatility, and high interest rates.

4.4 Investment-cash flow sensitivity findings

According to Table 02, Model 5, H5 is not supported by the investment-cash flow sensitivity model. What is found is a positive and only slightly significant (not negative and significant) interaction between CFO_TA_lag_w and FFIndex_lag_w. Thus, it is not evident that any evidence supports the hypothesis that financially flexible firms would be less reliant on internal cash flows when making investment decisions.

This result should be interpreted carefully because investment-cash flow sensitivity is theoretically debated, as the investment-cash-flow sensitivity is theoretically disputed. In Fazzari et al's findings, cash-flow sensitivity is

regarded as a proxy for financing constraints [3], while Kaplan and Zingales warn, however, that this is not necessarily the case [38]. In this study, it is possible that even financially flexible firms are still using internal funds, possibly because they are being cautious in their financing, lack access to longer-term external finance, or face high borrowing costs in Sri Lanka.

4.5 Robustness checks

Table 4
Robustness Checks

Robustness test	Coefficient on FFIndex_lag_w	p-value	Result
Unwinsorized	0.0137**	0.0101	Robust
Winsorized 1/99	0.0116**	0.0214	Robust
Winsorized 5/95	0.0096**	0.0152	Robust
Excluding 2025	0.0131***	0.0075	Stronger
Alternative DV: PPE purchase	0.0123**	0.0150	Robust
Alternative DV: Total investment	0.0115**	0.0260	Robust
ROA replaced by OPROA	0.0126**	0.0141	Robust
Driscoll-Kraay FE	0.0116**	0.0131	Robust
*Note: Robust standard errors are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively*			

The overall financial flexibility finding is strong through multiple checks. Under the unwinsorized specification, the 1/99 winsorized specification and the 5/95 winsorized specification, the coefficient of FFIndex_lag_w is positive and significant. It is still important to employ other investment indicators, such as fixed asset acquisition and total investment. The result is also significant when replacing ROA with operating profitability and when using Driscoll-Kraay standard errors.

Note that omitting 2025, importantly, enhances the result. The coefficient of FFIndex_lag_w rises from 0.0116 to 0.0131, and is significant at the 1% level. This indicates that the primary conclusion is not based on potentially incomplete 2025 data. Overall, the robustness checks reinforce the finding that financial flexibility positively impacts corporate investment.

4.6 Diagnostic results

Table 5
Diagnostic and Validity Checks

Test	Result	Interpretation
Hausman test	p = 1.000	Does not reject random effects; FE retained to control firm heterogeneity
Breusch-Pagan test	p = 0.0207	Heteroskedasticity present; robust SE appropriate
Durbin-Watson	1.7772	No severe serial correlation concern
FE residual AR(1)	p = 0.6603	No significant residual AR(1)
Pesaran CD	p = 0.2782	No significant cross-sectional dependence
ROA-OPROA correlation	0.8164	High; ROA used in the main model, OPROA in robustness
Model-specific VIF	Maximum around 2.54	No serious multicollinearity in actual models
Dynamic FE check	Lagged investment p = 0.0291	Investment persistence exists

The diagnostic tests support the reliability of the empirical models. The Breusch-Pagan test suggests the presence of heteroskedasticity; hence, robust standard errors are appropriate. There is no serious serial correlation as suggested by the residual AR(1) test and Durbin-Watson statistic. There is no significant cross-sectional dependence in the Pesaran CD test. VIF tests for specific models indicate that multicollinearity is not a major problem in the actual regression specifications when the composite FFIndex is not included alongside the individual variables.

The Hausman test is inconclusive. However, a key point is that fixed effects are kept in place, as they help identify unobserved firm-level heterogeneity that the study seeks to control for. This is in line with the reasoning behind the corporate finance panel studies, in which firm-specific attributes can affect both financial policy and investment activities.

5. Discussion

The results suggest that financial flexibility positively impacts corporate investment among Sri Lankan listed consumer services companies. FFIndex_lag_w has a positive and significant coefficient, meaning that the more flexible the financial statement of the previous year, the more the firms invest in the following year. This confirms a financial flexibility argument that suggests that firms can take advantage of investment opportunities when financing frictions are present [8, 20, 44].

Most importantly, the debt capacity is the key factor in the relationship, as only a portion of it is used. The positive and significant impact of Positive DebtCapacity_lag_w indicates that companies with conservative leverage have an advantage in pursuing new investments. This result is close to the result of Marchica and Mura, who argue that debt capacity is low [8]. It also corroborates the findings of Arslan-Ayaydin et al. which suggest that financial flexibility should be achieved primarily through conservative leverage policies [25], and the findings of Fliers who indicate that debt capacity plays an important role in investment policy [29].

The small cash-flexibility result does not indicate that cash is unimportant. Instead, it indicates that cash positions could be held for precautionary reasons, and therefore do not necessarily contribute directly to financing. This interpretation is in line with Opler, Almeida et al., Bates et al., and Lins et al., who demonstrate that firms maintain cash to buffer against uncertainty, cash flow volatility and financing constraints [6, 9, 10, 35]. In Sri Lankan consumer services, cash can be retained for other purposes, such as liquidity protection, debt servicing, working capital, and survival during downturns, rather than being spent as capital expenditure.

The negligible crisis interaction suggests that financial flexibility was not found to be more important during the crisis period. Although previous research indicates that flexibility can be particularly beneficial during crises [25, 28, 37, 43], the constraints faced by the Sri Lankan consumer services sector may have outweighed the benefits of firm-level flexibility. This is possible since demand for tourism may have been low during the crisis, exchange rates may have been volatile, import restrictions were in place, construction costs were high, and uncertainty was rife.

The investment-cash flow sensitivity result also brings some nuances. That there was no negative relationship between flexibility and cash flow implies that flexible firms were not necessarily less reliant on internal cash flow. This could be a reflection of prudent financing and access to external financial resources. It also reflects the prudence of Kaplan and Zingales, who caution against reading too much into investment-cash flow sensitivity as a reflection of financing constraints [38].

In sum, the results are consistent with the debt-capacity interpretation of financial flexibility. Financial flexibility is important for investment, but in this sample, it is primarily through unused borrowing capacity rather than cash holdings. This paper contributes to the financial flexibility literature by providing a sector-specific view of a frontier market. It proposes that investing with conservative leverage can be an effective enabler for listed consumer services companies in Sri Lanka.

6. Conclusion

The purpose of this study was to investigate how financial flexibility affects the investment decisions of consumer services companies listed on the Colombo Stock Exchange from 2010 to 2025. The study calculated cash flexibility and unused debt capacity from financial statement information, as well as a composite financial flexibility index. The analysis was empirical and included one-year-lagged explanatory variables, firm fixed effects, year fixed effects, robust standard errors, and multiple robustness checks.

The results indicate that financial flexibility has a positive and significant effect on the company's investment. This is primarily due to the unused debt capacity, not cash holdings. This suggests that companies with conservative leverage ratios and a cushion of available borrowing power are in a stronger position to make additional investments. There is positive cash flexibility, but it is not statistically significant, implying that cash holdings may be allocated more to precautionary liquidity management than to capital expenditure.

The findings from the crisis interaction show no evidence of an increase in the importance of financial flexibility during crisis years. The investment-cash flow sensitivity model is also inconsistent with the notion that financial flexibility reduces reliance on internal cash flow. It is concluded that H1 and H3 are supported, whereas H2, H4, and H5 are not.

The study adds to the literature in the following ways. First, it offers frontier-market evidence from the Sri Lankan context, which has received less attention in the financial flexibility literature. Second, it demonstrates that financial flexibility is most closely associated with unused debt capacity, which in turn is most closely associated with corporate investments. Thirdly, it offers industry-specific information on publicly listed consumer services companies, whose investment decisions are economically relevant due to their high asset intensity.

There are some limitations associated with the study. The findings cannot be applied to the overall population of listed companies in Sri Lanka because the sample is restricted to listed consumer services companies, and further testing is required. Debt capacity is not based on an estimated debt-leverage model, as opposed to the annual sample median. Lagged variables, firm fixed effects, year fixed effects and robustness checks mitigate endogeneity concerns, but do not rule out causality. Market-based growth opportunities, such as Tobin's Q, are also not included in the study, and macroeconomic controls, such as interest rates, inflation, exchange rates, and tourism arrivals, are not included either.

To extend the study, future research can include all non-financial CSE-listed firms, estimate industry-year target leverage, add macroeconomic variables, implement system GMM, and investigate whether financial flexibility impacts investment efficiency, firm value, or post-investment performance. Future studies can also examine whether the value of financial flexibility varies with the investment requirements of different sectors, ranging from asset-heavy to less asset-intensive sectors.

Declarations

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Ethics approval.

Not applicable. This study uses publicly available firm-level financial-statement data and does not involve human participants, human data, animals, or biological materials.

Author contributions

Both M.G. and N.J.D. made equal contributions to the study. Both authors participated in the conceptualisation, design of the research, interpretation of the results, in writing the manuscript, critical revision and final approval of the manuscript. Data was collected and the empirical analysis was done by M.G. N.J.D. offered guidance on the supervisory aspects, reviewed the analytical approach, and helped to refine the manuscript.

Competing interests

The authors have no competing interests.

Data availability

The data used in this study were obtained from publicly available annual reports and financial statements of companies listed on the Colombo Stock Exchange. The processed dataset and analysis code are available from the corresponding author upon reasonable request.

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