

Article

Dividend Policy Determinants in New Zealand-Listed Companies: Financial Performance, Board Gender Diversity, and Firm Operational Scope

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Abstract

Among developed-market stock exchanges, the NZX is distinctive. Its imputation credit system and capital-gains-tax exemption create financial incentives for firms to distribute earnings that have no close parallel elsewhere, yet what actually drives payout decisions at the firm level has never been tested in a multivariate panel framework. We analyzed 116 NZX-listed companies from 2017 to 2023. The results show that revenue and net profit prove to be the dominant positive predictors of dividend payout; cash flow and shareholders' equity are negatively associated with the payout, suggesting that the firms prioritize capital retention in a manner consistent with the pecking order theory. Market capitalization adds nothing once earnings quality is accounted for in the model. Firms in which women occupied more than half of board seats paid, on average, seventeen times more in dividends than those with minimal female representation, a gap sustained without exception across all seven years. Domestic firms outpaid multinational firms throughout and, by 2023, had exceeded their own pre-period baseline, while multinationals had not. Our findings have implications for income-focused investors, for boards weighing payout strategies, and for policymakers assessing the case for diversity requirements.

Keywords: dividend policy; board gender diversity; domestic vs. multinational firms; New Zealand Stock Exchange; Panel Regression; Corporate Governance



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1. Introduction

Dividend policy has generated considerable debate, yet four decades of work have not produced a settled consensus (Berk & DeMarzo, 2017). The dividend policy governs the allocation of profit between reinvestment in the business and distribution to shareholders, and the decision is shaped by the company's growth stage, liquidity position, and the broader economic environment in which it operates (Wirama et al., 2024; Arndt, 2020). In small, open economies with distinctive tax and governance arrangements, the determinants of payout can look quite different from those predicted by the US- and UK-dominated literature (Kraiger & Anderson, 2019).

New Zealand is a useful test case. Wellalage and Locke (2013) describe it as a stable, trade-exposed economy with deep capital markets and strong governance norms, and

the NZX ranks among the highest dividend-yielding equity markets in the developed world: [Qiu and Li \(2023\)](#) document average annual yields of 2.21% against a developed-market benchmark of 1.22%. New Zealand's imputation credit system eliminates double taxation on distributed earnings, and domestic investors pay no capital gains tax on shares ([McDowell et al., 2020](#)). Under the imputation system, corporate tax paid at the firm level is credited to shareholders, so that dividends distributed from taxed earnings carry a tax credit rather than being taxed again in shareholders' hands. Combined with the absence of a capital gains tax, this places distributed earnings on a strictly more favourable footing than retained earnings for domestic investors, an arrangement that has no direct parallel in the US, UK, or most European markets ([Gilbert & Tourani-Rad, 2024](#); [McDowell et al., 2020](#)). Both features push firm incentives toward generous dividends in a way that has no close parallel elsewhere. What actually drives payout decisions within this environment, and whether board composition or operational geography moderates them, has attracted little systematic attention ([Kraiger & Anderson, 2019](#); [Gilbert & Tourani-Rad, 2024](#)). This matters because New Zealand's listed companies are known for shareholder-friendly payout practices, and the NZX has consistently attracted income-focused investors precisely because of the stability and generosity of those distributions ([Gilbert & Tourani-Rad, 2024](#); [Qiu & Li, 2023](#)).

We pursue three questions: which financial variables predict NZX dividends; whether the proportion of female directors has a measurable payout effect (categorical evidence exists ([Duong et al., 2020](#); [Shaheen et al., 2023](#)), but no continuous-variable panel framework has been used); and whether domestic NZX firms consistently outpay multinational firms.

The financial results align with international evidence. The governance findings do not: a seventeen-fold raw dividend gap between the most and least gender-diverse board categories, held without interruption across seven years, was not obvious from prior evidence in the New Zealand context. And neither was the divergence in recovery trajectories between domestic and multinational firms. The panel spans 2017–2023, encompassing the full arc of the COVID-19 disruption, a period during which many firms globally reduced distributions in response to pandemic-era uncertainty ([H. Ali, 2022](#); [Tinungki et al., 2022](#)), while others in more resilient sectors held firm or increased payouts, making the NZX an unusually informative setting in which to observe how payout behaviour responds to sustained macroeconomic stress.

Beyond the theoretical questions, the findings carry direct relevance for stakeholders navigating future economic uncertainty: shareholders deciding which sectors to stay in, managers calibrating payout strategy under stress, and policymakers assessing whether governance structures hold up when conditions deteriorate ([Shaheen et al., 2023](#); [Kraiger & Anderson, 2019](#)).

The remainder of the paper is organized as follows. Section 2 reviews theory and evidence. Section 3 describes data and methods. Sections 4 and 5 present and interpret results. Section 6 concludes.

2. Theoretical Background and Literature Review

2.1. Theoretical Framework

Signalling theory holds that dividend announcements carry information about management's earnings expectations that weaker firms cannot credibly imitate ([Yasar et al., 2020](#)). Rising payouts signal health; cuts say the opposite. Companies with the potential to grow can increase dividends to emphasise that they will increase shareholder value in the future ([Bossman et al., 2022](#)). In markets like New Zealand where investor protections are strong and yields are structurally elevated, this signal carries extra weight ([Said, 2024](#); [McDowell et al., 2020](#)).

The Bird-in-Hand theory holds that shareholders prefer a certain return today over an uncertain one tomorrow (Jaara et al., 2018; M. S. Ali, 2020). Shareholders prefer dividend payments over capital gains, as they can receive dividends immediately without waiting for the share price to increase (Muriungi & Mwangi, 2020). In New Zealand, where capital gains are not taxed, however, dividends win not on tax grounds but on certainty, reinforced further by the imputation credit system (Gilbert & Tourani-Rad, 2024).

Miller and Modigliani (1961) showed that in frictionless markets, the dividend and retention split has no effect on firm value (Berk & DeMarzo, 2017). The irrelevance theory supports the view that increasing or decreasing a dividend does not impact the company's profitability or share value (Theiri et al., 2023). By retaining earnings, companies preserve liquidity and better overcome uncertainties (AlGhazali & Yilmaz, 2023). Real-world frictions generate the predictions we test below; the irrelevance result still earns its place as a benchmark, since any variable that is insignificant once earnings are in the model is behaving precisely as the theorem predicts.

The pecking order theory adds a capital-structure logic: firms tap retained earnings first, borrow if they must, and pay dividends from what remains (Berk & DeMarzo, 2017). The theory suggests that companies should use retained earnings to fund investments in the first place, turning to debt and equity only when internal funds are insufficient (Bossman et al., 2022). During the COVID-19 pandemic, many companies faced cash flow issues, leading to a preference for reducing dividends or suspending them in favour of conserving internal funds for operational needs (Samaddar & Bhunia, 2021). The empirical footprint is a negative relationship between payout and the intensity of internal financing demands.

These four theories operate jointly rather than in isolation. Signalling and Bird-in-Hand generate the pressure to pay dividends; irrelevance and pecking order theories describe the constraints under which that pressure is realised. The next three subsections review the empirical evidence on how these forces map onto three firm-level channels tested in this paper: the underlying financial determinants that shape dividend capacity (Section 2.2); board gender diversity, which shapes the governance-driven appetite for distribution (Section 2.3); and firm operational scope, which shapes the risk buffer required against cross-border uncertainty (Section 2.4).

2.2. Financial Determinants of Dividend Policy

Profitability predicts dividend payout across markets. A tight EPS–DPS link is documented across multiple national settings (Bhayani & Ajmera, 2019; Sunaryo, 2020); panel work from France (Theiri et al., 2023) and Morocco (Boumlik et al., 2023) confirms revenue and net profit as the dominant positive drivers, with shareholders' equity entering negatively. The relationship between EPS and DPS reflects a company's dividend policy and its distribution strategy to shareholders (Bhayani & Ajmera, 2019). Debt tends to be positive in signalling environments: maintaining the dividend credibly demonstrates cash generation capacity (Yasar et al., 2020). Free cash flow is less settled: unlike EPS, which can be affected by non-cash items such as depreciation and amortisation, FCF provides a clearer picture of the liquidity available to fund dividends (Neves et al., 2020). Companies with strong FCF are better positioned to continue paying dividends even when profitability declines (Neves et al., 2020; Chen & Fu, 2011), though the sign reverses when internal capital demands are heavy, as pecking order logic predicts.

Financial determinants explain much of the variation in dividend levels but leave open a second question: whether governance structures independently affect how earnings are distributed. This is where board composition enters into the picture.

2.3. Board Gender Diversity and Dividend Policy

Gender-diverse boards tend to be more independent, push back harder on management, and are more cautious on risk (Tarighi et al., 2023); better-governed boards also deliver stronger financial outcomes in Pacific-Basin markets (Low et al., 2015). Female representation raises dividends among Chinese firms (Shaheen et al., 2023); the same association is confirmed across multiple markets (Duong et al., 2020). A bird-in-hand channel also matters. Governance-minded boards may simply prefer a certain distribution over speculative reinvestment (M. S. Ali, 2020; Jaara et al., 2018). Khan et al. (2022)'s result in Turkey shows that the relationship is conditional on institutional context: in that sample, most female directors represented controlling families and served family rather than broader shareholder interests (Kim et al., 2020). New Zealand sits toward the stronger end of that institutional spectrum (McDowell et al., 2020; Gilbert & Tourani-Rad, 2024).

A parallel question arises for the geographic reach of firm operations. Where governance determines the appetite for distribution, operational scope determines the risk buffer that management holds against operational uncertainty, and the pecking order theory predicts a systematic difference between purely domestic firms and those exposed to cross-border risk.

2.4. Domestic vs. Multinational Firms

Domestic firms tend to pay more than multinationals (Oliveira & Juca, 2021). Multinational companies, considering foreign markets' political and fiscal uncertainty, are more likely to minimise dividends during crises (Oliveira & Juca, 2021; Attig et al., 2021). Crossing borders brings foreign exchange exposure, multi-jurisdictional compliance, and supply-chain risks that rational managers hedge with larger earnings buffers (Attig et al., 2021). Operating entirely within New Zealand's single-currency, stable environment re-moves those pressures (Wellalage & Locke, 2013). Healthcare and real estate firms, which gravitate toward domestic operations, also run off captive revenue streams with low cash-flow volatility, so part of what looks like a geography effect is really a business-model effect (Cejnek et al., 2021; Cheema et al., 2023).

2.5. Hypotheses

The theoretical framework and the empirical evidence reviewed above support three testable propositions. The first follows directly from the signalling theory and the pecking order theory: profitability and internal financing pressures should carry the strongest firm-level explanatory power for dividend payout, with earnings-related measures entering positively and cash-retention pressures entering negatively.

H1. *Financial performance variables, in particular revenue and net profit, are positively associated with NZX dividend payouts, while cash flow and shareholders' equity are negatively associated with them.*

The second proposition follows from agency theory and the bird-in-hand channel: in institutional environments that reward payout with tax efficiency and strong minority protections, boards with stronger governance orientation should distribute more cash. Female board representation has been used across the literature as a proxy for this orientation.

H2. *NZX firms with higher proportions of female directors on the board are associated with higher dividend payouts.*

The third proposition follows from the pecking order applied to the international-diversification literature: firms carrying cross-border operational exposure should retain

larger precautionary cash buffers than purely domestic firms, translating into lower dividend payouts.

H3. *Domestic NZX-listed firms distribute higher dividends than NZX-listed multinationals, and the gap widens under macroeconomic stress.*

H1 is tested through the panel fixed-effects regression (Section 4.4). H2 and H3 are examined through disaggregated descriptive analysis (Section 4.1), because both gender and OpScope are approximately time-invariant within firms across the seven-year panel and would be absorbed by the firm fixed effects. The descriptive comparisons therefore identify robust empirical associations that warrant further investigation, without asserting causal identification.

3. Data and Methodology

3.1. Sample and Data Collection

Annual financial data were drawn from Refinitiv (Refinitiv, 2022) and cross-verified against audited annual reports. Of the 174 NZX securities, we exclude 40 ETFs, 16 other fund structures, and two companies (with missing data), leaving 116 firms and 816 firm-year observations over 2017–2023 (Bell et al., 2019). Exchange-traded funds and other fund structures are investment products designed to provide diversified investment opportunities rather than operating companies and were therefore excluded (Yuan & Zeng, 2023). Companies listed on the NZX before 2017 were selected to ensure sufficient historical data, allowing assessment of COVID-19 effects over a period capturing pre-pandemic and post-pandemic financial performance (Boumlík et al., 2023). The financial data cover 2017–2023, categorised as pre-COVID (2017–2019), during COVID (2020–2022), and post-COVID (2023) (Curtis et al., 2024). This seven-year window is chosen to span a complete economic cycle: a pre-COVID baseline, an exogenous pandemic shock, and a recovery year. Extending further back would cross the 2013 imputation credit reforms and the 2015 Financial Markets Conduct Act, which materially altered the regulatory environment for NZX issuers (McDowell et al., 2020; Gilbert & Tourani-Rad, 2024). The resulting 816 firm-year observations provide adequate power for panel fixed-effects estimation (Bell et al., 2019).

Secondary data were used throughout. Financial databases and audited annual reports provide reliable, comprehensive, and objective data over long periods, allowing robust statistical analysis and a historical perspective that primary data collection cannot readily achieve (Tarighi et al., 2023; Qiu & Li, 2023). The data were verified against audited financial statements (Boumlík et al., 2023).

3.2. Variables

Our dependent variable is dividend paid, i.e., total dividend paid (DIV) in NZD millions, including both interim and final distributions (Kraiger & Anderson, 2019).

Our independent variables are eight accounting and market variables following the prior literature, i.e., CA, Db, CF, REV, NP, SE, MCAP, and A. Current assets and free cash flow indicate liquidity (Arsal, 2021); total debt and shareholders' equity reflect financial consistency (Ali Taher & Al-Shboul, 2023; Ataünal et al., 2016). Full definitions are in Table 1.

The variable set is deliberately structured to capture the four channels through which the theoretical framework predicts dividends respond. Profitability is measured by both revenue (REV) and net profit (NP) rather than one alone: REV captures the scale of a firm's core business activity, while NP isolates profit quality after operating costs, interest, and taxes. This distinction matters empirically because signalling theory identifies sustainable

earnings rather than gross activity as the credible dividend signal (Yasar et al., 2020; Miller & Modigliani, 1961), and separating the two allows the regression to identify which channel dominates on the NZX. *Liquidity* is captured by current assets (CA) and cash flow (CF), covering both the balance-sheet stock and the flow dimensions of a firm's capacity to meet distributions (Neves et al., 2020; Arsal, 2021). Capital structure and internal financing capacity are measured by total debt (Db) and shareholders' equity (SE), which together track the two pecking order pressures that constrain dividend payout (Berk & DeMarzo, 2017; Boumlik et al., 2023). Scale and maturity are captured by market capitalisation (MCAP) and firm age (A), which control for firm size and lifecycle effects independently of accounting earnings (Kanakriyah, 2020). Alternative candidates such as return on assets, return on equity, and the debt-to-equity ratio were considered but excluded to avoid mechanical collinearity with the primary variables (NP and SE already carry the numerators of ROE; Db and SE carry the components of the debt/equity ratio) and because the VIF diagnostics in Section 4.3 confirm that the chosen set already satisfies the multicollinearity threshold of 10 (Boumlik et al., 2023).

Table 1. Variable definitions and rationale.

Symbol	Variable	Definition and Rationale
<i>Panel A: Panel regression variables</i>		
DIV	Dividend paid	Total annual dividend distribution (NZD m), interim and final combined. Dependent variable; directly captures cash returned to shareholders and is the primary shareholder-value metric in the imputation credit context (Kraiger & Anderson, 2019).
CA	Current assets	Cash, inventories, and trade receivables; proxy for short-term liquidity available to service dividend payments (Arsal, 2021).
Db	Total debt	Short- and long-term borrowings; included because leverage affects distributable cash and, in signalling models, dividend commitments (Yasar et al., 2020).
CF	Cash flow	Net cash flow from operating, financing, and investing activities; captures pecking order pressure on distributions (Neves et al., 2020).
REV	Revenue	Total annual revenue from goods and services; scale measure of business activity (Boumlik et al., 2023).
NP	Net profit	Earnings after all expenses and taxes; distinct from revenue in that it isolates profit quality, which signalling theory identifies as the dominant dividend driver (Miller & Modigliani, 1961; Yasar et al., 2020).
SE	Shareholders' equity	Total assets minus total liabilities; proxy for internal financing capacity under the pecking order (Theiri et al., 2023).
MCAP	Market capitalisation	Shares outstanding $\times$ closing price; captures firm size and market valuation independently of accounting earnings (Kanakriyah, 2020).
A	Firm age	Years since incorporation, base year 2023; controls for lifecycle effects on dividend behaviour (Neves et al., 2020).
Gender	Board gender diversity	Proportion of female directors on the board (continuous, 0–1); descriptive variable (Duong et al., 2020; Shaheen et al., 2023).
OpScope	Operational scope	Dummy: 1 = exclusively domestic New Zealand; 0 = multinational; descriptive variable (Attig et al., 2021).
<i>Panel B: Pearson correlation variables</i>		
DPS	Dividend per share	Total dividend/shares outstanding (Sunaryo, 2020).
EPS	Earnings per share	Net income/shares outstanding (Bhayani & Ajmera, 2019).
DPR	Dividend payout ratio	Total dividend/net income (Tinungki et al., 2022).
DY	Dividend yield	DPS/market price per share (Qiu & Li, 2023).
FCF	Free cash flow	Cash flow from operations + non-cash expenses – capital expenditure – Δ WC (Theiri et al., 2023).
CR	Current ratio	Current assets/current liabilities (Boumlik et al., 2023).

Note. All financial data sourced from Refinitiv and cross-verified against audited annual reports. Panel A lists variables used in the fixed-effects regression (Equation (1)); Panel B lists variables used in the year-wise Pearson correlation analysis (Section 4.2). Gender and OpScope are examined descriptively (Section 4.1) rather than entered as regressors because both are approximately time-invariant within firms across the seven-year panel and would be absorbed by the firm fixed effects.

Gender is our governance variable, the continuous proportion of female directors, which avoids the arbitrary cut-point problem of binary coding (Duong et al., 2020; Shaheen et al., 2023).

OpScope (Operational scope) is a dummy variable coded as one for firms whose revenue derives exclusively from domestic New Zealand operations and zero for multinationals, based on geographic revenue disclosures in annual reports (Attig et al., 2021).

For correlation analysis (the year-wise Pearson analysis), the following variables i.e., DPS, EPS, dividend payout ratio (DPR), dividend yield (DY), free cash flow (FCF), and current ratio (CR) were constructed using standard formulae (Bhayani & Ajmera, 2019; Tinungki et al., 2022).

3.3. Estimation Strategy

For descriptive analysis, the following statistics are used i.e., Means, standard deviations, and maxima for dividends, net profit, and market capitalisation are disaggregated by sector, gender diversity bracket, and operational scope (Field et al., 2012).

Correlation analysis are conducted by estimating year-by-year Pearson coefficients between DPS and six ratios are interpreted using the magnitude thresholds proposed by Schober et al. (2018). Correlation analysis examines the strength and direction of the linear relationship between variables (Montgomery & Runger, 2010).

The following panel regression model with fixed-effects is estimated:

$$DIV_{it} = \alpha_i + \beta_1 CA_{it} + \beta_2 Db_{it} + \beta_3 CF_{it} + \beta_4 REV_{it} + \beta_5 NP_{it} + \beta_6 SE_{it} + \beta_7 MCAP_{it} + \beta_8 A_{it} + \varepsilon_{it} \quad (1)$$

where α_i absorbs all time-invariant firm-level heterogeneity, including *Gender* and *OpScope*, which are examined through the disaggregated descriptive analysis in Section 4.1. The model is estimated using the within (fixed-effects) estimator in R-Studio's $\pi\lambda\mu$ package with HC1 robust standard errors (Tinungki et al., 2022).

The following diagnostic tests are used. Multicollinearity is assessed using Variance Inflation Factors (VIF threshold of 10; Boumlik et al., 2023), serial correlation via the Durbin–Watson statistic (Durbin & Watson, 1951), and heteroskedasticity via the Breusch–Pagan test (Boumlik et al., 2023). A Hausman test determines whether fixed or random effects is the more appropriate specification (Hausman, 1978; Anh & Gan, 2021; Yahya, 2023).

4. Results

4.1. Descriptive Statistics

4.1.1. Overall Dividend Trends

Table 2 and Figures 1–3 set out the panel trajectories. Mean dividends fell from NZD 42.87 m in 2017 to NZD 31.37 m in 2021, then recovered to NZD 43.47 m by 2023. Net profit rebounded far more sharply, reaching NZD 75.11 m by 2023. The widening post-2021 wedge between earnings and distributions reflects capital-retention behaviour under the pecking order: firms were choosing to retain, not signal.

Table 2. Descriptive statistics: dividends, net profit, and market capitalisation (NZD millions).

Parameter	2017	2018	2019	2020	2021	2022	2023
<i>Panel A: Dividend paid</i>							
Mean	42.87	41.33	37.64	35.98	31.37	39.50	43.47
Std. dev.	96.80	86.71	79.08	80.10	68.00	80.06	89.13
Maximum	530.00	486.00	500.00	546.00	433.00	449.00	486.00
<i>Panel B: Net profit</i>							
Mean	55.56	45.84	41.57	38.88	65.64	76.04	75.11
Std. dev.	104.95	106.32	135.86	117.95	155.47	194.03	258.53
Maximum	745.00	650.10	523.50	659.00	631.70	1169.30	1714.30

Table 2. Cont.

Parameter	2017	2018	2019	2020	2021	2022	2023
<i>Panel C: Market capitalisation</i>							
Mean	1022.73	1052.77	1335.35	1513.82	1488.72	1307.25	1307.02
Std. dev.	1910.01	1932.82	2571.63	3146.21	2862.31	2589.42	2698.76
Maximum	10,416.50	8616.00	12,721.73	18,995.20	18,810.46	13,519.20	14,293.20
N	116 companies; 816 company-year observations						

Note. Data sourced from Refinitiv (accessed 14 May 2024) and verified against audited annual reports. Values in NZD millions.

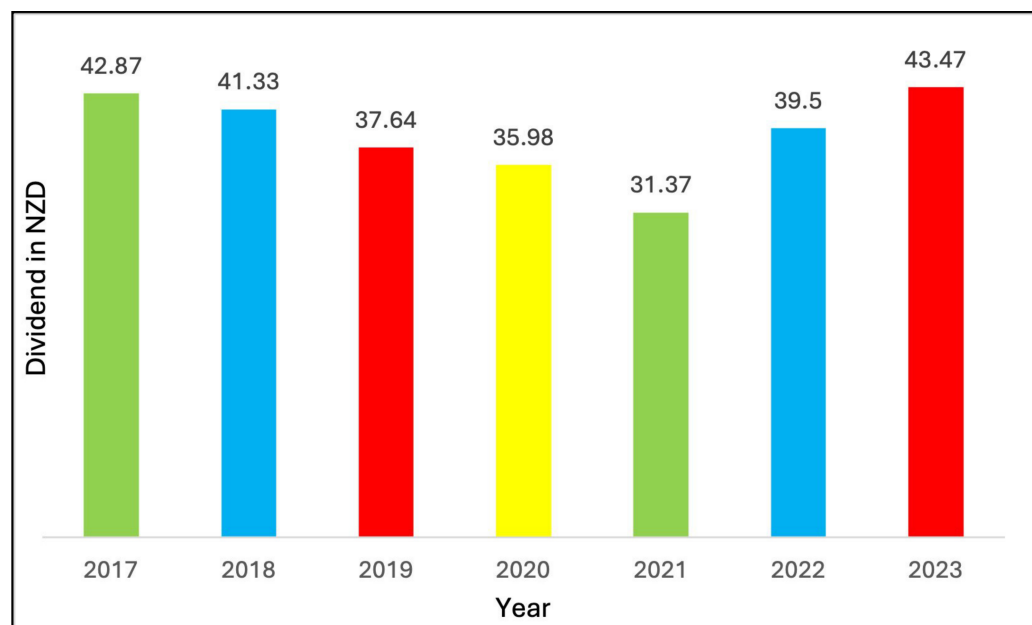


Figure 1. Mean annual dividend paid by NZX-listed companies, 2017–2023. Values in NZD millions; N = 116 per year. Data sourced from Refinitiv.

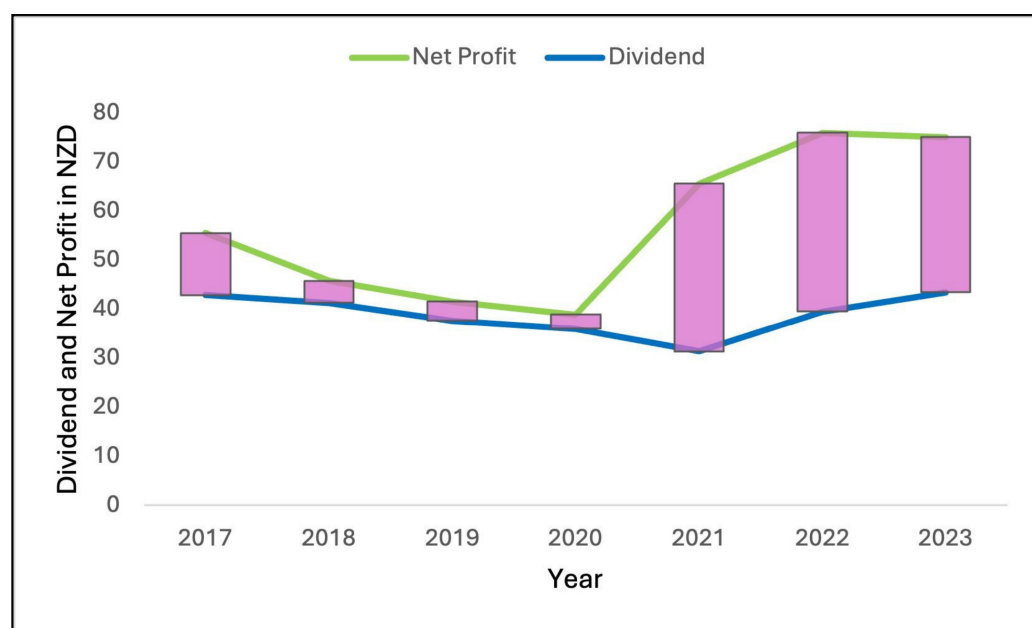


Figure 2. Trends in mean net profit and mean dividend, 2017–2023. Values in NZD millions. The widening gap post-2021 is consistent with pecking order capital retention behaviour. Data sourced from Refinitiv.

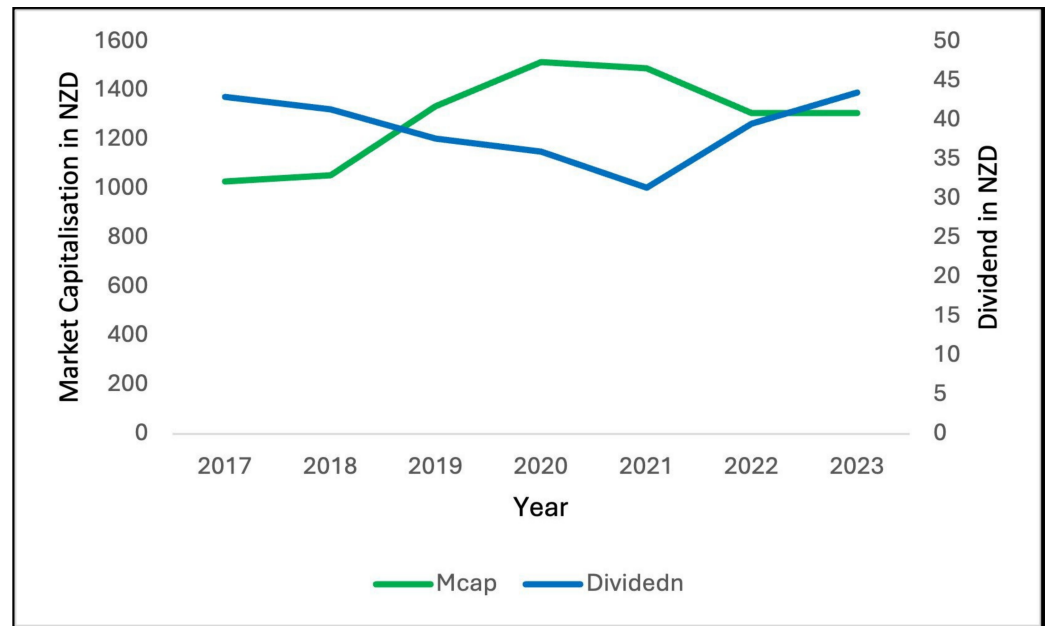


Figure 3. Mean market capitalisation (left axis, NZD millions) and mean dividend (right axis, NZD millions), 2017–2023. Rising MCAP alongside declining dividends is consistent with the irrelevance theory. Data sourced from Refinitiv.

Market capitalisation peaked at NZD 1513.82 m in 2020, precisely when dividends were at their lowest. Shareholders did not penalise firms for cutting payouts, an outcome consistent with the irrelevance theory.

4.1.2. Dividend Patterns by Sector

Sector affiliation is a powerful source of heterogeneity in the data (Figure 4, Table 3). Healthcare, real estate, and finance maintained or expanded their dividend payments throughout the panel; the common thread is revenue derived from captive domestic demand and long-term contracts, which insulates them from cash flow disruptions that force payout reductions elsewhere. The industrials sector presents a sharp contrast, falling from NZD 70.54 m in 2017 to NZD 23.61 m in 2021 before partially recovering. The energy sector suspended dividend payments altogether for three consecutive years (2020–2022). This cross-sector variation in dividend capacity reflects underlying differences in revenue stability of the kind [Cejnek et al. \(2021\)](#) document more broadly.

Table 3. Mean dividend by sector classification (NZD millions).

Sector	2017	2018	2019	2020	2021	2022	2023
Consumer	24.91	24.93	12.90	11.34	14.86	24.01	24.52
Energy	25.51	26.85	10.16	—	—	—	21.21
Finance	5.94	6.85	6.45	7.93	6.79	12.12	12.37
Health care	18.37	21.56	24.90	28.43	29.81	36.01	34.21
Industrials	70.54	54.99	51.59	40.85	23.61	39.03	45.29
IT & Comms	44.58	41.60	39.65	36.00	28.35	38.30	45.85
Real estate	30.00	35.94	36.37	37.35	30.40	39.99	44.16

Note. Energy sector paid no dividends during 2020–2022 (shown as —). Values in NZD millions. Source: Refinitiv.

4.1.3. Board Gender Diversity

In 2017, companies with majority-female boards paid NZD 85.61 m on average against NZD 4.97 m for those with under 20% female representation: a ratio of more than 17 to 1 (Table 4, Figure 5). The gap narrowed to 7.3 by 2023, but the rank ordering held in every

year without exception, and the highest-diversity group recovered its 2017 level fastest. That consistency across seven years is hard to attribute to sampling variation, though other firm-level characteristics may also contribute.

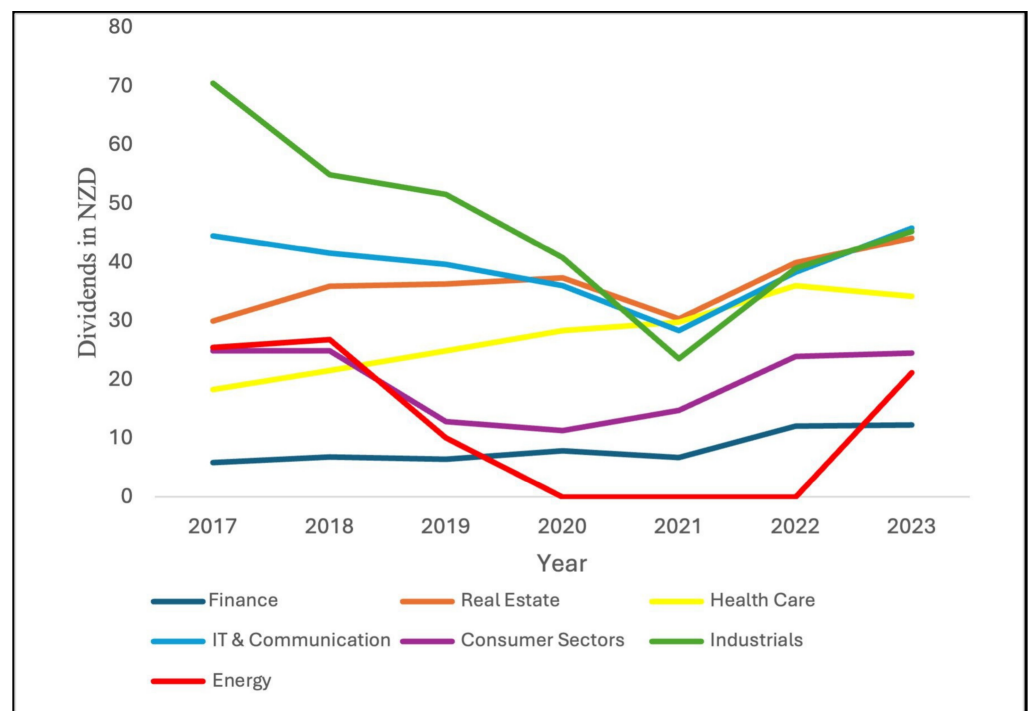


Figure 4. Mean annual dividend by sector, 2017–2023 (NZD millions). Energy sector paid no dividends in 2020–2022. Data sourced from Refinitiv.

Table 4. Mean dividend by female BOD representation (NZD millions).

Female on BOD	2017	2018	2019	2020	2021	2022	2023
>50%	85.61	71.05	72.83	62.49	42.16	43.53	49.07
20–50%	49.47	50.17	42.58	43.07	40.96	54.02	58.84
<20%	4.97	5.64	7.51	5.91	4.41	5.44	6.70
Ratio (>50%:<20%)	17.2	12.6	9.7	10.6	9.6	8.0	7.3

Note. Ratio = mean dividend for >50% group divided by mean for <20% group. Values in NZD millions. Source: company annual reports; financial data from Refinitiv.

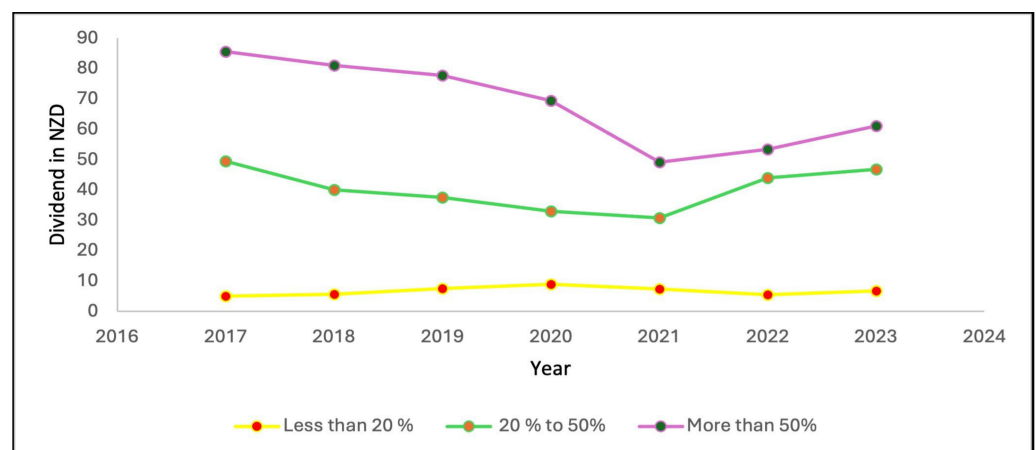


Figure 5. Mean annual dividend by female board representation, 2017–2023 (NZD millions). Three categories: >50%, 20–50%, and <20% female directors. The relative ordering is maintained in every year. Source: Refinitiv and company annual reports.

4.1.4. Domestic vs. Multinational Firms

Domestic firms outpaid multinationals in every panel year (Figure 6, Table 5). By 2023 the domestic group had exceeded its 2017 baseline (NZD 48.22 m vs. NZD 43.77 m), while multinationals remained below theirs (NZD 39.48 m vs. NZD 42.12 m). The gap peaked at NZD 16.90 m in 2019 and persisted through 2023.

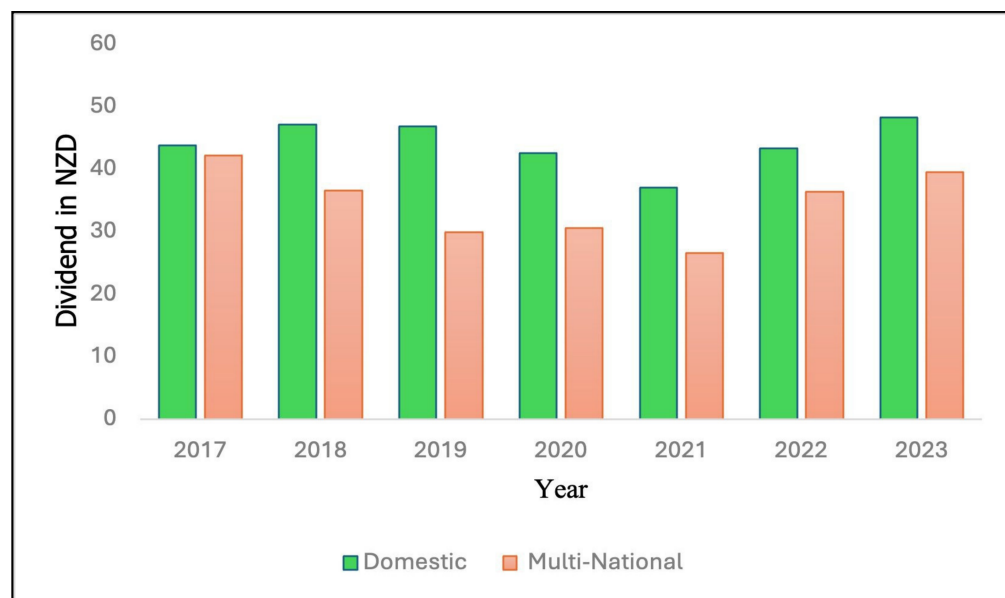


Figure 6. Mean annual dividend by operational scope, 2017–2023 (NZD millions). Domestic firms consistently outpaid multinationals and recovered above their 2017 baseline by 2023. Source: Refinitiv.

Table 5. Mean dividend by operational scope (NZD millions).

Operational Scope	2017	2018	2019	2020	2021	2022	2023
Domestic	43.77	47.06	46.82	42.49	37.04	43.30	48.22
Multinational	42.12	36.51	29.92	30.51	26.60	36.30	39.48
Difference	1.65	10.55	16.90	11.98	10.44	7.00	8.74

Note. Domestic = companies operating exclusively within New Zealand. Multinational = companies with international operations. Difference = domestic minus multinational. Values in NZD millions.

4.1.5. Dividend Patterns by COVID-19 Impact Classification

We classified NZX-listed companies into three categories based on the severity of operational impact from the COVID-19 pandemic, following the framework in Rababah et al. (2020) and Anh and Gan (2021): high impact, medium impact, and low impact. Figure 7 presents mean dividends across these categories from 2017 to 2023.

The pattern is informative. High-impact companies were the second-highest dividend payers in 2017, slightly below the medium-impact group, but became the lowest dividend payer following the pandemic and remained so through 2023. By contrast, low-impact and medium-impact companies maintained or recovered their dividend levels. This classification confirms that the COVID-19 effect was not uniform across the NZX: companies whose underlying operations were most exposed to pandemic disruption exhibited the sharpest and most persistent dividend reductions, an effect that persists even after controlling for sector composition (Figure 4, Table 3).



Figure 7. Mean annual dividend by COVID-19 impact classification, 2017–2023 (NZD millions). Companies classified as low, medium, or high impact based on the severity of operational disruption during the COVID-19 pandemic, following Rababah et al. (2020). Source: Refinitiv.

4.2. Correlation Analysis

Table 6 tracks the year-by-year DPS–EPS correlation. It opens at 0.67 in 2017, collapses to near zero in 2018–2019 ($r = -0.17$ and -0.07), then tightens progressively to 0.87 by 2023. The near-zero middle period reflects deliberate payout smoothing while earnings were disrupted (Qiu & Li, 2023); the snap-back to 0.87 marks the resumption of signalling-consistent behaviour (Yasar et al., 2020).

Table 6. Summary of year-wise Pearson correlations: DPS with selected variables.

Year	Variable	Coeff. (r)	Interpretation
2017	EPS	0.67	Moderate positive
	CR	−0.10	Negligible negative
2018	DY	0.51	Moderate positive
	EPS	−0.17	Negligible negative
2019	DPR	0.26	Low positive
	CR	−0.09	Negligible negative
2020	DPR	0.41	Low positive
	CR	−0.11	Negligible negative
2021	EPS	0.69	Moderate positive
	CR	−0.11	Negligible negative
2022	EPS	0.78	High positive
	CR	−0.09	Negligible negative
2023	EPS	0.87	High positive
	FCF	−0.10	Negligible negative

Note. Pearson correlation scale follows Schober et al. (2018). Strongest positive and negative correlations with DPS shown for each year. Full 8×8 year-wise matrices available from the authors on request.

The current ratio sits persistently negative across all seven years (r between -0.09 and -0.11). Firms under short-term liquidity pressure paid less regardless of what was happening in the broader economy. The dividend literature documents exactly this liquidity-

constraint effect (Boumlík et al., 2023; Neves et al., 2020), and it holds just as cleanly in this sample.

4.3. Diagnostic Tests

VIF values range from 1.03 to 3.72 (Boumlík et al., 2023); the Durbin–Watson statistic of 1.768 rules out serial correlation (Durbin & Watson, 1951); the Breusch–Pagan test ($\chi^2(9) = 250.28$, $p < 2.2 \times 10^{-16}$) confirms heteroskedasticity, justifying robust standard errors (Boumlík et al., 2023); and the Hausman test ($\chi^2 = 93.63$, $p = 3.03 \times 10^{-16}$) confirms fixed effects over random effects (Hausman, 1978). All four results are in Table 7.

Table 7. Diagnostic test results.

Test	Statistic	Decision
<i>Panel A: Multicollinearity (VIF)</i>		
Max. VIF	3.72 (CA)	No multicollinearity (<10)
Min. VIF	1.03 (A)	
<i>Panel B: Autocorrelation</i>		
Durbin–Watson	1.768	No autocorrelation (close to 2)
<i>Panel C: Heteroskedasticity (Breusch–Pagan)</i>		
$\chi^2(9)$	250.28	Heteroskedasticity confirmed
p -value	$<2.2 \times 10^{-16}$	Robust SE used
<i>Panel D: Model specification (Hausman)</i>		
$\chi^2(9)$	93.63	Fixed effects preferred
p -value	3.03×10^{-16}	

Note. All tests performed in R-Studio (plm package). VIF threshold of 10 follows Boumlík et al. (2023). Hausman null (RE consistent) rejected at $p < 0.001$ (Hausman, 1978). Robust (HC1) standard errors address heteroskedasticity.

4.4. Panel Regression Results

Table 8 reports the fixed-effects estimates ($F = 22.50$, $df = 9687$, $p < 2.22 \times 10^{-16}$). Revenue, net profit, and debt carry significant positive coefficients; cash flow and shareholders' equity are significantly negative; current assets, market capitalisation, and firm age are all statistically indistinguishable from zero. The COVID-Crisis dummy variable is significantly negative ($\beta = -6.25$, $p = 0.008$): the pandemic period reduced average dividends by approximately NZD 6.25 m relative to the pre- and post-pandemic baseline, confirming a direct and quantifiable effect of the COVID-19 disruption on NZX dividend payouts.

Table 8. Fixed-effects panel regression: determinants of dividend payout.

Variable	Coeff.	Std. Error	<i>t</i> -Value	<i>p</i> -Value
CA	−0.0061	0.0054	−1.124	0.261
Db	0.0203	0.0068	2.961	0.003 **
CF	−0.0535	0.0097	−5.521	<0.001 ***
REV	0.0285	0.0037	7.669	<0.001 ***
NP	0.0758	0.0102	7.461	<0.001 ***
SE	−0.0182	0.0052	−3.484	<0.001 ***
MCAP	0.0026	0.0015	1.722	0.086
A	−0.4631	0.6323	−0.732	0.464
COVID-Crisis	−6.2506	2.3647	−2.643	0.008 **

$$F = 22.50 \text{ (} df = 9687 \text{); } p < 2.22 \times 10^{-16}$$

Note. Estimated using the fixed-effects (within) estimator in R-Studio (plm package). Hausman test confirms FE over RE ($p < 0.001$). Breusch–Pagan test confirms heteroskedasticity; robust (HC1) standard errors used. COVID-Crisis is a dummy variable coded one for 2020–2022 and zero otherwise (Tinungki et al., 2022). Gender and operational scope are examined descriptively (Tables 4 and 5). Significance: ** $p < 0.05$; *** $p < 0.001$. 816 observations.

5. Discussion

5.1. Financial Determinants

Net profit ($\beta = 0.076$, $p < 0.001$) is nearly three times as large as revenue ($\beta = 0.029$, $p < 0.001$): profit quality matters more than scale, as signalling models predict (Yasar et al., 2020; Kanakriyah, 2020; Theiri et al., 2023; Boumlik et al., 2023). Profitability remained a key determinant of dividend policy across studies of the COVID-19 period; financially stronger companies were better able to sustain dividend payouts despite the disruption (Tinungki et al., 2022). Companies with the potential to grow can increase dividends to emphasise that they will increase shareholder value in future (Bossman et al., 2022).

Debt enters positively ($\beta = 0.020$, $p = 0.003$): leveraged NZX firms maintain dividends as a credibility signal rather than cutting back (Yasar et al., 2020), a pattern reinforced by the imputation credit system where cash distributions carry an extra premium for domestic investors.

Cash flow ($\beta = -0.054$, $p < 0.001$) and shareholders' equity ($\beta = -0.018$, $p < 0.001$) both enter negatively: heavy internal financing demands crowd out dividends, as pecking order theory predicts (Berk & DeMarzo, 2017). The widening gap between net profit and dividends in the post-2021 period suggests that NZX-listed companies preserved profit for future uncertainties rather than paying dividends, which is consistent with pecking order theory (Boumlik et al., 2023; Theiri et al., 2023). Cash flow carries the largest absolute coefficient; short-run liquidity pressure binds tighter than any balance sheet item.

Market capitalisation ($p = 0.086$) and firm age ($p = 0.464$) add nothing once earnings are in the model, exactly as Miller and Modigliani (1961) predict. The divergence between market capitalisation and dividends over the panel period is instructive: market capitalisation reached its highest level in 2020, at precisely the point when dividends were lowest, suggesting that the dividend amount does not impact the market value of the share (Kanakriyah, 2020; AlGhazali & Yilmaz, 2023). Current assets and company age similarly exhibited no significant impact on dividend payouts (Boumlik et al., 2023).

Taken together, the regression evidence supports H1: revenue and net profit enter positively at $p < 0.001$, cash flow and shareholders' equity enter negatively at $p < 0.001$, and debt enters positively at $p = 0.003$. Every sign is consistent with the predictions of the signalling and pecking order frameworks, and the earnings-related variables carry the dominant coefficients. H1 is therefore fully supported by the panel regression.

5.2. Board Gender Diversity

In 2017, NZX firms with majority-female boards paid 17 times more than those with under 20% female representation; by 2023 the ratio was 7:1, but the rank ordering never reversed. Seven years of uninterrupted consistency makes a single-year anomaly or sampling artefact unlikely as a full explanation, though the association remains correlational rather than causal.

Several alternative explanations for the seventeen-fold gap deserve explicit acknowledgement. First, firms with higher female board representation on the NZX may also be systematically larger, older, and more profitable than firms with lower representation, and those characteristics independently predict higher dividends (Kanakriyah, 2020; Neves et al., 2020). Second, board composition is correlated with industry: the healthcare, real estate, and finance sectors, which show both higher female representation and higher payout stability in our sample (Table 3), draw revenue from captive domestic demand that supports steadier distributions regardless of governance (Cejnek et al., 2021). Third, ownership structure may confound the observed association: closely held or founder-influenced firms may simultaneously appoint fewer female directors and retain more earnings (Khan et al., 2022; Kim et al., 2020). Because gender is examined through disaggregated descriptive

comparison rather than as a regressor, we cannot separate the direct effect of board composition from these correlated firm-level characteristics. What the seven-year descriptive evidence establishes is that the association is robust and empirically consistent, not that gender diversity causes higher payout. Section 4.4 controls for size, profitability, cash flow, and leverage in the panel regression but leaves the direct identification of gender and scope effects to future work with a longer panel or exogenous variation in board composition. NZX-listed companies with higher female representation on their boards are associated with higher dividend payouts throughout the panel, and the highest-diversity group recovered its 2017 level fastest following the mid-period trough (Shaheen et al., 2023; Duong et al., 2020).

The agency logic is the most direct read: diverse boards constrain speculative retention and push more cash toward shareholders (Tarighi et al., 2023; Low et al., 2015). Female representation on the board of directors is positively associated with higher dividend payouts (Duong et al., 2020). Bird-in-hand reasoning adds a second channel: governance-minded boards may prefer certain distributions over uncertain reinvestment returns (M. S. Ali, 2020). In New Zealand, where imputation credits amplify the value of cash dividends for domestic investors, both mechanisms reinforce each other.

Khan et al. (2022)'s null result in Turkey tells us the effect is conditional: in that sample, most female directors represented controlling families and served family rather than broader shareholder interests, so the governance benefits of board diversity did not translate into observable payout behaviour (Kim et al., 2020). Strong investor protections and governance-supportive regulation (McDowell et al., 2020) are what make those agency benefits visible in payout data in markets like New Zealand. Studies in Vietnam and other emerging markets similarly revealed that female leadership and a diverse board can influence decisions that align with shareholder interests, such as higher dividend payouts (Duong et al., 2020).

H2 is descriptively supported but not causally identified. The seventeen-fold payout gap between the most and least gender-diverse board categories held every year of the panel without reversal, and the highest-diversity group recovered fastest after the mid-period trough, both patterns consistent with the hypothesis. However, because gender was not entered as a regressor (it is largely time-invariant within firms and would be absorbed by the fixed effects), the association cannot be separated from correlated firm-level characteristics such as size, industry, and ownership structure. H2 is therefore supported as a robust empirical association, with causal identification left to future work.

5.3. Domestic vs. Multinational Firms

Domestic firms outpaid multinationals throughout. By 2023 the domestic group had cleared its 2017 baseline; multinationals had not. The gap peaked at NZD 16.9 m in 2019. Dividends of NZX-listed multinational companies were reduced more than those of domestic companies during the COVID-19 pandemic, and after the pandemic, dividends for domestic companies were greater than those of multinationals in the descriptive comparison, which is consistent with multinationals being more adversely affected (Oliveira & Juca, 2021; Guedhami et al., 2022).

As with the gender diversity result, the domestic premium is documented through descriptive comparison rather than a formal regression test that controls for confounders. Domestic NZX firms may differ systematically from multinationals in firm size, sector composition, and capital structure, and each of those characteristics independently affects dividend payout. Multinationals in our sample are also concentrated in industrials and IT—sectors that experienced sharper cash-flow volatility during 2020–2022—so the observed gap partly reflects a business-model effect rather than a pure geography effect (Cejnek

et al., 2021; Cheema et al., 2023). The empirical pattern is therefore consistent with the pecking order explanation but does not identify operational scope as an independent causal driver of payout differences. The pecking order explains the direction: multinationals face foreign exchange exposure, multi-jurisdictional compliance costs, and supply-chain uncertainty that make precautionary cash retention rational (Attig et al., 2021). Considering foreign markets' political and fiscal uncertainty, multinational companies are more likely to minimise dividends during crises (Oliveira & Juca, 2021). Purely domestic operators in New Zealand's stable single-currency environment face none of those pressures (Wellalage & Locke, 2013). Domestic companies focused on operational stability and received more favourable government support, which further reinforced the domestic dividend premium (Guedhami et al., 2022).

Sector composition reinforces the gap: the healthcare, real estate, and finance sectors, where domestic operations dominate, also have the most captive revenue streams; industrials and IT, where multinationals concentrate, showed the sharpest volatility (Cejnek et al., 2021; Attig et al., 2021; Cheema et al., 2023). The energy sector illustrates this most starkly, with dividends dropping to zero during 2020–2022 before a partial recovery (Beer et al., 2023). Healthcare and real estate, by contrast, demonstrated strong and consistent dividend growth throughout the panel, reflecting the rising importance of healthcare during and after the COVID-19 pandemic and steady demand in the property sector (Cejnek et al., 2021).

The COVID-19 pandemic had a statistically significant impact on dividend policies in NZX-listed companies. Companies in comparable markets reduced dividends significantly during the pandemic, prioritising liquidity over dividend distribution to preserve resources in uncertain times despite their capacity to pay (Boumlik et al., 2023). Decreased sales, disruption in free cash flow due to government responses such as travel restrictions and lockdowns, and increased operational costs all contributed to reduced dividend capacity (Theiri et al., 2023). Well-governed companies with more diverse boards were more capable of maintaining dividend policies during the disruption (Tarighi et al., 2023), a finding that connects directly to the gender diversity result discussed above.

H3 is descriptively supported on both parts. Domestic firms outpaid multinationals in every year of the panel, and the gap widened under COVID-19 stress, reaching NZD 16.9 m in 2019 and remaining positive through 2023 despite the recovery. The descriptive pattern therefore supports both the level prediction and the stress-widening prediction of H3. As with H2, causal identification of operational scope as an independent driver requires a specification that separates geography from correlated sector and business-model effects and is left to future work.

6. Conclusions

The three hypotheses set out in Section 2.5 receive different degrees of support from the evidence. H1 is fully supported by the panel regression: the sign, magnitude, and significance of every financial determinant match the theoretical predictions. H2 and H3 are supported descriptively (the seventeen-fold gender-diversity payout gap and the persistent domestic premium both hold across seven years without reversal), but the descriptive design cannot separate these associations from correlated firm-level characteristics, and causal identification is left to future work.

The financial results are clear. Revenue and net profit raise dividends; cash flow and shareholders' equity lower them; market capitalisation adds nothing. These findings are consistent with the signalling, pecking order, and irrelevance frameworks and with evidence from comparable markets.

The governance results are less expected. A seventeen-fold dividend gap between the most and least gender-diverse board categories, uninterrupted across seven years, repre-

sents a robust empirical association that warrants further investigation. To our knowledge, it is the first panel-based documentation at this scale in New Zealand, and seven years of consistency rules out a single-year anomaly. The domestic premium is equally durable: domestic firms outpaid multinationals every year and cleared their 2017 baseline by 2023, while multinationals had not. The pecking order accounts for the direction of that gap, even if not its full size.

The COVID-19 pandemic left a clear and quantifiable mark on NZX dividend policy. The COVID-Crisis dummy in the panel regression carries a significant negative coefficient ($\beta = -6.25$, $p = 0.008$), indicating that the pandemic period reduced average dividends by approximately NZD 6.25 m per firm relative to the pre- and post-pandemic baselines. The effect was uneven: firms most exposed to operational disruption reduced distributions the sharpest, while healthcare, real estate, and finance held steady or expanded payouts. Dividend policy on the NZX therefore proved sensitive to a large exogenous shock but in a way that was mediated by pre-existing sectoral and operational characteristics rather than uniform across the market.

For income-focused investors, the descriptive evidence highlights board gender composition and domestic operational focus as characteristics that co-vary with NZX payout stability across a seven-year window, though whether they add explanatory power above and beyond firm size, industry, and profitability requires further identification work. For managers, the regression results support the familiar lesson that dividend capacity comes from earnings quality rather than firm scale. For regulators considering board composition requirements, this paper documents a payout channel that warrants further empirical scrutiny alongside the more established performance-based case for diversity policy, rather than providing standalone causal evidence in support of it.

The NZX is one market. Whether these results survive in a broader Asia-Pacific panel is untested. The domestic/multinational dummy conceals meaningful variation in internationalisation degree; a continuous measure would be more precise. The explanations we offer are inferred from data, not observed in boardrooms; qualitative work on how board composition enters payout decisions at listed New Zealand firms would add considerably.

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