



Analytical Notes

Price-Setting Behaviour in New Zealand

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Reserve Bank of New Zealand Price-Setting Behaviour in New Zealand

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The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

Contents

Key findings	3
1. Introduction	3
2. Background and literature	4
3. Data	7
3.1 Sample summary statistics	7
4. Descriptive results	9
4.1 Frequency of reviews and changes	9
4.2 Factors influencing price changes	10
4.3 Size and industry variation	12
5. Empirical analysis	16
5.1 Background and methodology	16
5.2 Model 1: Variables of interest	17
5.3 Model 1: Control variables	22
5.4 Model 2: Pricing factors	28
5.5 Limitations	32
6. Summary and conclusion	32
References	34
Appendix A: Additional figures	37
Appendix B: Question design and survey changes	43
Appendix C: Additional model and sample specifications	50

Key findings

- Firms changed prices more frequently in 2022 than in 2010, based on the price-setting module of the Business Operations Survey. The increase was concentrated at the adjustment stage rather than the review stage: the share of firms changing prices twice or more a year rose from 38% to 46%, while price-review frequency remained broadly stable. Firms appear to have responded to the high-inflation environment by converting a greater share of their existing reviews into price changes, rather than by monitoring prices more closely.
- Firm size and industry are associated with substantial and persistent differences in how frequently firms review and change prices, evident in both the 2010 and 2022 survey waves despite markedly different inflation environments. Larger firms tend to change prices more frequently than smaller firms, with the gap widening with size; this gradient is weaker and less consistent for price reviews. Firms in wholesale and retail trade change prices most frequently, while business and government services change prices least frequently.
- Firms that rate labour costs as important tend to review and change prices less frequently. By contrast, firms that rate other input costs, demand conditions, stock levels, or competitors' prices as important generally review and change prices more frequently. This asymmetry suggests that the composition of cost pressure, not only its overall intensity, is informative about how frequently firms reprice: cost pressure transmitted through non-labour channels is associated with more frequent price adjustment, while that transmitted through the labour-cost channel is associated with less frequent adjustment.

1. Introduction

Price-setting behaviour by firms is an important determinant of inflation. At an aggregate level, firm price-setting decisions are the vehicle through which inflation materialises, as firms change the prices for their goods and services in response to factors such as cost pressures, demand fluctuations, and inflation expectations. Understanding the factors associated with price-setting behaviour therefore provides insight into the microeconomic foundations of inflation that are fundamental to monetary policy.

This Analytical Note uses the 2010 and 2022 price- and wage-setting modules of Stats NZ's *Business Operations Survey* (BOS) to investigate firm pricing behaviour in New Zealand. This module offers a rich, economy-wide lens on price-setting behaviour and how it has changed between 2010 and 2022. We link the BOS responses to administrative records in the Longitudinal Business Database (LBD), enabling granular analysis of pricing heterogeneity across firm sizes, industries, and pricing practices.

We build on previous work by the Reserve Bank of New Zealand (Reserve Bank) using the 2010 BOS. Parker (2014) documents substantial variation in price-setting practices across industries and firm characteristics, finding that firms typically reviewed prices twice a year but changed them only once a year. We find that in 2022, firms typically both reviewed and changed prices twice a year, a notable shift in the relationship between monitoring and adjustment. While many factors may have contributed to this change, the international price-setting literature has documented a substantial increase in the frequency of price adjustment during the inflationary surge following the COVID-19

pandemic (Bilyk et al., 2024; Cavallo et al., 2024; Fink & Hambur, 2026; Montag & Villar, 2025). However, the twelve-year gap between our survey waves prevents definitive attribution to the pandemic; longer-term structural changes such as digitalisation may also have contributed, and Buckle et al. (2026) present evidence using *Quarterly Survey of Business Opinion* (QSBO) data that this shift in pricing behaviour appears to have emerged from the mid-1990s.

Descriptive analysis reveals that cost factors, including labour and other inputs, were the most frequently cited as important when firms considered price changes in both 2010 and 2022, with supply-side pressures increasing markedly in importance by 2022. Consistent with Parker (2014), we find that larger firms review and change prices more frequently than smaller firms, with the gap widening with size. Industry¹ heterogeneity is pronounced: firms in wholesale and retail trade exhibit consistently higher price-change frequency, while business services and government services exhibit lower frequency. Between 2010 and 2022, manufacturing recorded the largest increase in price-change frequency, with transport and utilities also rising markedly, consistent with acute input cost pressures during the inflation surge; by contrast, business and government services showed no significant shift.

The empirical analysis extends these descriptive findings using two related ordinal logistic regressions. Model 1 examines how firms' pricing practices and processes — including customer type, contract use, pricing strategy, and information horizon — are associated with the frequency of price reviews and price changes. Cost-plus mark-up pricing is associated with the most frequent price adjustments; long-term contracts are a robust source of nominal rigidity; and firms focused on current economic conditions reprice more frequently than those incorporating forward-looking information.

Model 2 examines how firms' reported drivers of price changes — including labour costs, other input costs, demand conditions, stock levels, and competitors' prices — are associated with the frequency of price reviews and price changes. The central finding is a sharp asymmetry: the reported importance of labour costs is negatively associated with frequency, while the reported importance of other input costs, demand conditions, stock levels, and competitors' prices is positively associated. The asymmetry is intuitive: wages adjust slowly and through formal contractual processes, whereas other input costs, demand, inventory and competitor conditions are intrinsically more volatile and so generate more frequent repricing triggers. The composition of cost pressure, not only its overall intensity, is informative about firms' repricing behaviour and the resulting inflation dynamics.

The structure of this Analytical Note is as follows: **Section 2** provides background context and reviews the relevant literature. **Section 3** describes the data. **Section 4** presents the descriptive results, highlighting differences between the 2010 and 2022 surveys. **Section 5** reports the empirical analysis. **Section 6** concludes.

2. Background and literature

Research into price setting typically falls into three categories: (1) analysis of micro-price data (typically components of the Consumers Price Index [CPI]), (2) firm surveys on price-setting

¹ In this analysis, 'industry' refers to the grouped industry classifications detailed in Table 3, which aggregate high-level ANZSIC codes into nine groups (primary, manufacturing, utilities, construction, trade, transport, household services, business services, and government services), rather than to individual ANZSIC industries. When discussing external studies, we retain the terminology used in those sources, including "sector" and "sectoral".

processes and decisions, and (3) model-based approaches that capture the theoretical mechanisms underpinning price rigidity. Cutting across these, a broader body of work draws on such evidence to examine the macroeconomic implications of price-setting behaviour for inflation dynamics, a dimension of particular interest to central banks. Our research using the BOS falls into the second category and speaks to this macroeconomic dimension.

Firm surveys offer direct insight into pricing rules and decision processes, rather than only the realised prices observed in CPI, scanner, or web-scraped data. They also capture pricing constraints, behavioural asymmetries, and decision rules that are difficult to infer from observed prices or to test within standard theoretical frameworks. In New Zealand, combining the BOS with detailed administrative firm-level data enables analysis of pricing heterogeneity and the channels through which costs and market conditions are associated with price adjustment at the firm level.

Central banks and statistical agencies have increasingly conducted dedicated surveys to gather evidence on firms' price-setting behaviour and the underlying sources of price rigidity that shape inflation dynamics. Blinder (1991) reports results from a large-scale, randomly selected, and broadly representative interview survey of US firms, designed to test competing theories of price stickiness. Blinder et al. (1998) extend this approach and help establish structured firm interviews and surveys as a core empirical tool for studying price-setting behaviour.

Following Blinder (1991) and Blinder et al. (1998), a substantial body of international literature drawing on similar firm surveys has emerged, including, among others, studies for the UK (Greenslade & Parker, 2012), the euro area (Fabiani et al., 2006), Canada (Amirault et al., 2006), and Australia (Park et al., 2010). Taken together, these studies document a consistent pattern of relatively infrequent price adjustments, with the modal firm reviewing prices more often than it changes them. They also highlight substantial heterogeneity by industry and firm size, with goods-producing and highly competitive industries adjusting prices more frequently. Cost-plus mark-up pricing is the predominant strategy, and implicit and explicit contracts are the main sources of price stickiness. Firms tend to respond asymmetrically to cost and demand shocks, and most use a combination of time- and state-dependent pricing² rather than following either approach exclusively.

The Reserve Bank has previously analysed the 2010 BOS — the first iteration of the BOS to feature a dedicated price- and wage-setting module. Parker (2014) finds significant heterogeneity in pricing practices by industry and firm size, with services firms and smaller firms changing prices less frequently. The analysis indicates that New Zealand firms use a mix of time- and state-dependent pricing, typically set prices using a cost-plus mark-up rule, and are rarely exclusively forward looking when setting prices. Buckle and Carlson (2000) and Coleman and Silverstone (2007) examine findings from the New Zealand Institute of Economic Research's QSBO. Buckle and Carlson (2000) find that larger firms tend to change prices more frequently than smaller firms, while Coleman and Silverstone (2007) find that there is considerable heterogeneity in the frequency of price changes across firms, with firms changing prices more in response to cost changes than to demand changes, and more in response to falling demand than rising demand.

Recent research has renewed attention to how the frequency and size of price changes vary with the inflation environment. Historical US evidence shows that higher inflation need not be accompanied by larger individual price changes: Nakamura et al. (2018) find little evidence that the

² Time-dependent pricing refers to firms reviewing or changing prices at regular intervals, such as monthly or annually. State-dependent pricing refers to firms reviewing or changing prices in response to specific events or conditions, such as changes in costs, demand, competitors' prices, or inflation. In practice, most firms combine elements of both.

absolute size of price changes rose during the high-inflation years of the late 1970s and early 1980s, with adjustment occurring instead through more frequent changes. Micro-price studies of the post-COVID inflation surge point to the same frequency margin. Evidence from Canada shows that the surge in inflation was associated mainly with retailers raising prices more often (Bilyk et al., 2024). In the United Kingdom, the share of consumer prices changing each month rose sharply in early 2022 and has since only partially reversed (Brandt et al., 2024). In the euro area and the US, the frequency of price changes also increased substantially, while the typical absolute size of individual price changes changed little (Gautier et al., 2026; Montag & Villar, 2025). This pattern is qualitatively consistent with state-dependent pricing models, in which the frequency of price adjustment responds endogenously to the inflation environment. International evidence suggests this response is non-linear, with the fraction of prices adjusting increasing rapidly under large shocks (Blanco et al., 2024; Cavallo et al., 2024).

Euro area micro-price evidence also highlights the importance of sectoral heterogeneity. Gautier et al. (2024) document larger differences in consumer price rigidity across sectors than across euro area countries, while Henkel et al. (2023) show that pandemic-era price-setting responses differed across sectors, especially for goods and contact-intensive services. This matters for interpreting aggregate price flexibility: the same aggregate frequency of price adjustment can reflect different underlying mixes of sectors, firms, and pricing practices.

The available New Zealand evidence, while more limited, is broadly consistent with these international patterns. Using New Zealand QSBO data spanning six decades to 2024Q3, Buckle et al. (2026) add a temporal dimension missing from other studies. They find that the proportion of firms changing prices has become more responsive to inflation since the mid-1990s, a shift masked by low inflation until the COVID-19 episode. During that episode, firms changed prices about as often as in the much higher-inflation episodes of the 1970s and 1980s, though by substantially smaller amounts, with service-sector firms accounting for much of the change in pricing behaviour. Our research complements this time-series evidence by focusing on the behaviours, factors, and mechanisms underlying price formation across firms. While the BOS covers a shorter horizon than the QSBO, its purpose-designed price-setting module elicits the underlying drivers of price stickiness across the review and change stages, its sample stratification spans all private sector industries, and its linkage to administrative data supports more granular cross-sectional analysis.

Price-setting behaviour is key to understanding inflation dynamics at the macroeconomic level. Our analysis focuses on the firm-level sources of changes in price setting rather than tracing those macroeconomic consequences directly, but the two are connected: the firm-level behaviour we document is the channel through which price setting shapes aggregate inflation. Using the Reserve Bank of Australia's dynamic stochastic general equilibrium (DSGE) model, Fink and Hambur (2026) show that failing to account for the 2022–23 decline in price rigidity would have understated inflation by up to 1.2 percentage points and materially altered the implied policy path. For New Zealand, Kendall and Sing (2025) examine how different measures of price-setting behaviour affect the Reserve Bank's ability to forecast non-tradables inflation, finding that measures based on more recent inflation outperform those that weight earlier periods more heavily. More broadly, the Reserve Bank draws on price-setting research to support its assessment of inflation and its policy decisions.³

³ See, for example, Reserve Bank of New Zealand (2025, 2026).

3. Data

Firm price-setting data come from Stats NZ's BOS, an omnibus survey of firm behaviour and performance (Fabling & Sanderson, 2016) targeting established private businesses with six or more employees.⁴ The BOS is an annual survey that included a module on firm price-setting behaviour in 2010 and 2022. While the sampling frame represents around 7% of all New Zealand enterprises⁵, these 35,000 to 45,000 firms account for over 60% of total wage and salary employment. The survey employs stratified random sampling by industry and size, enhanced with a longitudinal component to track firms over time.⁶ BOS responses are linked to broader administrative data sources through the Longitudinal Business Database (LBD)⁷, including detailed employment records from administrative tax data.

The BOS captures a wide cross-section of New Zealand businesses to better understand practices, behaviours, and constraints affecting business performance. Its modular design explicitly supports longitudinal microdata research while maintaining consistency with similar international surveys to facilitate global comparisons. The BOS serves as the primary source of Tier 1 statistics⁸ for "Business innovation and competitiveness" and "Access to and use of ICT", with Stats NZ adding topical modules to address policy-relevant issues as they emerge. This paper analyses the "Price and wage setting" modules⁹ from 2010 and 2022 which examine the drivers, behaviours, and frequency of firm price and wage setting.

The survey-based approach has inherent limitations compared to detailed interviews (Blinder, 1991; Blinder et al., 1998). Self-reported data risk inaccuracies and systematic bias from changing question formats or varying interpretations across respondents or over time — limitations common to survey-based approaches to studying price setting, including the QSBO used by Buckle et al. (2026). However, these concerns are counterbalanced by the capacity of the BOS to track diverse practices across a large population over extended periods, infeasible with more intensive methods.

3.1 Sample summary statistics

Table 1 presents the sample sizes, sampling frames, and population coverage for our analysis. The 2010 BOS contributed 6,264 respondents representing 613,200 employees, while the 2022 BOS contributed 7,293 respondents representing 688,500 employees. Combined, the sample represents approximately 5% of all New Zealand enterprises with wage and salary employees, and 30% of total wage and salary employment.

⁴ Specifically, businesses must have operated for at least one year and have rolling mean employment (a 12-month moving average) of six or more.

⁵ An enterprise is defined as any tax-reporting legal entity, including businesses, government agencies, trusts, charities, sole proprietorships, and non-employing entities (e.g., look-through companies).

⁶ From this mail-out, between 5,000 and 8,000 useable responses are collected each year, with a realised response rate of around 80% as a response is mandatory under the Statistics Act.

⁷ Stats NZ's Longitudinal Business Database is a large research database comprising anonymised survey and administrative business microdata in New Zealand. For more information see: Fabling and Sanderson (2016).

⁸ Tier 1 statistics are New Zealand's most important official statistics, designated as critical for informing significant decisions by government, business, and the public.

⁹ Funded by the Reserve Bank and the Ministry of Business, Innovation and Employment.

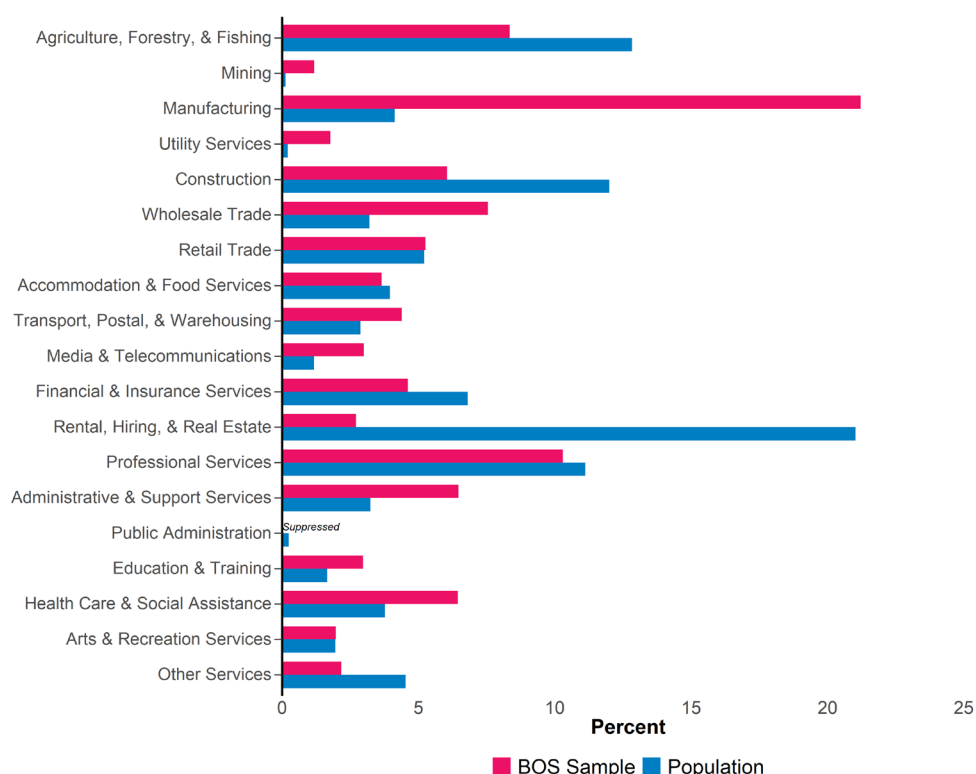
Table 1: Sample and population sizes

	Firm count		Employment count	
	2010	2022	2010	2022
Sample	6,264	7,293	613,200	688,500
BOS sampling frame	34,950	45,720	1,140,600	1,484,600
Population ¹⁰	475,479	595,119	1,908,100	2,386,700

NB: Firm counts are randomly rounded to base 3 and employment counts are subject to graduated random rounding. This applies to all data presented throughout this paper.

Figure 1 shows the industry distribution, illustrating the design philosophy of the BOS which ensures comprehensive industry coverage through strategic oversampling. Mining, manufacturing, utility services, wholesale trade, administration and support services, and health care are notably overrepresented relative to their share of total enterprises.

Figure 1: BOS sample industry composition relative to the total business population (pooled firm counts)



¹⁰ Population firm counts include all enterprises, not only those with wage and salary employees.

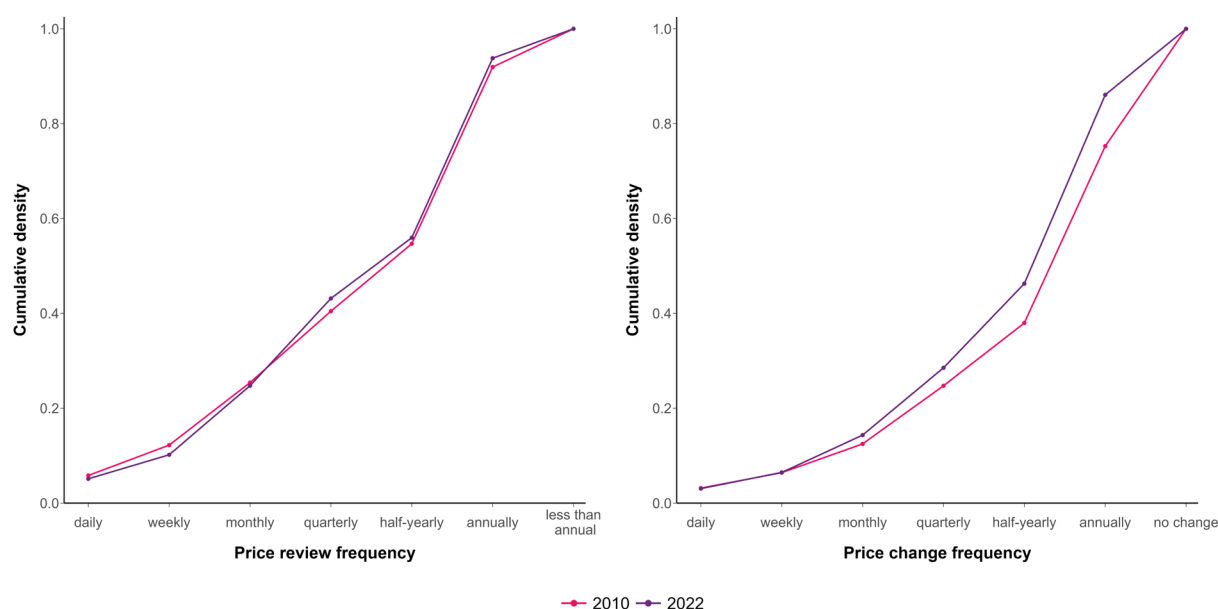
4. Descriptive results

The price-setting module in the BOS asks a range of questions on price-setting dynamics in New Zealand, providing insight into the frequency with which firms set prices, as well as firms' processes and reported motives for changing prices. This section offers initial insights, which we assess empirically in Section 5.

4.1 Frequency of reviews and changes

Consistent with Parker (2014)¹¹ and the international literature, we find that firms review prices more frequently than they change them, as depicted in Figure 2. However, comparing across surveys reveals an important shift in pricing behaviour: while the frequency of price reviews remained stable between 2010 and 2022, the frequency of price changes increased substantially. The proportion of firms changing prices twice or more a year rose from 38% in 2010 to 46% in 2022.

Figure 2: Cumulative distribution function of price-review frequency and price-change frequency



NB: A leftward shift in the distribution implies a greater share of firms reviewing or changing their prices more frequently.
NB2: Survey responses for "Price change frequency" harmonised into approximately equal categories due to differences in question design between BOS 2010 and BOS 2022 (see Appendix B).

The observed increase in price-change frequency aligns with international research showing that price changes became more frequent during the recent high-inflation period, while the typical size of individual price changes remained relatively stable (Gautier et al., 2026; Montag & Villar, 2025). This frequency response appears non-linear, with a rapid rise in the share of prices adjusting under large shocks (Blanco et al., 2024; Cavallo et al., 2024). However, the twelve-year gap between BOS waves prevents definitive attribution to the pandemic. The increase may reflect pandemic-specific disruptions, but could also stem from longer-term structural changes, such as digitalisation, that

¹¹ Minor discrepancies with Parker (2014) results can be explained by our use of the full 2010 BOS microdata, which includes firms from the longitudinal top-up component and partially completed but usable survey responses.

have enabled greater pricing flexibility.¹² Consistent with such a shift, Buckle et al. (2026), drawing on six decades of New Zealand QSBO firm-level data, find that the proportion of firms changing prices became more responsive to inflation from the mid-1990s — a change masked by the low inflation of the Great Moderation and revealed only by the COVID-19 episode. During that episode, firms changed prices about as frequently as in the much higher-inflation years of the 1970s and 1980s, though by substantially smaller amounts. Beyond New Zealand, country-specific studies of the pre-pandemic period point to a more varied picture rather than a single common pattern (Davies, 2021; Gautier et al., 2024; Rudolf & Seiler, 2022).

The relative stability of price-review frequency in New Zealand over this period stands in contrast to recent evidence on the role of reviews in price rigidity. Harris et al. (2020) show that a significant share of price stickiness reflects firms not reviewing their prices, rather than menu costs that impede price changes, identifying review infrequency as a major source of rigidity. Their framework implies that cost shocks of sufficient magnitude should increase price-review frequency. In line with this prediction, Seiler (2024) provides causal evidence that the 2022 Russian invasion of Ukraine increased the frequency of price reviews among Swiss firms, translating into more frequent price changes and greater price flexibility.

One likely explanation for the New Zealand pattern lies in the timing of Budget 2010. The government announced a Goods and Services Tax (GST) rate increase in May 2010, effective October 2010 (New Zealand Treasury, 2010). The BOS 2010 was conducted after this announcement but before the increase took effect, so firms' responses captured anticipatory review activity. Approximately 41% of respondents had conducted, or planned to conduct, a price review in response to the announced GST increase. This broad-based, anticipated GST increase likely elevated the 2010 baseline for price reviews, masking any underlying increase in review frequency between the two surveys.

4.2 Factors influencing price changes

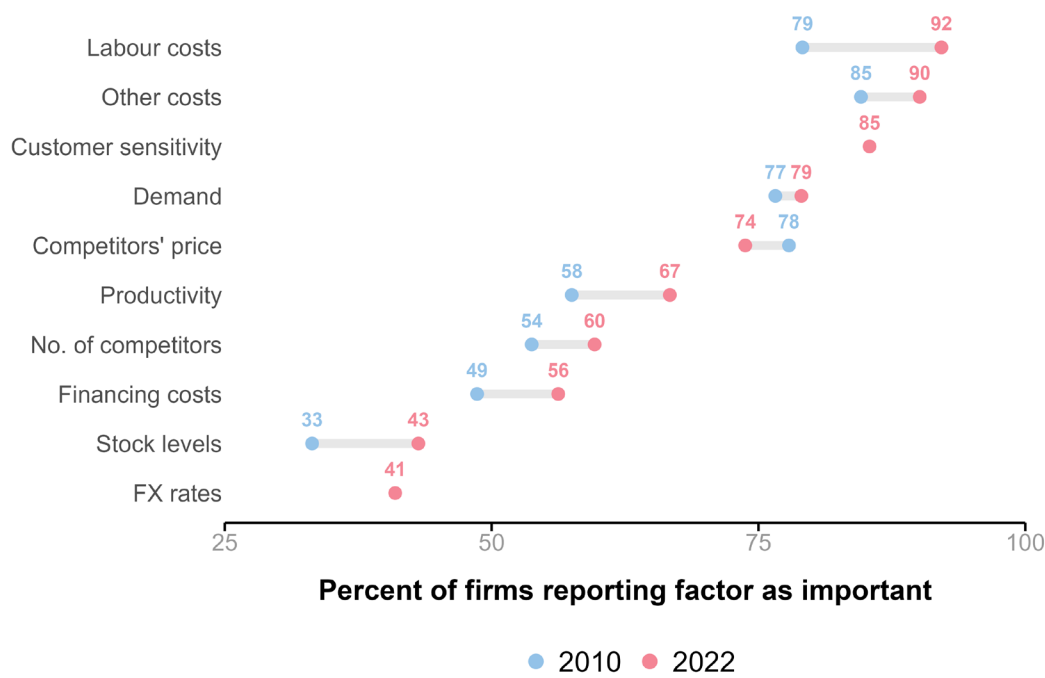
Multiple factors likely underlie the increased frequency of price changes, and the importance firms attach to different factors offers some initial insight. Figure 3 shows the share of firms reporting each factor as important when changing prices. Cost factors, including labour costs and other input costs such as materials and energy, were the most frequently cited in both 2010 and 2022, and their persistent prominence suggests that cost pressures are central to firms' price-change decisions in both low- and high-inflation environments. Most factors rose in reported importance between the two waves, with the largest increases among cost and supply-side factors: labour costs, stock levels, productivity, and financing costs. Taken together, this suggests that firms drew on a broader set of pricing considerations during the high-inflation period.

Within this broader set of considerations, the competitive and demand factors moved differently. Customer price sensitivity, asked only in 2022, was the third most commonly cited factor in that wave. Among the factors asked in both waves, reported importance fell only for competitors' prices. This suggests that, during the high-inflation period, firms weighed customers' willingness to absorb price increases more heavily than rival pricing.

¹² Studies of online markets suggest that digitalisation can lower menu costs and make price adjustment more flexible. Brynjolfsson and Smith (2000) find that online price adjustments are smaller than those of conventional retailers, while Gorodnichenko and Talavera (2017) find that online retailers adjust prices more flexibly in response to cost shocks such as exchange rate movements.

The New Zealand pattern aligns with recent international evidence from the post-pandemic inflation episode. Balleer et al. (2024) find that supply-side forces gained importance during Germany’s inflation surge, with firms identifying goods supply shortages as especially restrictive. Cavallo et al. (2024) show that the large energy shocks of 2022 raised the frequency of price adjustment, consistent with state-dependent pricing models in which large shocks generate more rapid pass-through. Demand conditions also appear to matter, with Dogra et al. (2023) finding that firms rating demand as important to their pricing passed through a higher share of their costs. Together, these studies reinforce the interpretation that price-change frequency can rise when large cost shocks, supply constraints, and strong demand make price adjustment more salient.

Figure 3: Share of firms reporting each factor as important when changing prices



NB: Survey responses harmonised into binary “important” and “not important” categories due to differences in question design between BOS 2010 and BOS 2022 (see Appendix B). Some factors were not asked in both years.

Figure A6 (Appendix A) summarises responses to the remaining survey questions used in our analysis. The share of firms using cost-plus pricing rose from 50% in 2010 to 62% in 2022, making it the most prevalent pricing method and consistent with international evidence (Fabiani et al., 2006; Park et al., 2010). The share of firms reporting that both current and expected future conditions are equally important to their pricing decisions rose from 52% in 2010 to 68% in 2022, indicating that firms drew on a wider information set during the high-inflation period — a pattern broadly aligned with macroeconomic models that combine forward- and backward-looking elements in firms’ pricing decisions. On the time- versus state-dependent dimension, New Zealand firms show a modest shift toward regular-interval pricing — the opposite direction to recent UK survey evidence of a post-pandemic shift toward state-dependent pricing (Bunn et al., 2026). One possible explanation is that hybrid and state-dependent approaches were already used by a relatively high share of New Zealand firms in 2010, leaving less room for further movement in that direction during the 2022 inflation period.

4.3 Size and industry variation

A key advantage of the stratified design in the BOS is its broad coverage across firm sizes (≥ 6 employees) and industries. The resulting sample size and cross-section — typically larger and broader than international peers — supports robust comparisons across groups. Following the Ministry of Business, Innovation and Employment’s firm size classifications, we further analyse variation by different size classes (Table 2).

Table 2: Firm size classification

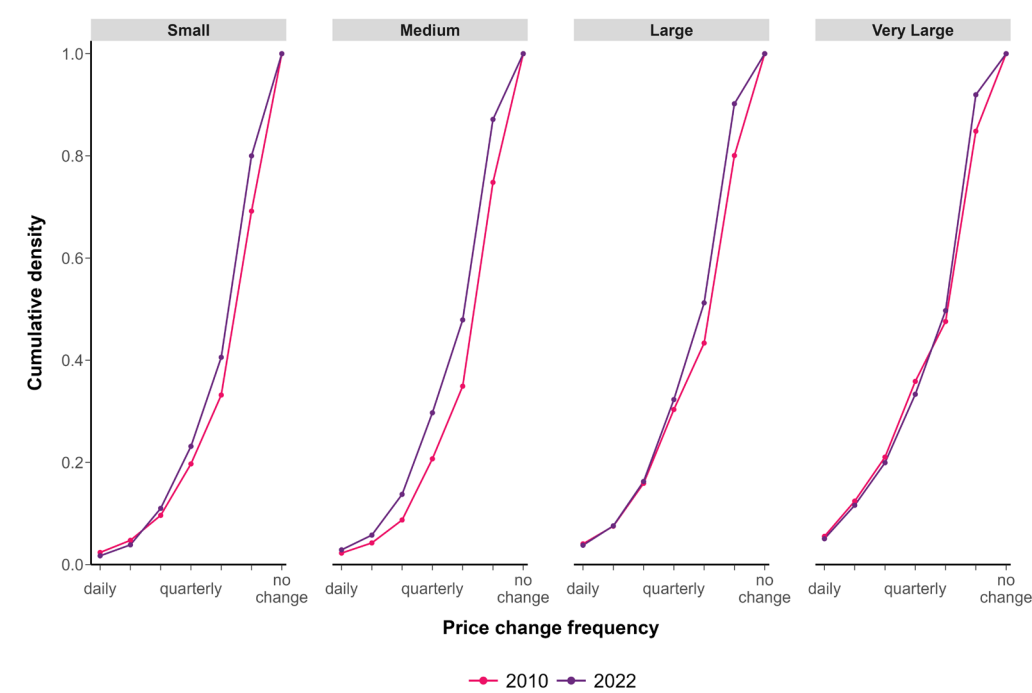
	Firm count		Employment count	
	2010	2022	2010	2022
Small (6–19 employees)	2,424	2,616	26,300	27,900
Medium (20–49 employees)	1,437	1,668	45,700	53,400
Large (50–99 employees)	1,302	1,710	90,000	117,900
Very large (100+ employees)	1,104	1,296	451,300	489,400
Total	6,264	7,293	613,200	688,500

NB: An additional size class of “Very large” was added to make full use of the stratified sampling design and ability to capture the most economically significant firms in New Zealand.

NB2: Employment refers to the total number of employees employed by firms in the BOS sample.

Consistent with Parker (2014) and international evidence, we observe that both the frequency of price reviews and price changes rise with firm size (Figure A3, Appendix A). Figure 4 illustrates how price-change frequency varies across firm size categories and survey years. The data reveal that small and medium-sized firms substantially increased the frequency of their price changes in 2022 relative to 2010. By comparison, large and very large firms exhibited minimal change in price-change frequency between these periods, aside from declines in the distributional tails (least flexible firms). This pattern is consistent with Bunn et al. (2026), who find that smaller UK firms are significantly more likely to use state-dependent pricing and that state-dependent firms experienced a much larger increase in price-change frequency during the inflation surge.

Figure 4: Cumulative distribution function of price-change frequency by firm size



NB: A leftward shift in the distribution implies a greater share of firms changing their prices more frequently.
NB2: Ordered: "daily", "weekly", "monthly", "quarterly", "half-yearly", "annually", "no change".

Following the broad approach of Fabiani et al. (2006), and the groupings of Park et al. (2010) and Parker (2014), we aggregate Australian and New Zealand Standard Industrial Classification (ANZSIC) codes into nine industry groups: primary, manufacturing, utilities, construction, trade, transport, household services, business services, and government services, as detailed in Table 3.¹³

¹³ This classification extends the frameworks used by Park et al. (2010) and Parker (2014) to make fuller use of the BOS stratified sampling design and provide additional disaggregation, particularly within services.

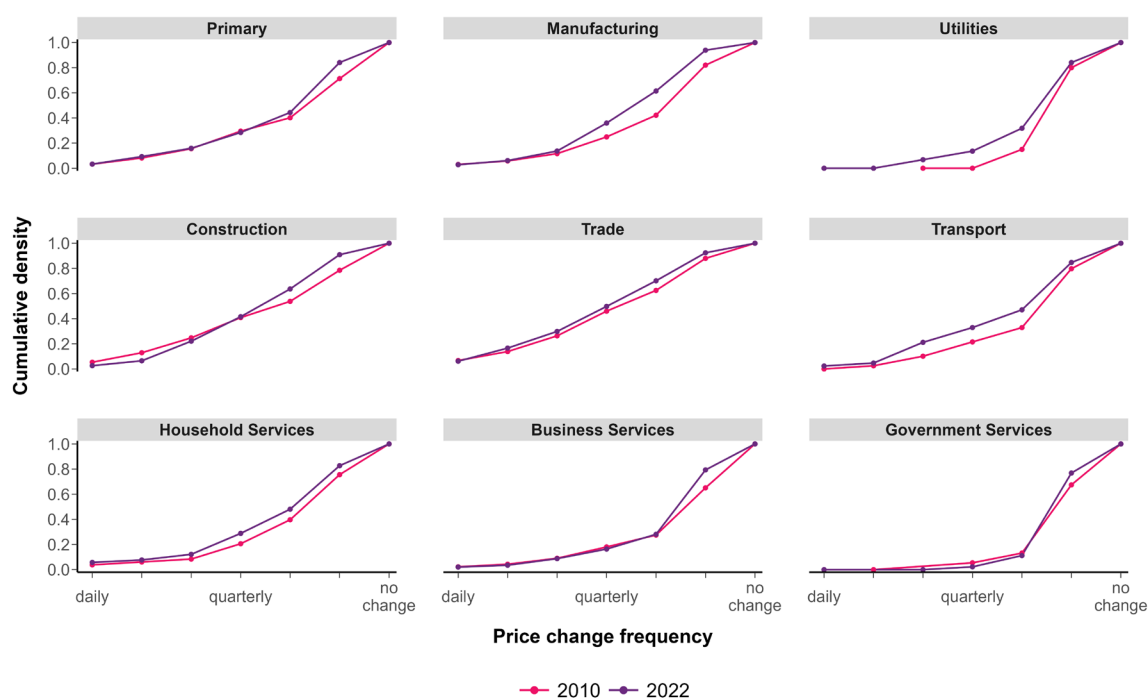
Table 3: Broad industry groupings aggregated from ANZSIC codes

Industry	Firm count		Employment count	
	2010	2022	2010	2022
Agriculture, Forestry & Fishing	504	627	18,700	28,000
Mining	75	84	4,700	3,200
Primary	579	711	23,400	31,200
Manufacturing	1,383	1,491	129,000	131,700
Utilities	84	156	7,100	11,200
Construction	300	519	26,400	43,500
Wholesale Trade	492	531	41,600	50,300
Retail Trade	375	336	73,700	47,500
Trade	867	867	115,300	97,800
Transport	291	303	49,300	48,800
Accommodation & Food	216	279	20,500	17,300
Arts & Recreation	135	132	10,300	9,600
Other Services	126	168	3,600	4,500
Household Services	477	579	34,400	31,400
Telecommunications	195	210	27,300	19,600
Finance & Insurance	291	333	44,600	51,000
Real Estate Services	189	177	8,200	10,000
Professional Services	633	762	43,700	69,800
Administration & Support	399	477	49,700	66,400
Business Services	1,707	1,959	173,500	216,800
Education & Training	186	216	12,000	16,200
Health Care	387	486	42,200	59,900
Government Services	573	702	54,200	76,100
Total	6,264	7,293	613,200	688,500

NB: Shaded and bolded rows are the industry groups used in our analysis; unshaded rows are the ANZSIC codes that make up each group. Public Administration was excluded due to small sample sizes.

Figure 5 shows the distribution of price-change frequency by industry in 2010 and 2022. Manufacturing shows the clearest increase, with the 2022 distribution shifting leftward across much of the frequency range. Transport and utilities also moved toward more frequent price changes, while trade remained among the most frequent price adjusters in both waves. Household services rose more modestly, whereas business services and government services changed little, and construction and primary industries showed only small shifts. Although differences in classification complicate direct international comparison, the broad pattern of heterogeneity across industries is consistent with international evidence. The clearest correspondence is for goods and energy-exposed categories: internationally, products with greater input-cost exposure, particularly to energy, showed the strongest frequency response (Gautier et al., 2026), in line with the New Zealand increase being concentrated in manufacturing, transport, and utilities. The services-side comparison is less direct. Henkel et al. (2023) report particularly large increases for contact-intensive services, whereas in New Zealand the services response was limited to a modest rise in household services. More broadly, similar heterogeneity across industries or product groups is evident elsewhere (Bilyk et al., 2024; Rudolf & Seiler, 2022). Overall, the pattern is consistent with supply disruptions and input-cost shocks being especially salient for industries more exposed to goods, energy, and other volatile inputs.

Figure 5: Cumulative distribution function of price-change frequency by industry



NB: A leftward shift in the distribution implies a greater share of firms changing their prices more frequently.
 NB2: Ordered: "daily", "weekly", "monthly", "quarterly", "half-yearly", "annually", "no change".

5. Empirical analysis

5.1 Background and methodology

The preceding descriptive analysis documents notable variation in the frequency of price reviews and price changes across firm characteristics and survey years. To further understand the drivers of pricing dynamics, we next empirically analyse the relationships between firm characteristics and the frequency of price reviews and changes.

To analyse the conditional associations between firm characteristics and the frequency of price reviews and price changes, we estimate an unweighted ordinal logistic regression:

$$\text{logit}[P(y_i \leq j | X_i)] = \alpha_j - X_i' \beta, \quad j = 1, \dots, J - 1 \quad (1)$$

Where y_i , the dependent variable, is either the frequency of **price reviews** or the frequency of **price changes**, X_i is a vector of covariates, β are the slope parameters, and α_j are threshold cutoff points.¹⁴ J represents the response categories for our dependent variables, with the numbers 1 to 7 assigned in order of increasing frequencies from 1 – “less than once a year” (price reviews) or “no change” (price changes) to 7 – “daily”. Under the proportional odds assumption, the effect of each covariate on the log odds is constant across categories. This is a standard maintained assumption in applied ordinal logistic models.

The covariates (X_i) we use are from LBD firm measures and survey responses. These capture customer and contract characteristics, pricing processes and strategy, and the information horizon underlying pricing decisions. Standard controls include year, firm size, industry, and their respective interactions.¹⁵ Figure A6 (Appendix A) presents the distribution of survey responses for the covariates used in our analysis. Appendix B details the full list of covariates (and survey questions), variable definitions, and changes in question design between 2010 and 2022.

Coefficients in our ordinal logistic models represent the change in log odds. A positive coefficient indicates increased odds of more frequent price reviews and/or price changes relative to the reference group, while a negative coefficient indicates decreased odds. Given that this analysis is observational and does not establish causal identification, all coefficients should be interpreted as associations.

Surveys like the BOS are subject to respondent biases and measurement errors, and with many covariates, endogeneity may affect coefficient estimates in unpredictable ways. We therefore avoid treating any single coefficient as a reliable estimate of an underlying effect, and instead place particular weight on whether the estimated associations are stable in sign, significance, and magnitude across alternative samples and model specifications.

¹⁴ Regressions are estimated on unweighted observations. The BOS sampling design stratifies by firm size and industry; because both dimensions appear as covariates in our specifications, unweighted ordinal logistic yields consistent estimates of conditional associations within the surveyed sample (Solon et al., 2015). Our focus is on patterns of association rather than population-representative estimates.

¹⁵ Covariate vector can be written as: $X_i' \beta = \beta_0 + \beta_1 \text{Main Customer} + \beta_2 \text{LT Contracts} + \beta_3 \text{Repeat Customers} + \beta_4 \text{Review Process} + \beta_5 \text{Pricing Strategy} + \beta_6 \text{Expectations} + \beta_7 \text{Sales Strategy} + \beta_8 \text{Year}_{dummy} + \beta_9 \text{Firm Size} + \beta_{10} \text{Industry} + \beta_{11} (\text{Year}_{dummy} * \text{Firm Size}) + \beta_{12} (\text{Year}_{dummy} * \text{Industry})$

5.2 Model 1: Variables of interest

To improve readability, we present the estimates from Equation (1) across two tables. Table 4a reports the coefficients for our primary variables of interest (firm practices and processes), while Table 4b displays the coefficients for the control variables (firm characteristics, year effects, and interaction terms). Note that these tables display results from the same model specification, not separate estimations. By controlling for firm size, industry, and year effects, our estimates for the variables of interest can be interpreted as associations that generalise across these dimensions.

The columns are organised by dependent variable and sample composition. Across Table 4a and Table 4b, columns (1) – (2) report results with price-review frequency as the dependent variable, and columns (3) – (4) report results with price-change frequency as the dependent variable. Each pair of columns represents the same model specification estimated on different sample subsets: columns (1) and (3) use a balanced panel, while columns (2) and (4) use the full sample. Additional model and sample specifications are presented in Appendix C.

Table 4a reveals a statistically significant relationship between both price-review frequency and price-change frequency and a firm's main customer type. Relative to firms that primarily sell to individuals and households, firms selling mainly to retailers or wholesalers are associated with lower price-review and price-change frequency. This likely reflects the prevalence of fixed-price contracts and catalogue pricing arrangements in wholesale and retail supply channels, where pricing dynamics differ from those facing downstream firms (Blinder et al., 1998; Goldberg & Hellerstein, 2013). In contrast, there is some evidence that firms selling primarily to other businesses change prices more frequently, although this pattern is not consistently reflected in review frequency.

Using the proportion of customers on long-term contracts and the proportion of repeat customers as proxies for explicit and implicit contracting, respectively,¹⁶ the results suggest that the frequency of price reviews and price changes is more closely associated with explicit contracting. Across specifications, we consistently find a strong negative relationship between long-term contract prevalence and the frequency of price reviews and changes. This partially aligns with survey evidence from Blinder et al. (1998) and euro area firm surveys (Fabiani et al., 2006), which identified explicit and implicit contracts as important sources of price rigidity, though with implicit contracts ranked higher in firms' assessments. Interpretation requires caution, as these are imperfect proxies; long-term contracts vary in their price-setting provisions, and repeat custom may reflect switching costs or product differentiation rather than implicit pricing agreements.

Our results show firms that exclusively review prices at regular intervals (time-dependent) are associated with higher price-review and price-change frequency than firms that exclusively review in response to specific events (state-dependent). Recent international evidence documents a post-pandemic shift toward state-dependent pricing, with more firms adjusting prices in response to events rather than at fixed intervals (Bunn et al., 2026), as well as an increase in the overall frequency of price adjustment following large cost shocks (Cavallo et al., 2024; Fink & Hambur, 2026). This divergence may partly reflect the high share of New Zealand firms reporting hybrid behaviour (~60%), consistent with the view that most firms combine elements of both pricing regimes (Alvarez et al., 2022; Fabiani et al., 2006). The separate cross-sectional estimates (Table C1, Appendix C) show that the gap between hybrid and time-dependent firms narrowed substantially in 2022 relative to 2010, with hybrid firms exhibiting price-review and price-change frequency

¹⁶ These proportions are reported in discrete percentage bands, not as continuous shares; we interpret them as ordinal measures.

indistinguishable from purely time-dependent firms during this high-inflation period. This suggests that event-based triggers became more salient when cost pressures were large, supplementing rather than replacing regular review cycles.

Turning to sales and pricing strategy, firms that rate temporary price reductions as important are associated with higher price-review and price-change frequency. The results also point to a strong positive relationship between cost-plus mark-up pricing (the reference category) and the frequency of price reviews and changes. All statistically significant coefficients on alternative pricing strategies are negative, implying that firms employing cost-plus mark-up models engage in more active price adjustment. This is consistent with the broader price-setting literature, in which cost-plus mark-up pricing is widely documented as the dominant approach among surveyed firms (Blinder et al., 1998; Fabiani et al., 2006), and suggests that New Zealand firms' behaviour is consistent with that of their international counterparts in this respect. The coefficient on competitor-based pricing becomes insignificant once industry controls are included, suggesting that within industries, firms tracking competitors' prices adjust at similar rates to those using cost-plus pricing (Table C3, Appendix C). One interpretation is that such firms are effectively following a cost-plus strategy by proxy, tracking competitors who themselves price on a cost-plus basis.

Firms that base their pricing decisions on current economic conditions are associated with higher price-review and price-change frequency than those that incorporate forward-looking information. The coefficients on both "Expected future economic conditions" and "Current and future economic conditions" are negative and statistically significant across all pooled specifications, indicating that firms whose information horizon extends beyond present circumstances adjust prices less frequently. This pattern is intuitive: firms focused on current conditions are likely engaging in a more reactive, state-dependent form of price setting, adjusting prices promptly as realised cost and demand shocks materialise. By contrast, firms that incorporate expectations about the future into their pricing decisions may set prices with a longer horizon in mind, building anticipated cost and demand developments into less frequent but larger adjustments. Kendall and Sing (2025) find that measures of price-setting behaviour sensitive to recent inflation outperform forward-looking survey expectations in forecasting non-tradables inflation, consistent with reactive pricing behaviour dominating in practice.

Table 4a: Firm practices and the frequency of price reviews and price changes — variables of interest (ordinal logistic regression estimates)

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
Main customer				
Individuals or households	Reference	Reference	Reference	Reference
Businesses within this business group	-0.274+	-0.146	-0.009	0.043
	(0.158)	(0.093)	(0.156)	(0.090)
Retailers or wholesalers	-0.395**	-0.312***	-0.197+	-0.176*
	(0.124)	(0.076)	(0.118)	(0.073)
Other businesses	-0.130	-0.089	0.117	0.133*
	(0.112)	(0.066)	(0.104)	(0.063)
Government	-0.136	-0.178	-0.152	-0.138
	(0.185)	(0.109)	(0.172)	(0.104)
Long-term contracts				
Zero	Reference	Reference	Reference	Reference
Ordered levels: 1–25%, 26–50%, 51–100%	-0.537***	-0.518***	-0.429***	-0.445***
	(0.070)	(0.043)	(0.067)	(0.041)
Repeat customers				
Zero	Reference	Reference	Reference	Reference
Ordered levels: 1–25%, 26–50%, 51–100%	-0.071	-0.435*	0.168	-0.113

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
	(0.421)	(0.198)	(0.414)	(0.203)
Typical price review				
At regular intervals	Reference	Reference	Reference	Reference
In response to specific events only	-1.219***	-1.457***	-1.105***	-1.036***
	(0.283)	(0.156)	(0.147)	(0.086)
At regular intervals and in response to specific events	-0.088	-0.117*	-0.072	-0.139**
	(0.080)	(0.049)	(0.078)	(0.048)
Sales strategy				
Not important	Reference	Reference	Reference	Reference
Ordered levels: moderately important, very important	0.567***	0.551***	0.578***	0.551***
	(0.083)	(0.051)	(0.080)	(0.050)
Price-setting method				
Cost-plus mark-up	Reference	Reference	Reference	Reference
Competitor's pricing	0.112	0.014	0.015	-0.001
	(0.082)	(0.052)	(0.080)	(0.051)
Other (i.e. inflation)	-0.487***	-0.503***	-0.342***	-0.357***
	(0.104)	(0.062)	(0.100)	(0.059)
Information horizon				

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
Current economic conditions	Reference	Reference	Reference	Reference
Expected future economic conditions	-0.414** (0.155)	-0.407*** (0.093)	-0.302* (0.141)	-0.225** (0.087)
Current and future economic conditions	-0.289*** (0.078)	-0.254*** (0.048)	-0.328*** (0.074)	-0.272*** (0.046)
Controls	Yes	Yes	Yes	Yes
N	3,054	7,653	3,315	8,319
McFadden pseudo R²	0.06	0.06	0.06	0.06

NB: The dependent variable is price-review frequency in columns (1) – (2) and price-change frequency in columns (3) – (4). Columns (1) and (3) are estimated on the balanced panel (firms appearing in both BOS samples); columns (2) and (4) on the full sample.

NB2: Cluster-robust standard errors in parentheses. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cell shading indicates the sign and statistical significance of estimated coefficients: red denotes negative and blue denotes positive estimates, with successively darker shades corresponding to significance at the 10%, 5%, 1%, and 0.1% levels. Coefficients in unshaded cells are not statistically significant at the 10% level. Coefficients on control variables (firm size, industry, year effects, and interaction terms) are reported in Table 4b.

5.3 Model 1: Control variables

As noted above, the estimates in Table 4b are drawn from the same ordinal logistic regression specifications as Table 4a, but report the coefficients on the control variables — firm size, industry, year effects, and their interactions. While these variables serve primarily as controls, their coefficients are informative in their own right. They reveal significant heterogeneity in the frequency of price reviews and changes across firm characteristics and over time, reinforcing a central theme of this paper. The column structure mirrors that of Table 4a, with columns (1) – (2) corresponding to price-review frequency and columns (3) – (4) to price-change frequency, estimated on the balanced panel and full sample respectively.

Table 4b indicates the 2022 year dummy is positive for price-change frequency but negative for price-review frequency, though neither reaches statistical significance. This divergence is itself suggestive: it is consistent with firms responding to the high-inflation environment by translating a greater share of existing reviews into actual price changes, rather than increasing the frequency with which they reassess prices. That neither coefficient is individually significant suggests that the aggregate year effect masks considerable heterogeneity across firm types, which the interaction terms are designed to capture.

The positive coefficients on firm size in Table 4b indicate that larger firms are associated with higher price-review and price-change frequency, with the magnitude of this relationship increasing with size, particularly for price changes. Very large firms (100+ employees) exhibit the strongest association, while medium-sized firms (20–49 employees) show only modest differences relative to small firms (6–19 employees). This gradient is generally consistent with international microdata research (Davies, 2021; Goldberg & Hellerstein, 2011), though survey evidence is mixed (Fabiani et al., 2006). Larger firms may benefit from dedicated pricing functions, more sophisticated cost-monitoring systems, and greater market power, all of which reduce the effective cost of repricing and facilitate more frequent adjustment.

Reinforcing the descriptive analysis presented earlier, the industry coefficients in Table 4b reveal considerable heterogeneity in the frequency of price reviews and price changes across industries. Relative to the primary industry, firms in construction and trade are associated with higher review and change frequency. By contrast, firms in services industries are generally associated with lower review and change frequency, with the relationship strongest and most robust for business services and government services. Government services firms show the strongest association across all specifications, consistent with the prevalence of regulated and administered pricing in these industries. These patterns reinforce the findings of Parker (2014) for the 2010 BOS and echo the well-documented stickiness of services prices in international survey and micro-price evidence (Fabiani et al., 2006; Gautier et al., 2024). Industry is among the most important correlates of the frequency of price reviews and changes in New Zealand.

The year-size and year-industry interaction terms explore whether the 2022 high-inflation period induced different shifts in the frequency of price reviews and price changes across firm types. The year-size interactions reveal a contrasting pattern, where the interaction terms for large and very large firms are negative and significant for price changes in the full sample, suggesting that larger firms, already more frequent price adjusters, did not increase their price-change frequency to the same extent as smaller firms. Buckle et al. (2026) find that this convergence is not uniform across sectors. In manufacturing and merchants, larger firms gained more upward price flexibility, consistent with their greater capacity to invest in digital monitoring technologies; in services, smaller firms gained more, consistent with fixed menu costs representing a larger share of their

adjustment costs (Buckle & Carlson, 2000). The pooled negative year-size interaction terms may therefore mask offsetting sectoral dynamics. International evidence is mixed; Davies (2021) finds that large UK firms' prices are structurally more flexible, while Bunn et al. (2026) show that smaller firms, being more likely to use state-dependent pricing, experienced a correspondingly larger increase in price-change frequency during the inflation surge.

Among the year-industry interactions, manufacturing and transport firms are associated with higher price-review and price-change frequency in 2022 relative to the primary industry, consistent with the acute input-cost pressures these industries faced during the inflation surge. By contrast, the three services industries — household, business, and government services — show insignificant 2022 interactions, indicating that their review and change frequency did not shift differentially relative to the primary industry during the high-inflation period. This concentration of the 2022 increase in energy- and input-cost-exposed industries mirrors the international evidence discussed earlier, in particular Gautier et al.'s (2026) finding that the frequency response was strongest for products with greater energy exposure. The comparison with Buckle et al. (2026) is more nuanced. Using QSBO data, they find that much of the recent increase in conditional price-increase probabilities is concentrated among service-sector firms, for whom responsiveness to inflation rose most. Their services grouping is broad and includes transport services, which our classification separates from household, business, and government services. The two results also differ in pricing measure and sample period, so the comparison is suggestive rather than direct.

The separate cross-sectional estimates in Table C2 (Appendix C) help distinguish persistent firm-level structure from 2022-specific movement. The size gradient is evident in both waves, especially for price changes, while trade remains associated with more frequent adjustment and business and government services with less frequent adjustment. By contrast, the manufacturing and transport patterns are concentrated in 2022: manufacturing is not significantly different from primary industries in 2010 but is positive and significant in 2022, while transport moves from a negative or insignificant association in 2010 to a positive one in 2022. That these shifts appear only in the 2022 cross-section, against an otherwise stable structure, indicates genuine wave-specific movement in the industries most exposed to cost pressure rather than a fixed cross-sectional difference. Overall, the high-inflation episode sharpened price-setting differences among these specific industries rather than overturning the broader structure of firm-size and industry heterogeneity.

Table 4b: Firm characteristics and the frequency of price reviews and price changes — control variables (ordinal logistic regression estimates)

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
Year				
2010	Reference	Reference	Reference	Reference
2022	-0.203	-0.196	0.450	0.322
	(0.313)	(0.189)	(0.324)	(0.199)
Size				
Small	Reference	Reference	Reference	Reference
Medium	-0.009	-0.019	0.289*	0.184*
	(0.131)	(0.083)	(0.141)	(0.087)
Large	0.003	0.192*	0.494***	0.626***
	(0.134)	(0.087)	(0.143)	(0.093)
Very Large	0.377**	0.528***	0.791***	0.881***
	(0.145)	(0.096)	(0.150)	(0.100)
Industry				
Primary	Reference	Reference	Reference	Reference
Manufacturing	-0.103	-0.147	-0.177	-0.173
	(0.224)	(0.147)	(0.265)	(0.168)

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
Utilities	-0.765+	-0.656*	-0.332	-0.274
	(0.444)	(0.334)	(0.398)	(0.274)
Construction	0.321	0.622**	0.122	0.511*
	(0.311)	(0.206)	(0.374)	(0.224)
Trade	0.672**	0.561***	0.553*	0.419*
	(0.248)	(0.159)	(0.281)	(0.179)
Transport	-0.344	-0.556**	-0.315	-0.374+
	(0.295)	(0.202)	(0.332)	(0.213)
Household Services	-0.583*	-0.436*	-0.244	-0.281
	(0.294)	(0.181)	(0.335)	(0.204)
Business Services	-0.616**	-0.516***	-0.706*	-0.691***
	(0.233)	(0.151)	(0.274)	(0.172)
Government Services	-1.690***	-1.327***	-1.231***	-0.969***
	(0.294)	(0.176)	(0.324)	(0.203)
Year * Size				
2022*Small	Reference	Reference	Reference	Reference
2022*Medium	0.074	0.144	-0.077	0.121
	(0.191)	(0.111)	(0.183)	(0.109)

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
2022*Large	0.139	-0.007	-0.219	-0.233*
	(0.191)	(0.114)	(0.185)	(0.113)
2022*Very Large	-0.027	-0.235+	-0.236	-0.314*
	(0.193)	(0.126)	(0.187)	(0.123)
Year * Industry				
2022*Primary	Reference	Reference	Reference	Reference
2022*Manufacturing	0.541+	0.573**	0.441	0.540**
	(0.314)	(0.198)	(0.322)	(0.205)
2022*Utilities	0.731	0.445	-0.196	0.137
	(0.634)	(0.402)	(0.587)	(0.337)
2022*Construction	0.324	0.088	0.261	0.024
	(0.424)	(0.257)	(0.457)	(0.264)
2022*Trade	0.142	0.246	0.143	0.254
	(0.339)	(0.214)	(0.343)	(0.222)
2022*Transport	0.362	0.891**	0.345	0.745**
	(0.414)	(0.279)	(0.414)	(0.272)
2022*Household Services	0.538	0.383	0.074	0.089
	(0.402)	(0.235)	(0.416)	(0.247)

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
2022*Business Services	0.123 (0.326)	0.069 (0.202)	0.040 (0.332)	0.086 (0.208)
2022*Government Services	0.437 (0.390)	0.052 (0.226)	0.339 (0.390)	0.015 (0.238)

NB: The dependent variable is price-review frequency in columns (1) – (2) and price-change frequency in columns (3) – (4). Columns (1) and (3) are estimated on the balanced panel (firms appearing in both BOS samples); columns (2) and (4) on the full sample.

NB2: Cluster-robust standard errors in parentheses. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cell shading indicates the sign and statistical significance of estimated coefficients: red denotes negative and blue denotes positive estimates, with successively darker shades corresponding to significance at the 10%, 5%, 1%, and 0.1% levels. Coefficients in unshaded cells are not statistically significant at the 10% level. Estimates are from the same ordinal logistic regression specifications reported in Table 4a.

5.4 Model 2: Pricing factors

Economic and pricing theory identifies several key factors influencing firms' decisions to change prices, including cost pressures (labour, inputs, financing), demand conditions, market structure, and strategic considerations. However, the relative importance of each factor for the frequency of price reviews and changes remains an empirical question. To explore these relationships, we estimate a second ordinal logistic model using the same dependent variables as Model 1 — frequency of price reviews and frequency of price changes — but with a different specification of covariates (X_i). In place of the firm practices and process variables used in Model 1, we draw on firms' own assessments of the importance of several well-established drivers of price changes.¹⁷

Each covariate capturing a driver of price changes is a binary indicator for whether the firm rated that factor as important. A positive coefficient indicates that firms rating the factor important are associated with higher price-review and/or price-change frequency than those that did not, while a negative coefficient indicates an association with lower frequency. Standard controls, including year, firm size, industry, and their respective interactions are retained from Model 1.

A methodological consideration for Model 2 arises from changes in survey design between the 2010 and 2022 waves of the BOS. The 2010 survey asked firms about the importance of each factor in terms of its directional effect on prices, distinguishing between factors important only for price increases, only for price decreases, for both, or for neither. The 2022 survey instead asked firms to rate the importance of each factor on a scale of not important, moderately important, and very important, without reference to the direction of price change. To harmonise these responses across waves, we collapse the covariate levels into a binary classification: "not important" and "important." Under this mapping, the 2010 response "not important for either" is coded as not important, while all other 2010 responses are coded as important. The 2022 responses of moderately important and very important are similarly coded as important. While this sacrifices the richer variation available within each survey wave, it is a conservative approach that preserves comparability without imposing assumptions about the equivalence of directionally defined and magnitude-defined importance scales. No analogous recoding is required for the dependent variable. Although the 2010 response categories are expressed as numerical counts (e.g. "twice", "6 times or less") and the 2022 categories as named frequencies (e.g. "half-yearly", "annually"), both sets describe an ordinal hierarchy from infrequent to frequent price changes with a consistent directional ordering.

Table 5 presents the ordinal logistic regression estimates. As in Model 1, columns are organised by dependent variable and sample composition: columns (1) – (2) report results with price-review frequency as the dependent variable, and columns (3) – (4) report results with price-change frequency as the dependent variable. Each pair of columns represents the same model specification estimated on different sample subsets: columns (1) and (3) use a balanced panel, while columns (2) and (4) use the full sample. Additional model and sample specifications are presented in Appendix C.

The results from Model 2 reveal a clear asymmetry in how firms' reported pricing factors relate to the frequency of price reviews and price changes. Firms that rate labour costs as important are associated with lower price-review and price-change frequency, while firms that rate other input costs, demand, stock levels, or competitors' prices as important are associated with higher

¹⁷ The covariate vector can be written as: $X_i'\beta = \beta_0 + \beta_1 \text{Labour Cost} + \beta_2 \text{Financing Costs} + \beta_3 \text{Other Costs} + \beta_4 \text{Demand} + \beta_5 \text{Productivity} + \beta_6 \text{Stock Levels} + \beta_7 \text{Competitors' Price} + \beta_8 \text{Number of Competitors} + \beta_9 \text{Year}_{dummy} + \beta_{10} \text{Firm Size} + \beta_{11} \text{Industry} + \beta_{12} (\text{Year}_{dummy} * \text{Firm Size}) + \beta_{13} (\text{Year}_{dummy} * \text{Industry})$

frequency. This is not what a simple cost-pass-through story would predict. A plausible interpretation is that labour costs are relatively slow-moving and often governed by formal wage-setting or contractual processes, so firms for which labour costs are especially salient may adjust prices on a correspondingly infrequent schedule. Gautier et al. (2024) document the same pattern in euro area CPI microdata, finding that a higher labour-cost share is associated with lower price-change frequency, and Fabiani et al. (2006) provide related firm-survey evidence on the distinctive role of labour costs in price setting. The result also complements evidence that wage-to-price pass-through has weakened in the United States (Heise et al., 2022).

Firms that rate other input costs as important are associated with more frequent price reviews and changes, with stronger associations at the change stage. This asymmetry has a natural interpretation: other input costs are more exposed to commodity prices, exchange-rate movements, and supply-chain disruptions, all of which can generate more frequent repricing triggers. The same euro area study that links a higher labour-cost share to less frequent price changes finds the reverse for energy and raw-material inputs, whose larger cost share is associated with more frequent changes (Gautier et al., 2024); the recent inflation surge shows the same, with products more exposed to energy adjusting most frequently (Gautier et al., 2026). Australian earnings-call evidence points in the same direction, with final-price discussions more closely associated with input costs than with demand (Windsor & Zang, 2023). Financing costs are positive and significant in the balanced panel but not in the full sample, indicating a less robust association.

Demand conditions and stock levels stand out among the remaining factors. Firms that rate demand as important are associated with more frequent price reviews and price changes across most specifications. Dogra et al. (2023) provide complementary US survey evidence. Firms that placed greater weight on demand in their pricing decisions exhibited higher cost pass-through, suggesting that demand conditions amplify the price response to cost shocks. The stock-level association is the most robust of the positive associations — statistically significant across all specifications, stable in magnitude, and among the largest in the model — suggesting that firms for which inventory management is salient reprice more actively, using price as a lever to manage excess or insufficient stock.

Competitors' prices are positively associated with price-review and price-change frequency, indicating that firms attentive to rival pricing adjust prices more often. The number of competitors, by contrast, is not significant in most specifications, suggesting that the salience of rival pricing matters more than measured competition intensity. US survey evidence is consistent with this, with firms that placed greater weight on competitors' prices exhibiting higher cost pass-through (Dogra et al., 2023), and euro area firm surveys likewise finding competitors' prices to be an important factor in price setting (Fabiani et al., 2006). Open-ended interviews with US firms add a mechanism. Firms watch direct competitors closely, with rivals' pricing serving as a coordination signal that can amplify pass-through when firms move in tandem under common shocks and dampen it under firm-specific shocks (Bruine de Bruin et al., 2025). This complements the Model 1 result that competitor-based pricing becomes insignificant once industry controls are included, suggesting that competitive pricing dynamics operate mainly within rather than across industries.

Wave-specific estimates in Table C4 (Appendix C) reinforce this pattern. The negative labour-cost association is present in both survey years, whereas the positive association for other input costs is concentrated in 2022 — consistent with input-cost pressures becoming more salient during the high-inflation period. Two factors asked only in 2022 also enter the estimates for that wave: firms rating exchange rates as important are associated with more frequent reviews and changes, while those rating their customers as price-sensitive are associated with less frequent reviews.

Table 5: Pricing factors and the frequency of price reviews and price changes (ordinal logistic regression estimates)

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
Labour costs	-0.474*** (0.086)	-0.335*** (0.053)	-0.348*** (0.087)	-0.237*** (0.053)
Financing costs	0.112* (0.050)	0.037 (0.031)	0.106* (0.047)	0.030 (0.030)
Other input costs	0.078 (0.088)	0.109* (0.052)	0.183* (0.085)	0.189*** (0.051)
Demand conditions	0.131* (0.065)	0.200*** (0.039)	0.127* (0.061)	0.133*** (0.037)
Productivity	-0.009 (0.057)	-0.049 (0.035)	-0.022 (0.055)	-0.069* (0.034)
Stock levels	0.245*** (0.058)	0.277*** (0.035)	0.243*** (0.056)	0.248*** (0.034)
Competitors' prices	0.100 (0.064)	0.101** (0.039)	0.184** (0.063)	0.190*** (0.037)
Number of competitors	-0.013 (0.056)	-0.003 (0.035)	-0.095+ (0.055)	-0.047 (0.034)

	Price reviews		Price changes	
	(1) Balanced Panel	(2) Full Sample	(3) Balanced Panel	(4) Full Sample
Controls	Yes	Yes	Yes	Yes
N	3,291	8,448	3,585	9,252
McFadden pseudo R ²	0.05	0.04	0.05	0.05

NB: The dependent variable is price-review frequency in columns (1) – (2) and price-change frequency in columns (3) – (4). Columns (1) and (3) are estimated on the balanced panel (firms appearing in both BOS samples); columns (2) and (4) on the full sample.

NB2: Cluster-robust standard errors in parentheses. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cell shading indicates the sign and statistical significance of estimated coefficients: red denotes negative and blue denotes positive estimates, with successively darker shades corresponding to significance at the 10%, 5%, 1%, and 0.1% levels. Coefficients in unshaded cells are not statistically significant at the 10% level.

NB3: Covariates capture firms' self-reported importance of each factor when considering price changes, coded as a binary variable (important vs. not important). See Appendix B for details on the harmonisation of response scales across survey waves.

5.5 Limitations

Several limitations should be noted. The BOS is fielded at two points twelve years apart, limiting our ability to disentangle pandemic-specific effects from longer-term structural change. The survey's exclusion of firms with fewer than six employees means our results may not generalise to the smallest enterprises. Self-reported survey data are subject to recall bias and varying interpretation across respondents and waves, and changes in question design between 2010 and 2022 required harmonisation that sacrificed some within-wave variation. The empirical approach is associational; we do not claim causal identification for any of the relationships documented. This paper provides a contextualised understanding of the dynamics behind changes in firm price-setting behaviour, with the goal of informing macroeconomic assumptions about how firms set prices in New Zealand.

6. Summary and conclusion

This Analytical Note has examined how New Zealand firms set prices, using the 2010 and 2022 Business Operations Survey linked to the Longitudinal Business Database. Two features of the data make it well suited to the question: the price-setting module captures the review and change stages separately, and the administrative linkage allows pricing behaviour to be resolved across firm size, industry, and pricing practice. The central picture that emerges is that the rise in price-change frequency between 2010 and 2022 reflects firms acting on their existing reviews more often, rather than monitoring prices more closely, and that this aggregate shift sits on top of large and stable cross-sectional differences in how frequently firms reprice.

The clearest change between the two surveys is at the adjustment stage. The share of firms changing prices twice or more a year rose from 38% to 46%, while the frequency of price reviews was broadly unchanged. New Zealand firms appear to have responded to the high-inflation environment by converting a greater share of their existing reviews into price changes, rather than by reviewing prices more often. This pattern is consistent with international evidence documenting a substantial increase in the frequency of price adjustment during the post-COVID inflationary period (Bilyk et al., 2024; Cavallo et al., 2024; Fink & Hambur, 2026; Montag & Villar, 2025). The twelve-year gap between surveys nonetheless prevents definitive attribution to the pandemic; longer-term structural shifts such as digitalisation may also have contributed. Consistent with such a longer-term shift, Buckle et al. (2026) find that the proportion of firms changing prices became more responsive to inflation from the mid-1990s, with the COVID-19 episode marked by frequent but comparatively small price changes.

Firm size and industry are associated with substantial and persistent differences in price-review and price-change frequency, and these differences hold across both survey waves despite their markedly different inflation environments. Larger firms reprice more frequently than smaller firms, and the gap widens with size, most clearly for price changes. Firms in wholesale and retail trade adjust prices most frequently, while business and government services adjust prices least frequently. These characteristics are far more important correlates of price-review and price-change frequency than the inflation environment and its interactions with firm type. Where the 2022 episode induced differential movement, it was concentrated in manufacturing and transport, the industries with the clearest 2022 interaction effects; smaller firms also increased their price-change frequency by more than larger firms, consistent with evidence that smaller firms are more likely to use state-dependent pricing (Bunn et al., 2026). For the Reserve Bank, this implies that aggregate measures of price flexibility are most usefully read alongside the composition of the

firms generating them, since the same aggregate frequency can reflect very different underlying populations of price-setters.

How firms set prices matters as much as what they face. Cost-plus mark-up pricing, the most common strategy, is associated with the most active price adjustment; long-term contracts are a robust source of nominal rigidity; and firms that focus on current economic conditions reprice more frequently than those that incorporate forward-looking information. This last pattern aligns with evidence that measures of price-setting behaviour sensitive to recent inflation outperform forward-looking expectations in forecasting non-tradables inflation (Kendall & Sing, 2025), and points to a largely reactive mode of price setting in which firms respond to realised costs and demand rather than anticipating them.

Firms' reported drivers of price changes are associated with repricing frequency in different ways. Firms that rate labour costs as important tend to review and change prices less frequently, consistent with the slow-moving, contractually governed nature of wages and with euro area evidence that a higher labour share is associated with less frequent price changes (Gautier et al., 2024). Firms that rate other input costs, demand, stock levels, or competitors' prices as important tend to reprice more frequently. This asymmetry suggests that the composition of cost pressure, not only its overall intensity, is informative about how frequently firms adjust: pressure transmitted through non-labour channels is associated with more frequent adjustment, and pressure through the labour-cost channel with less.

These cross-sectional findings are the firm-level counterpart to recent macro-modelling evidence on the aggregate consequences of changes in price-adjustment frequency (Fink & Hambur, 2026). Such models show why shifts in price rigidity matter for inflation and monetary policy; the BOS helps identify where in the firm population those shifts are concentrated. For the Reserve Bank, the value of this work lies less in any single coefficient than in the picture it provides of how cost pressure transmits to prices — which firms respond, through which channels, and how those responses feed into inflation. As further survey waves become available, the same framework can help assess whether the 2022 patterns were a temporary response to a high-inflation episode or evidence of a more persistent change in New Zealand firms' price-setting behaviour.

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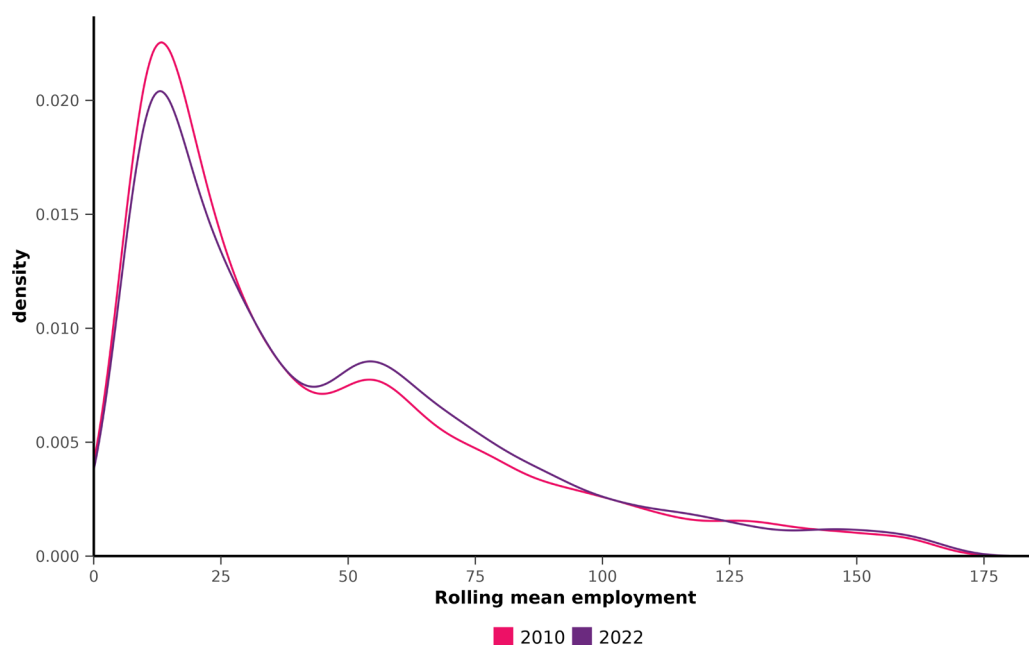
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Appendix A: Additional figures

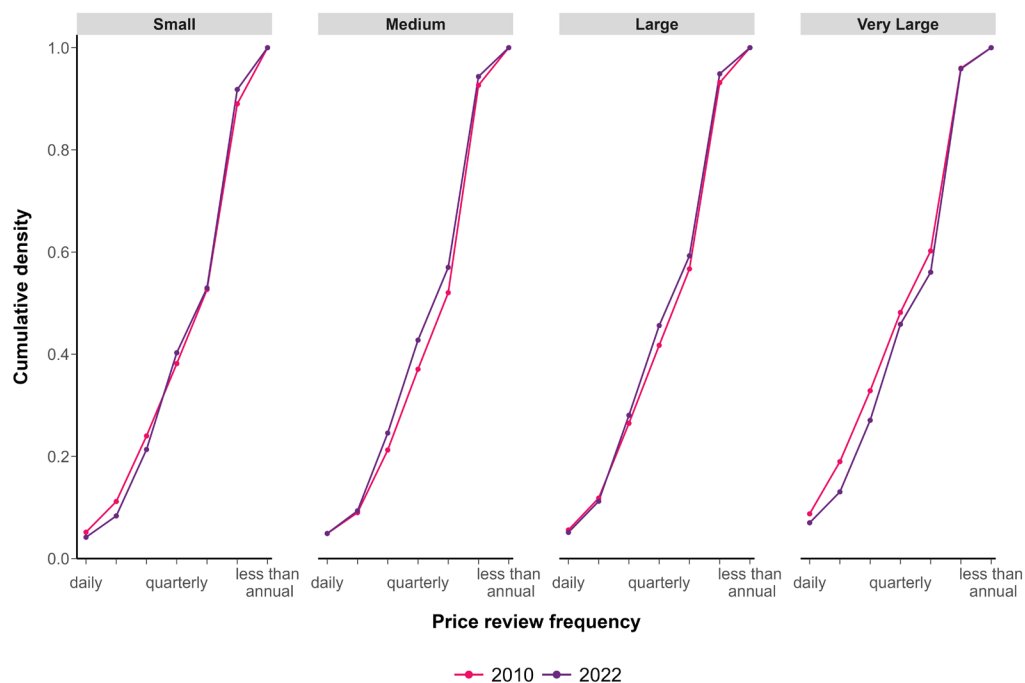
Figure A1: Firm size distribution by BOS wave (rolling mean employment, kernel density)



NB: Rolling mean employment is a 12-month moving average of the number of employees.

NB2: Distribution truncated at the 10th and 90th percentiles of firm size for confidentiality.

Figure A2: Cumulative distribution function of price-review frequency by firm size

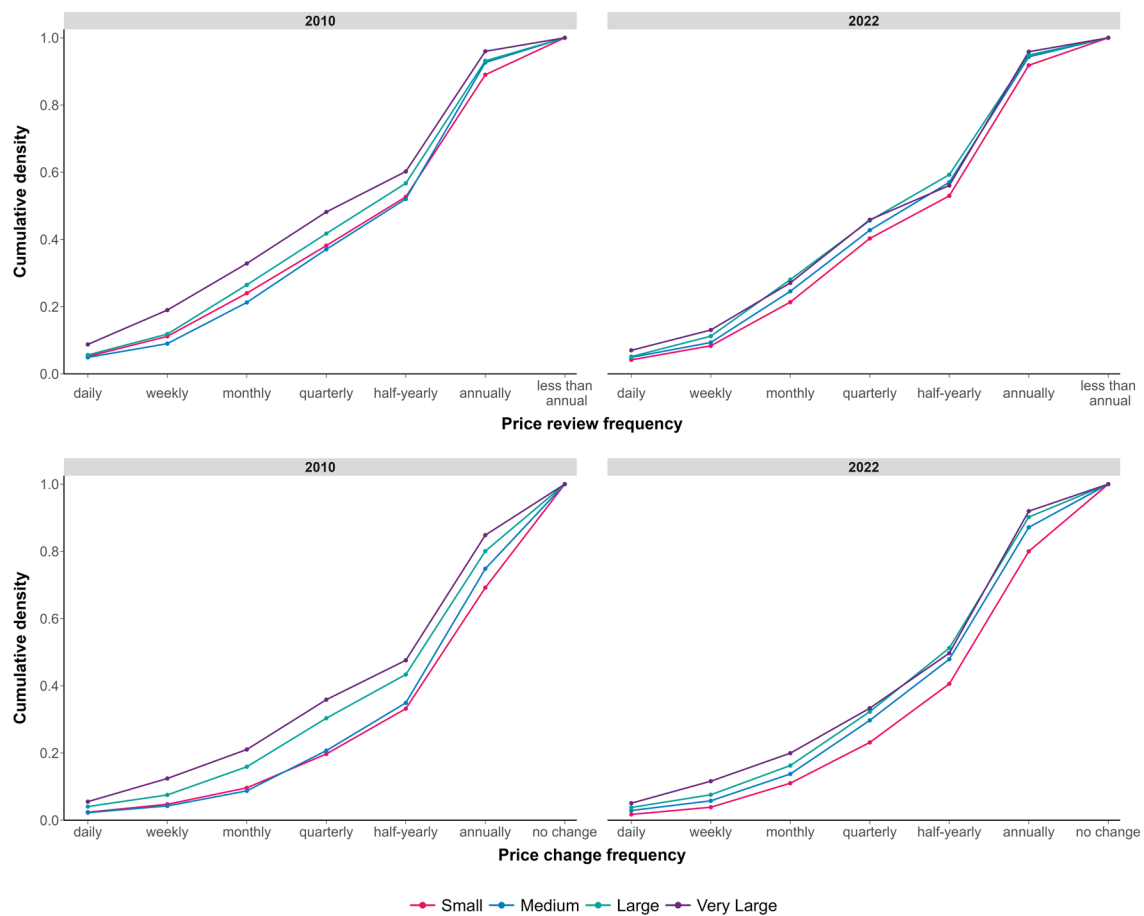


NB: A leftward shift in the distribution implies a greater share of firms reviewing their prices more frequently.

NB2: Ordered: "daily", "weekly", "monthly", "quarterly", "half-yearly", "annually", "less than annual".

NB3: Small (6–19 employees), Medium (20–49 employees), Large (50–99 employees), and Very Large (100+ employees) (see Table 2).

Figure A3: Cumulative distribution function of price-review frequency and price-change frequency by firm size, separately for 2010 and 2022



NB: A leftward shift in the distribution implies a greater share of firms reviewing or changing their prices more frequently. Unlike Figure 4, which presents each size group separately across years, this figure compares size groups within each BOS wave.

NB2: Survey responses for "Price-change frequency" harmonised into approximately equal categories due to differences in question design between BOS 2010 and BOS 2022 (see Appendix B).

NB3: Small (6–19 employees), Medium (20–49 employees), Large (50–99 employees), and Very Large (100+ employees) (see Table 2).

Figure A4: Cumulative distribution function of firm price-review frequency by industry

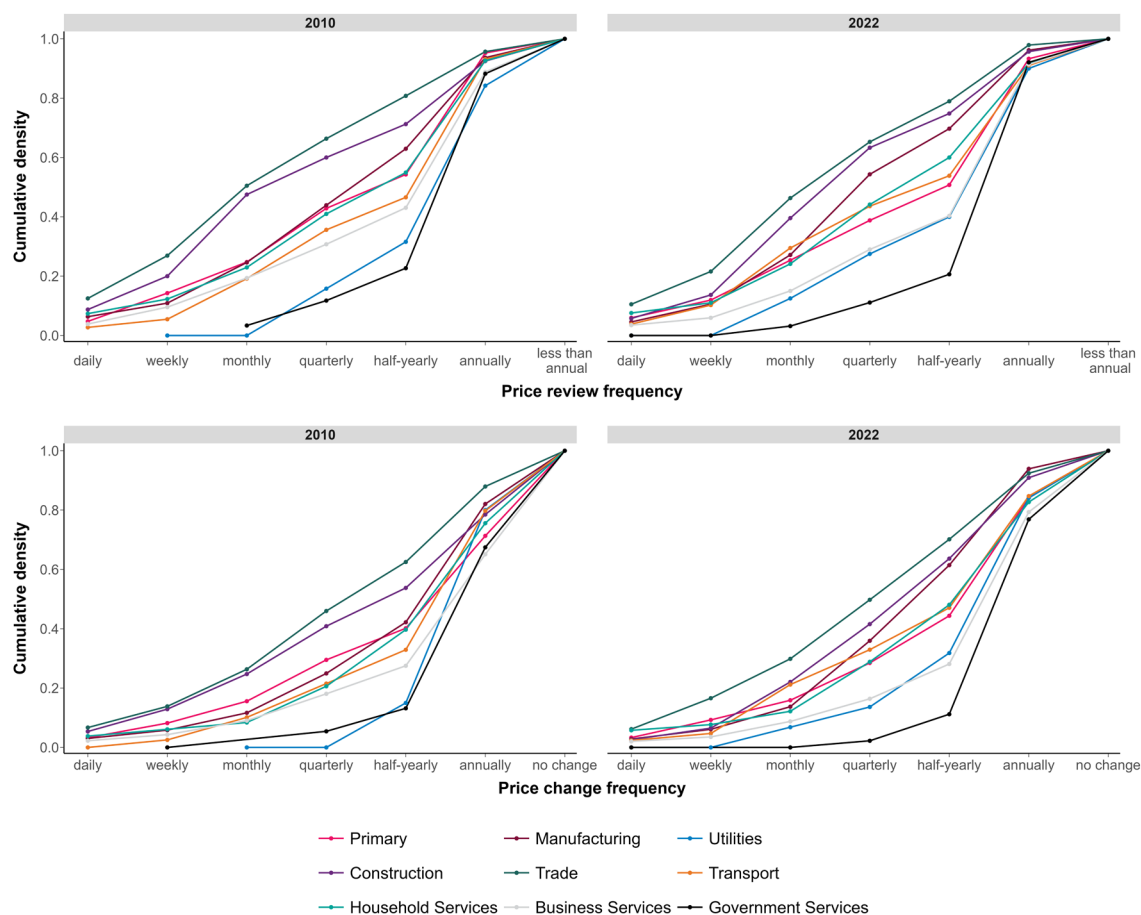


NB: A leftward shift in the distribution implies a greater share of firms reviewing their prices more frequently.

NB2: Ordered: "daily", "weekly", "monthly", "quarterly", "half-yearly", "annually", "less than annual".

NB3: Industry groupings are nine groups aggregated from ANZSIC codes, harmonised across BOS 2010 and BOS 2022 (see Table 3).

Figure A5: Cumulative distribution function of price-review frequency and price-change frequency by industry, separately for 2010 and 2022

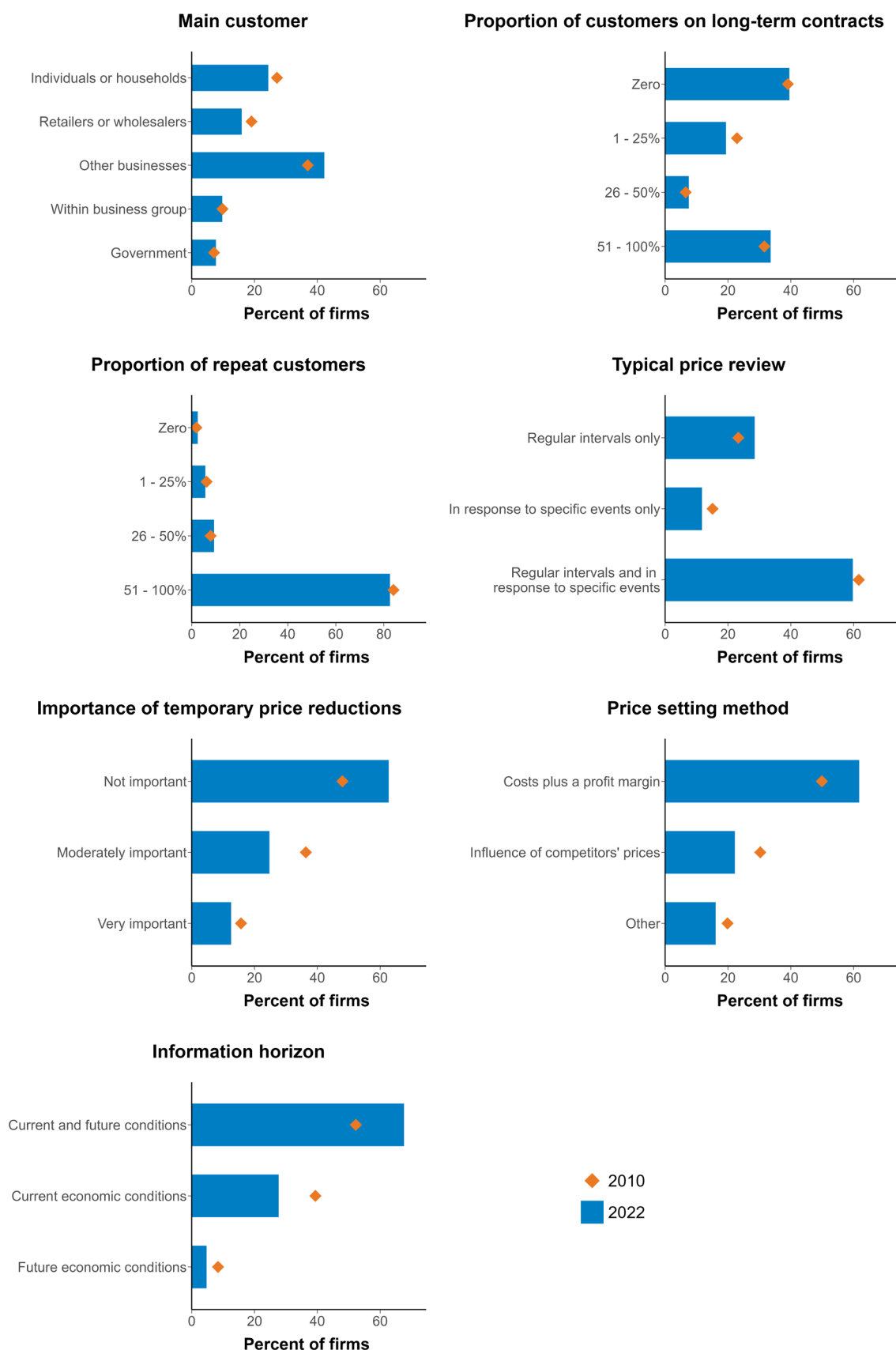


NB: A leftward shift in the distribution implies a greater share of firms reviewing or changing their prices more frequently. Unlike Figure 5, which presents each industry group separately across years, this figure compares industry groups within each BOS wave.

NB2: Survey responses for "Price-change frequency" harmonised into approximately equal categories due to differences in question design between BOS 2010 and BOS 2022 (see Appendix B).

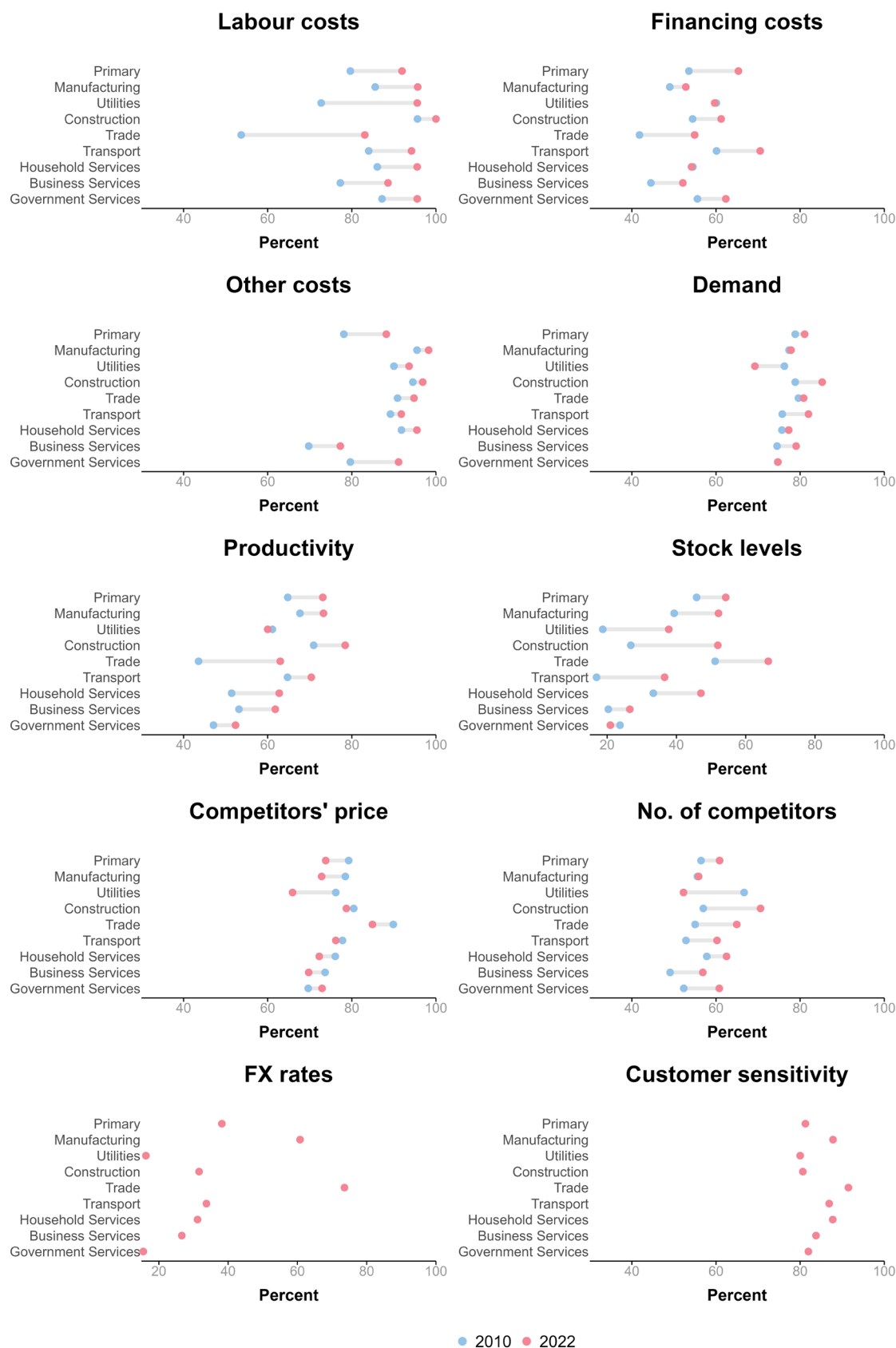
NB3: Industry groupings are nine groups aggregated from ANZSIC codes, harmonised across BOS 2010 and BOS 2022 (see Table 3).

Figure A6: Firm pricing practices and process characteristics



NB: Bars show the 2022 share of responses; dots show the 2010 share. See Appendix B for the underlying survey questions and harmonisation of response categories between BOS 2010 and BOS 2022.

Figure A7: Share of firms reporting each factor as important when changing prices, by industry



NB: Survey responses harmonised into binary “important” and “not important” categories due to differences in question design between BOS 2010 and BOS 2022 (see Appendix B). Some factors were not asked in both years.

NB2: Industry groupings are nine groups aggregated from ANZSIC codes, harmonised across BOS 2010 and BOS 2022 (see Table 3).

Appendix B: Question design and survey changes

Table B1: Survey question concordance between BOS 2010 and BOS 2022

Question	BOS 2010		BOS 2022		Key Changes
	No.	Response	No.	Response	
Currently, which of the following is the main group that pays this business for its main product?	3	1. individuals or households 2. businesses within the business group 3. retailers or wholesalers 4. other businesses 5. government	3	1. individuals or households 2. businesses within the business group 3. retailers or wholesalers 4. other businesses 5. government	
What proportion of this business's customers have the prices they pay set by long-term (at least one year) formal contracts?	4	1. 0% 2. 25% or less 3. 50% or less 4. 51% or more 5. don't know	4	1. zero 2. 1–25% 3. 26–50% 4. 51–100% 5. don't know	Changes in response category wording.
What proportion of this business's customers return for repeat business?	5	1. 0% 2. 25% or less 3. 50% or less 4. 51% or more 5. don't know	5	1. zero 2. 1–25% 3. 26–50% 4. 51–100% 5. don't know	Changes in response category wording.
Are all customers charged the same price for this business's main product (good or service)?	7	1. yes 2. no, but fixed pricing schedules are used for specific types of customers			Question removed.

Question		BOS 2010		BOS 2022	Key Changes
		3. no, prices are set on a case-by-case basis			
Who reviews and sets the price of this business's main product?	8	1. this business 2. parent business 3. other	7	1. this business 2. parent business 3. other	
When does this business typically review the price of its main product?	9	1. at regular intervals only, regardless of specific events 2. generally at regular intervals, but also in response to specific events 3. in response to specific events only	8	1. at regular intervals only, regardless of specific events 2. in response to specific events only 3. at regular intervals, but also in response to specific events	Changes in response category wording. Changes in question routing format.
Approximately how often does this business review the price of its main product?	10	1. daily 2. weekly 3. monthly 4. quarterly 5. half-yearly 6. annually 7. less frequently than annually	9	1. daily 2. weekly 3. monthly 4. quarterly 5. half-yearly 6. annually 7. less than once a year	
Which of the following are important reasons why this business does not review prices more frequently?	11	1. cost of managerial staff time 2. cost of non-managerial staff time 3. other costs of the review process	10	1. cost of managerial staff time 2. cost of non-managerial staff time 3. other costs of the review process	Additional response categories.

Question	BOS 2010	BOS 2022	Key Changes
	4. the factors affecting pricing decisions do not change more frequently 5. the information used to inform pricing decisions is not available more frequently 6. would not change prices more frequently 7. other reasons	4. the factors affecting pricing decisions do not change more frequently 5. the information used to inform pricing decisions is not available more frequently 6. would not change prices more frequently 7. other reasons 8. don't know	
Approximately how much staff time in total is spent on an average price review of this business's main product?	12	1. total staff hours 2. number of staff whose full-time job is reviewing prices	Question removed.
If during a price review, it becomes apparent that a relatively large price change may occur, is extra time spent on the review process?	13	1. yes, extra managerial time 2. yes, extra non-managerial time 3. no extra time is spent on the review process 4. don't know	Question removed.
Over the last financial year, approximately how often did this business change the price of its main product?	14	1. zero 2. once 3. twice 4. 6 times or less 5. 26 times or less 6. 182 times or less	11 1. daily 2. weekly 3. monthly 4. quarterly 5. half-yearly 6. annually Changes in response category wording/options.

Question	BOS 2010	BOS 2022	Key Changes
	7. More than 182 times	7. did not change	
For a typical price change of this business's main product, approximately how many hours in total are spent explaining the change to customers?	15 1. total staff hours		Question removed.
How important are temporary price reductions (i.e. sales) to the pricing strategy of this business?	16 1. not at all important 2. a little important 3. moderately important 4. very important 5. don't know	12 1. not important 2. moderately important 3. very important 4. don't know	Changes in response category options.
Which of the following methods best describes how this business sets the price of its main product?	17 1. rule of thumb (e.g. change by a fixed amount or in accordance with inflation) 2. costs plus a profit margin 3. the influence of competitors' prices 4. other	13 1. costs plus a profit margin 2. the influence of competitors' prices 3. other (e.g. change by a fixed amount or in accordance with inflation)	Changes to response category wording/options.
Do the pricing decisions for this business's main product primarily rely on:	18 1. current economic conditions 2. expected future economic conditions 3. current and expected future economic conditions are equally important 4. don't know	14 1. current economic conditions 2. expected future economic conditions 3. current and expected future economic conditions are equally important 4. don't know	

Question	BOS 2010	BOS 2022	Key Changes
How important are the following factors when considering price changes for this business main product? • a change in labour costs • a change in financing costs • a change in other costs (e.g. purchase of goods from suppliers, rent) • a change in demand • a change in productivity • a change in stock levels • a change in competitors' price • a change in number of competitors • a change in exchange rates • customer sensitivity to price changes	19 1. only important for price increases 2. only important for price decreases 3. important for both price increases and decreases 4. not important for either 5. don't know	15 1. not important 2. moderately important 3. very important	Wholesale changes to response format and response options.
How important are the following considerations in preventing this business from raising the price of its main product? • the risk that competitors will not follow suit • the factors causing pressure to raise prices may only be temporary • formal contracts specifying a fixed price	20 1. not important 2. moderately important 3. very important 4. don't know		Question removed.

Question	BOS 2010	BOS 2022	Key Changes
- implicit contracts (customers expect prices to remain stable) - preference for maintaining prices at certain thresholds (e.g. \$4.99 rather than \$5.00) - price changes entail “physical” costs (e.g. printing catalogues) - the ability to adjust non-price elements (e.g. the level of after-sales service)			
Do the customers of this business view price increases resulting from increased costs as:	21 - less acceptable than price increases resulting from increased demand - more acceptable than price increases resulting from increased demand - no different to price increases resulting from increased demand - don't know		Question removed.
Comparing the current pricing practices of this business with [pre-COVID/2 years ago], which, if any, of the following have changed? - proportion of customers on long-term (at least one year) contracts - frequency of price reviews - frequency of price changes	22 - decreased - stayed the same - increased - don't know	16 - decreased - stayed the same - increased - don't know	Question framing changed from “two years ago” in BOS 2010 to “pre-COVID” practices in BOS 2022.

Question	BOS 2010	BOS 2022	Key Changes
- profit margin - sensitivity of customers to price changes			
Are the answers provided for this business's main product applicable to the pricing processes used for this business's other products?	23 - yes - no - this business only sells one product	17 - yes - no - this business only sells one product	
Has this business conducted, or is in the process of conducting, a price review specifically because of the announced GST increase?	24 - yes - no, but this business plans to - no, and this business does not expect to		Question removed.

NB: Questions 3–5, 9, 10, 14, and 16–19 in the 2010 survey (questions 3–5, 8, 9, and 11–15 in the 2022 survey) are used as covariates or dependent variables in the empirical analysis.

Appendix C: Additional model and sample specifications

Table C1: Firm pricing practices and the frequency of price reviews and price changes — separate cross-sectional estimates (ordinal logistic regression estimates)

	Price reviews		Price changes	
	(1) 2010	(2) 2022	(3) 2010	(4) 2022
Main customer				
Individuals or households	Reference	Reference	Reference	Reference
Businesses within this business group	-0.193 (0.138)	-0.093 (0.127)	0.110 (0.128)	0.000 (0.128)
Retailers or wholesalers	-0.263* (0.110)	-0.345** (0.106)	-0.015 (0.106)	-0.330** (0.101)
Other businesses	-0.123 (0.097)	-0.061 (0.091)	0.142 (0.093)	0.132 (0.086)
Government	-0.055 (0.170)	-0.256+ (0.142)	0.120 (0.156)	-0.366* (0.143)
Long-term contracts				
Zero	Reference	Reference	Reference	Reference
Ordered levels: 1–25%, 26–50%, 51–100%	-0.518*** (0.066)	-0.528*** (0.058)	-0.334*** (0.062)	-0.553*** (0.057)
Repeat customers				
Zero	Reference	Reference	Reference	Reference

	Price reviews		Price changes	
	(1) 2010	(2) 2022	(3) 2010	(4) 2022
Ordered levels: 1–25%, 26–50%, 51–100%	-0.462+	-0.408	-0.319	0.147
	(0.246)	(0.297)	(0.218)	(0.322)
Typical price review				
At regular intervals	Reference	Reference	Reference	Reference
In response to specific events only	-1.749***	-1.181***	-1.056***	-1.035***
	(0.219)	(0.221)	(0.126)	(0.119)
At regular intervals and in response to specific events	-0.211**	-0.041	-0.261***	-0.047
	(0.077)	(0.063)	(0.074)	(0.063)
Sales strategy				
Not important	Reference	Reference	Reference	Reference
Ordered levels: moderately important, very important	0.694***	0.405***	0.738***	0.365***
	(0.075)	(0.071)	(0.073)	(0.069)
Price-setting method				
Cost-plus mark-up	Reference	Reference	Reference	Reference
Competitor's pricing	0.076	-0.081	0.075	-0.105
	(0.071)	(0.078)	(0.069)	(0.075)
Other (i.e. inflation)	-0.579***	-0.425***	-0.349***	-0.340***
	(0.093)	(0.085)	(0.087)	(0.081)
Information horizon				
Current economic conditions	Reference	Reference	Reference	Reference

	Price reviews		Price changes	
	(1) 2010	(2) 2022	(3) 2010	(4) 2022
Expected future economic conditions	-0.618*** (0.121)	-0.105 (0.146)	-0.269** (0.104)	-0.168 (0.151)
Current and future economic conditions	-0.357*** (0.068)	-0.156* (0.068)	-0.275*** (0.065)	-0.274*** (0.064)
Controls	Yes	Yes	Yes	Yes
N	3,468	4,182	3,780	4,542
McFadden pseudo R²	0.07	0.06	0.06	0.07

NB: The dependent variable is price-review frequency in columns (1) – (2) and price-change frequency in columns (3) – (4). Columns (1) and (3) are estimated on the 2010 BOS sample; columns (2) and (4) on the 2022 BOS sample. Equation (1) estimated separately on each wave; year interactions are therefore excluded.

NB2: Cluster-robust standard errors in parentheses. + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Cell shading indicates the sign and statistical significance of estimated coefficients: red denotes negative and blue denotes positive estimates, with successively darker shades corresponding to significance at the 10%, 5%, 1%, and 0.1% levels. Coefficients in unshaded cells are not statistically significant at the 10% level. Coefficients on control variables (industry and firm size) are reported in Table C2.

Table C2: Firm characteristics and the frequency of price reviews and price changes — separate cross-sectional estimates, control variables (ordinal logistic regression estimates)

	Price reviews		Price changes	
	(1) 2010	(2) 2022	(3) 2010	(4) 2022
Size				
Small	Reference	Reference	Reference	Reference
Medium	-0.023 (0.081)	0.113 (0.076)	0.149+ (0.078)	0.342*** (0.074)
Large	0.167+ (0.087)	0.184* (0.078)	0.515*** (0.084)	0.458*** (0.076)
Very Large	0.482*** (0.095)	0.304*** (0.087)	0.726*** (0.092)	0.670*** (0.084)
Industry				
Primary	Reference	Reference	Reference	Reference
Manufacturing	-0.135 (0.144)	0.428** (0.141)	-0.144 (0.150)	0.399** (0.135)
Utilities	-0.641+ (0.330)	-0.239 (0.230)	-0.169 (0.247)	-0.176 (0.221)
Construction	0.591** (0.204)	0.720*** (0.161)	0.498* (0.201)	0.572*** (0.157)
Trade	0.494** (0.156)	0.869*** (0.157)	0.355* (0.162)	0.786*** (0.152)

	Price reviews		Price changes	
	(1) 2010	(2) 2022	(3) 2010	(4) 2022
Transport	-0.498* (0.199)	0.329+ (0.199)	-0.264 (0.192)	0.386* (0.190)
Household Services	-0.404* (0.183)	-0.065 (0.167)	-0.171 (0.187)	-0.236 (0.166)
Business Services	-0.471** (0.148)	-0.492*** (0.138)	-0.558*** (0.154)	-0.719*** (0.136)
Government Services	-1.274*** (0.184)	-1.292*** (0.166)	-0.831*** (0.191)	-1.063*** (0.163)

NB: The dependent variable is price-review frequency in columns (1) – (2) and price-change frequency in columns (3) – (4). Columns (1) and (3) are estimated on the 2010 BOS sample; columns (2) and (4) on the 2022 BOS sample. Equation (1) estimated separately on each wave; year interactions are therefore excluded.

NB2: Cluster-robust standard errors in parentheses. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cell shading indicates the sign and statistical significance of estimated coefficients: red denotes negative and blue denotes positive estimates, with successively darker shades corresponding to significance at the 10%, 5%, 1%, and 0.1% levels. Coefficients in unshaded cells are not statistically significant at the 10% level. Estimates are from the same ordinal logistic regression specifications reported in Table C1.

Table C3: Firm pricing practices and the frequency of price reviews and price changes — sequential addition of controls (ordinal logistic regression estimates)

	Price reviews				Price changes			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Main customer								
Individuals or households	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Businesses within this business group	0.035 (0.087)	0.039 (0.087)	0.015 (0.087)	-0.166+ (0.093)	0.174* (0.085)	0.195* (0.085)	0.144+ (0.085)	0.022 (0.090)
Retailers or wholesalers	0.079 (0.067)	0.079 (0.067)	0.026 (0.068)	-0.320*** (0.076)	0.221*** (0.064)	0.228*** (0.065)	0.127+ (0.065)	-0.193** (0.073)
Other businesses	0.134* (0.061)	0.133* (0.061)	0.104+ (0.061)	-0.101 (0.066)	0.342*** (0.058)	0.334*** (0.058)	0.272*** (0.058)	0.119+ (0.062)
Government	-0.306** (0.107)	-0.307** (0.108)	-0.359*** (0.107)	-0.184+ (0.108)	-0.141 (0.100)	-0.148 (0.103)	-0.252* (0.103)	-0.150 (0.103)
Long-term contracts								
Zero	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Ordered levels: 1–25%, 26–50%, 51–100%	-0.603*** (0.042)	-0.603*** (0.042)	-0.644*** (0.042)	-0.520*** (0.043)	-0.496*** (0.039)	-0.499*** (0.040)	-0.573*** (0.040)	-0.449*** (0.041)
Repeat customers								
Zero	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Ordered levels: 1–25%, 26–50%, 51–100%	-0.112 (0.171)	-0.113 (0.172)	-0.121 (0.169)	-0.451* (0.200)	0.043 (0.176)	0.038 (0.184)	0.026 (0.177)	-0.129 (0.208)

	Price reviews				Price changes			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Typical price review								
At regular intervals	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
In response to specific events only	-1.360***	-1.352***	-1.322***	-1.434***	-0.980***	-0.950***	-0.901***	-1.022***
	(0.157)	(0.157)	(0.157)	(0.157)	(0.084)	(0.084)	(0.085)	(0.085)
At regular intervals and in response to specific events	-0.054	-0.047	-0.044	-0.120*	-0.101*	-0.070	-0.060	-0.138**
	(0.048)	(0.048)	(0.049)	(0.048)	(0.047)	(0.047)	(0.047)	(0.047)
Sales strategy								
Not important	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Ordered levels: moderately important, very important	0.731***	0.739***	0.699***	0.547***	0.698***	0.746***	0.692***	0.548***
	(0.049)	(0.049)	(0.050)	(0.051)	(0.048)	(0.049)	(0.048)	(0.050)
Price-setting method								
Cost-plus mark-up	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Competitor's pricing	-0.118*	-0.106*	-0.111*	0.010	-0.164***	-0.103*	-0.110*	0.000
	(0.051)	(0.052)	(0.051)	(0.052)	(0.050)	(0.050)	(0.050)	(0.051)
Other (i.e. inflation)	-0.736***	-0.728***	-0.733***	-0.502***	-0.600***	-0.556***	-0.562***	-0.351***
	(0.060)	(0.060)	(0.060)	(0.062)	(0.056)	(0.056)	(0.057)	(0.059)
Information horizon								
Current economic conditions	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Expected future economic conditions	-0.423***	-0.417***	-0.433***	-0.413***	-0.254**	-0.215*	-0.255**	-0.227**
	(0.091)	(0.091)	(0.092)	(0.093)	(0.085)	(0.086)	(0.086)	(0.087)

	Price reviews				Price changes			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Current and future economic conditions	-0.214*** (0.047)	-0.228*** (0.047)	-0.258*** (0.048)	-0.255*** (0.048)	-0.150*** (0.045)	-0.225*** (0.045)	-0.286*** (0.045)	-0.272*** (0.045)
Year effects		✓	✓	✓		✓	✓	✓
Firm size controls			✓	✓			✓	✓
Industry controls				✓				✓
N	7,653	7,653	7,653	7,653	8,319	8,319	8,319	8,319
McFadden pseudo R²	0.04	0.04	0.04	0.06	0.03	0.04	0.05	0.06

NB: The dependent variable is price-review frequency in columns (1) – (4) and price-change frequency in columns (5) – (8). Controls are added sequentially, from an unconditional specification through to the full set of controls excluding interaction terms. Full sample.

NB2: Cluster-robust standard errors in parentheses. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cell shading indicates the sign and statistical significance of estimated coefficients: red denotes negative and blue denotes positive estimates, with successively darker shades corresponding to significance at the 10%, 5%, 1%, and 0.1% levels. Coefficients in unshaded cells are not statistically significant at the 10% level.

Table C4: Pricing factors and the frequency of price reviews and price changes — separate cross-sectional estimates (ordinal logistic regression estimates)

	Price reviews		Price changes	
	(1) 2010	(2) 2022	(3) 2010	(4) 2022
Labour costs	-0.355*** (0.064)	-0.264** (0.094)	-0.262*** (0.062)	-0.179+ (0.093)
Financing costs	0.120* (0.048)	-0.040 (0.040)	0.136** (0.047)	-0.061 (0.039)
Other input costs	-0.071 (0.072)	0.281*** (0.074)	0.071 (0.072)	0.306*** (0.072)
Demand conditions	0.267*** (0.062)	0.136** (0.051)	0.184** (0.059)	0.072 (0.048)
Productivity	-0.096+ (0.054)	0.001 (0.047)	-0.105+ (0.054)	-0.037 (0.045)
Stock levels	0.268*** (0.055)	0.245*** (0.047)	0.183*** (0.054)	0.278*** (0.045)
Competitors' prices	0.181** (0.064)	0.062 (0.050)	0.241*** (0.061)	0.168*** (0.049)
Number of competitors	0.033 (0.056)	-0.023 (0.047)	0.025 (0.054)	-0.094* (0.045)
Exchange rates		0.183*** (0.044)		0.091* (0.042)
Customer price sensitivity		-0.123* (0.044)		-0.073 (0.042)

	Price reviews		Price changes	
	(1) 2010	(2) 2022	(3) 2010	(4) 2022
			(0.058)	(0.058)
Controls	Yes	Yes	Yes	Yes
N	3,510	4,905	3,831	5,388
McFadden pseudo R ²	0.05	0.05	0.04	0.05

NB: The dependent variable is price-review frequency in columns (1) – (2) and price-change frequency in columns (3) – (4). Columns (1) and (3) are estimated on the 2010 BOS sample; columns (2) and (4) on the 2022 BOS sample. Equation (1) estimated separately on each wave; year interactions are therefore excluded.

NB2: Cluster-robust standard errors in parentheses. + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Cell shading indicates the sign and statistical significance of estimated coefficients: red denotes negative and blue denotes positive estimates, with successively darker shades corresponding to significance at the 10%, 5%, 1%, and 0.1% levels. Coefficients in unshaded cells are not statistically significant at the 10% level.

NB3: Covariates capture firms' self-reported importance of each factor when considering price changes, coded as a binary variable (important vs. not important). See Appendix B for details on the harmonisation of response scales across survey waves.