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Evolving NZ's expectations surveys for emerging data needs[1]

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[1] This contribution was prepared for the conference. The views expressed in this publication are those of the authors and do not necessarily represent the official views of the Committee, its members, or the BIS.

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Abstract

As inflation targeting pioneers, New Zealand has conducted quarterly surveys of economic expectations for more than three-decades. Inflation expectations data remains critical returning from a high-inflation environment, but as a 'full service' central bank we have other data needs to inform our decisions. This paper presents our new broad-industry Business Expectations Survey, which creates a three-pronged approach with quarterly surveys of (i) households; (ii) businesses; and (iii) experts, such as professional forecasters. Having representative business and household surveys enables us to better meet emerging data needs, such as financial inclusion topics and payments and cash usage, using a modular design approach.

Keywords: Financial inclusion, emerging data needs, survey modules.

JEL classification: C8, E3, E5

1. Introduction

Why enhance our surveys of expectations

Inflation expectations are important for the efficient transmission of monetary policy. Explained in our *Monetary Policy Handbook (*Reserve Bank of New Zealand, 2024*),* inflation expectations affect the transmission of monetary policy because near-term inflation expectations impact actual inflation by altering households' and business' price-setting behaviour (see also Coibion et. al., 2018). When firms set prices, they either consciously or unconsciously factor in their expectations about future inflation (Armstrong and Parker, 2016). Longer-term inflation expectations can be used as an indicator of knowledge and credibility of the RBNZ inflation target. In addition, business inflation expectations are used as an input to estimate neutral interest rates in nominal terms (Castaing et. al., 2024).

Our recent review of monetary policy identified several areas where better data could improve our understanding of the economy to support high quality monetary policy decision-making. *In Retrospect: Monetary Policy in New Zealand 2017-22* (Reserve Bank of New Zealand, 2022c) – identified two relevant areas for improvement: (i) develop new sources of data for economic monitoring; and (ii) develop better measures of neutral interest rates.

Towards a three-pronged approach to surveying expectations

We are progressing towards a three-pronged, quarterly, approach to surveying expectations (Reserve Bank of New Zealand, 2024b)[1] Te Reo Māori names are stated in parenthesis [2]:

- Household expectations survey: n ~ 1,000 households (Tara-ā-Whare)
- (Expert) Survey of expectations: n ~ 40 experts (Tara-ā-Pūkenga)
- Business expectations survey: n ~ 400 businesses (Tara-ā-Umanga)

We have been running the Survey of Expectations since 1987. The original sample size was around 200 respondents, but this has declined in recent years to about 70 in 2016 and less than 40 in 2024. The Survey of Expectations panel has been carefully chosen to cover a range of professional forecasters, economists, and industry leaders, but it is not a random probability sample – this means we are not able to use probability theory to make statistically valid inferences about a wider population beyond those responding to the survey. The sample has become progressively more focused on experts, such as professional forecasters, and less on the wider economy. In recognition of this, we will reframe the Survey of Expectations as focusing on the view of experts, and our new Business expectations survey will be a broad-industry survey.

Our Household expectations survey has been conducted since 1995. Questions include inflation expectations – at different time horizons, perceptions of current inflation, and house price inflation expectations, alongside demographic questions used for survey weighting. The survey was re-developed in 2022 to improve data quality and coverage, and better align with international best

[1] See Lewis et. al (2016) for context on how we consider survey-based measures of inflation expectations alongside market-based and model-based measures. Internationally, there is burgeoning interest in the potential to use machine learning techniques to extract information about inflation expectations from real-time text data such as social media (e.g. Denes et. al, 2021).

[2] Following re-development in 2022 the Reserve Bank's Household expectations survey was renamed to Tara-ā-Whare - Household expectations survey. The word "Tara" is derived from Pakitara, or the walls, and "Whare" means a house. Tara-ā-Whare is also used to describe going to door to door, to ask questions. Accordingly, the Business expectations survey will be called Tara-ā-Umanga - Business expectations survey. For clarity, the existing Survey of Expectations will be called Tara-ā-Pūkenga – Expert Survey of expectations in recognition of the current respondents' expertise as professional forecasters, economists, and industry leaders.

practice to capture household inflation estimates (Reserve Bank of New Zealand, 2022a). We changed the inflation expectations from a binned question (with pre-defined categories) to a quantitative question (asking for a point estimate). We added additional questions regarding expectations 2-years ahead for CPI inflation, 1-year ahead earnings, and 5-years ahead for house price inflation.

Given the importance of expectations for monetary policy decisions, running our own business survey provides us with complete control and certainty regarding the survey content, timing, and quality of results. The surveys are conducted in a short field window (about 5 working days) immediately following each quarters' CPI release. This means all respondents have equal backward looking inflation information. The short field window also means the results of the latest survey are available in time for consideration by the subsequent Monetary Policy Committee (MPC) meeting, ensuring they have near real-time expectations data.

The RBNZ makes use of several valuable third-party business surveys that include relevant topics of interest. However, most of these surveys are not based on random probability sampling. Questions tend to be qualitative in nature and reported statistics are often the net balance of positive and negative responses. Expectations elicited are only short-term, at most looking one-year ahead. In addition, there is limited information on businesses' expectations for wage inflation, which is an important component of general inflation dynamics.

Emerging data needs

Beyond better understanding inflation and other macroeconomic expectations, a key motivation for our new business survey is an opportunity for the Reserve Bank to directly survey businesses to gather evidence to support any aspect of our mandates as a "full service" central bank. This will mirror our recent use of the Household expectations survey, since re-development in 2022, as a vehicle for supplementary content. Additional questions have been added regarding the chance of (i) job loss/gain, (ii) not making mortgage/rent payments, and (iii) regarding the importance of savings. A cash use module has been added to gain additional insights into payments and cash use at a higher frequency than our biennial Cash Use survey.[3]

Some known examples of potential supplementary topics for business expectations include:

- Perceptions of financial risk – to support our financial stability mandate.[4]
- Access to finance – to support *Our Approach to Financial Inclusion* (Reserve Bank of New Zealand, 2023b) and *Improving Māori Access to Capital* (Reserve Bank of New Zealand, 2022b).
- Cash and payment services – to support our *Future of money* (Reserve Bank of New Zealand, 2023a) programme.

We may also consider potential supplementary modules to provide enhanced macroeconomic data, for example on price and wage setting behaviour.

The remainder of this paper focuses on recent developments for the Business expectations survey and is structured as follows:

- Section 2 provides a summary of the proposed survey design following a public consultation and pilot survey.

[3] The household expectations survey questionnaire is available from the Reserve Bank website at: https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/statistics/surveys/tara-a-whare-household-expectations-survey.pdf

[4] The Bank of England's *Systemic Risk Survey* (described in Burls et. al 2009) provides an example of the type of questions we may consider.

- Section 3 describes key considerations for the methodological design of the survey in more detail.
- Section 4 discusses the questionnaire content: core macroeconomic expectations that will be asked every quarter; and consideration of occasional and rotating questions.
- Section 5 describes the survey testing activities – public consultation, cognitive testing, and pilot survey – in more detail, alongside an examination of the numerical results from the pilot survey.
- Section 6 concludes with a summary of the lessons learnt from our testing activities and finishes with a look ahead to the establishment of the full survey over the coming year.

2. Proposals following consultation and pilot

We tested plans to enhance our understanding of businesses' macroeconomic expectations in two main ways: public consultation in March 2024; and a pilot survey in April 2024 (Reserve Bank of New Zealand, 2024c).[5] We also conducted cognitive testing of the questionnaire prior to the pilot survey.

Following careful consideration of the feedback received, we have made several refinements to survey design decisions (Table 1). These will be incorporated into the design and subject to further testing, using a larger-sample second pilot, during July 2024. Ongoing enhancements and continuous improvements will occur throughout the life of the survey.

Table 1 – Summary of decisions following consultation and pilot

Topic	Proposal	Rationale	Impact from testing
Sample design: Industry coverage	Five industry groups: • Primary • Manufacturing • Construction • Retail trade • Other industries	Industries identified as key output strata. Minimum sample sizes will be specified for each design strata.	We decided to include primary industries (initially a candidate for omission), based on consultation feedback, and consideration of potential wider uses of the survey.
Sample design: **Size exclusions**	Exclude micro businesses with fewer than 6 employees.	Common business survey practice, given very skewed size distribution and in recognition of proportionate respondent burden.	In the pilot, small business (6-19 employees) had a lower propensity to agree to complete the survey again; and had increased sampling variability.

[5] Public consultation material including promotional video (featuring our Chief Economist and Director – Data, Statistics and Analytics) is available on the Reserve Bank website: https://www.rbnz.govt.nz/business-survey

Sample design: **Size strata**	Three size groups: • Small: 6-19 employees • Medium: 20-99 employees • Large: 100+ employees	Controls for an important business demographic.	None
Sample design: **Sample rotation**	A 9-quarter rotating panel for sampled strata (large and key businesses will be an ongoing panel).	Balances precision and operational efficiency against respondent burden and potential for panel conditioning.	Positive consultation feedback. Pilot found persuading sufficient respondents to repeatedly answer will be challenging, so proposal is subject to sufficient willing participants.
Content: Core questions	3 core questions: CPI, wage, and unemployment expectations (with multiple time horizons).	Most important topics needed for monetary policy decision making.	Additional macroeconomic expectation questions were considered but consultation feedback, and high rates of "don't know" responses for some questions in pilot, led to their omission.
Content: Occasional and rotating questions	Additional questions will be included on an occasional or rotating basis, subject to overall survey length.	Opportunity to gather better data to support any aspect of RBNZ mandate.	Positive consultation feedback.

3. Methodological design of the survey

Target population (industry and size exclusions)

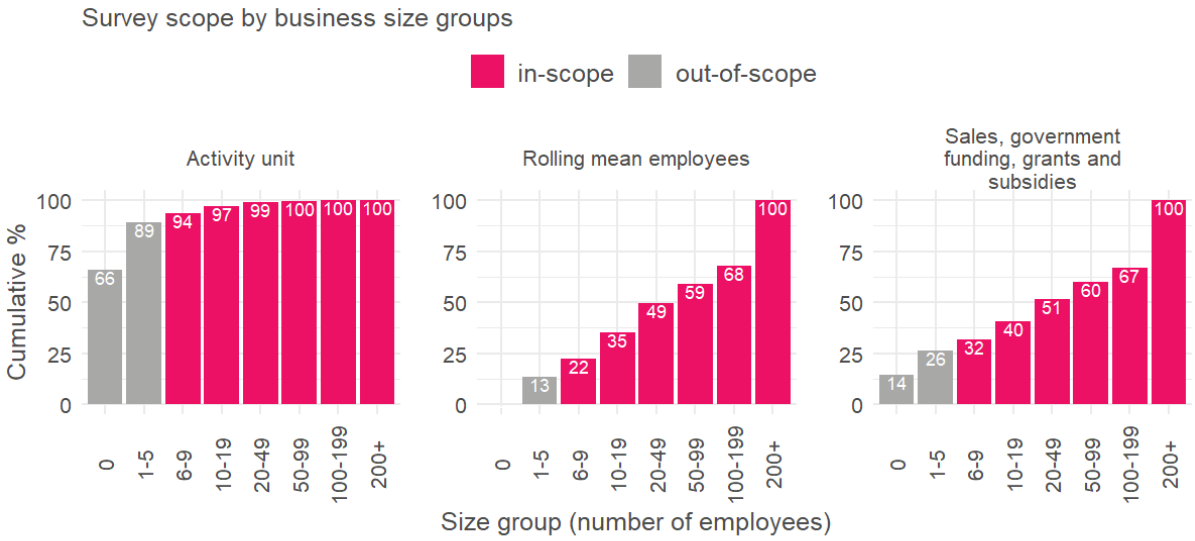
The target population for the survey will be all businesses operating in New Zealand with 6 or more employees. We use the term 'business' broadly, as a convenient label. A more accurate term would be 'establishments' as we have chosen to also include central and local government and non-profit institutions within the scope of the survey. The rationale for size exclusions is outlined in the following sections.

Lower size cut-off

Given the very skewed size distribution of businesses (Figure 1) and in recognition of proportionate respondent burden, we propose to exclude business with fewer than 6 employees. This criterion aligns the size criterion used for similar New Zealand business surveys: Stats NZ's Business

Operations Survey, which has included price and wage setting modules in 2010 and 2022, and Surveys of New Zealand business expectations run by scholars (Kumar, 2015; Coibion et al. 2018; Kumar and Wesselbaum, 2024). Internationally, it is common practice to exclude very small businesses from business surveys (Smith, 2013).

Figure 1: Business size exclusions



Source: Stats NZ, Annual enterprise survey 2022

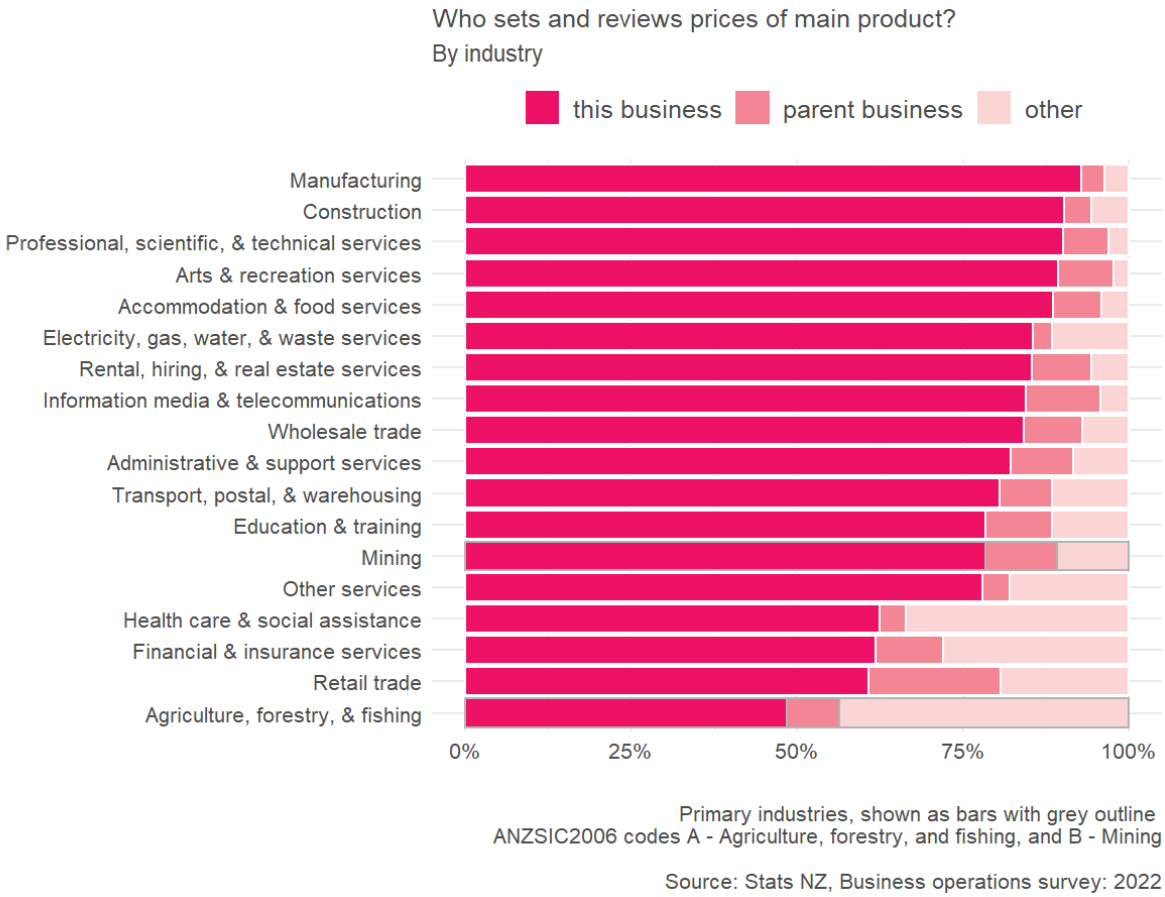
Consideration of industrial coverage

To use the sample most effectively consideration was given to industrial coverage. Several leading surveys of business expectations exclude primary industries. Examples can be found in the UK, US, and Italy.[6] We initially proposed exclusion of primary industries (ANZSIC06 codes A – Agriculture, forestry, and fishing; and B – Mining). Agriculture, forestry & fishing industry has the lowest proportion of businesses responsible for setting their own prices, for their main product, according to the Stats NZ Business Operations Survey 2022 (Figure 2).

However, a demerit to excluding primary industries is that the survey will be unable to report any statistical information about these industries. Primary industries' share of the New Zealand economy is about 12% of businesses by activity unit, 8% of sales, and 6% of employees. On balance, we decided to include primary industries (initially a candidate for omission), based on consultation feedback, and consideration of potential wider uses of the survey (beyond monetary policy).

[6] UK: Bank of England Decision Maker Panel (Bloom et al., 2017); US: Cleveland Fed Survey of Firms Inflation Expectations (Federal Reserve Bank of Cleveland, 2024), and Atlanta Fed Business Inflation expectations (Federal Reserve Bank of Atlanta, 2024); Italy: Banca d'Italia Survey on Inflation and Growth Expectations (Banca D'Italia, 2024).

Figure 2: Proportion of businesses responsible for setting their own prices



Sampling Frame – Stats NZ's Statistical Business Register

A fundamental aspect of conducting a representative sample survey is the sampling frame. That is, a list of units in the target population from which a randomised probability sample can be drawn.

Stats NZ's (New Zealand's National Statistical Institute) Statistical Business Register has been assessed as the most suitable for this survey. Critical considerations include:

- comprehensive coverage of businesses, regularly maintained and updated.
- known business structure – we will survey at the "Kind-of-activity unit" level.
- 'auxiliary' variables that indicate the industry and size of business (number of employees)

Stratification

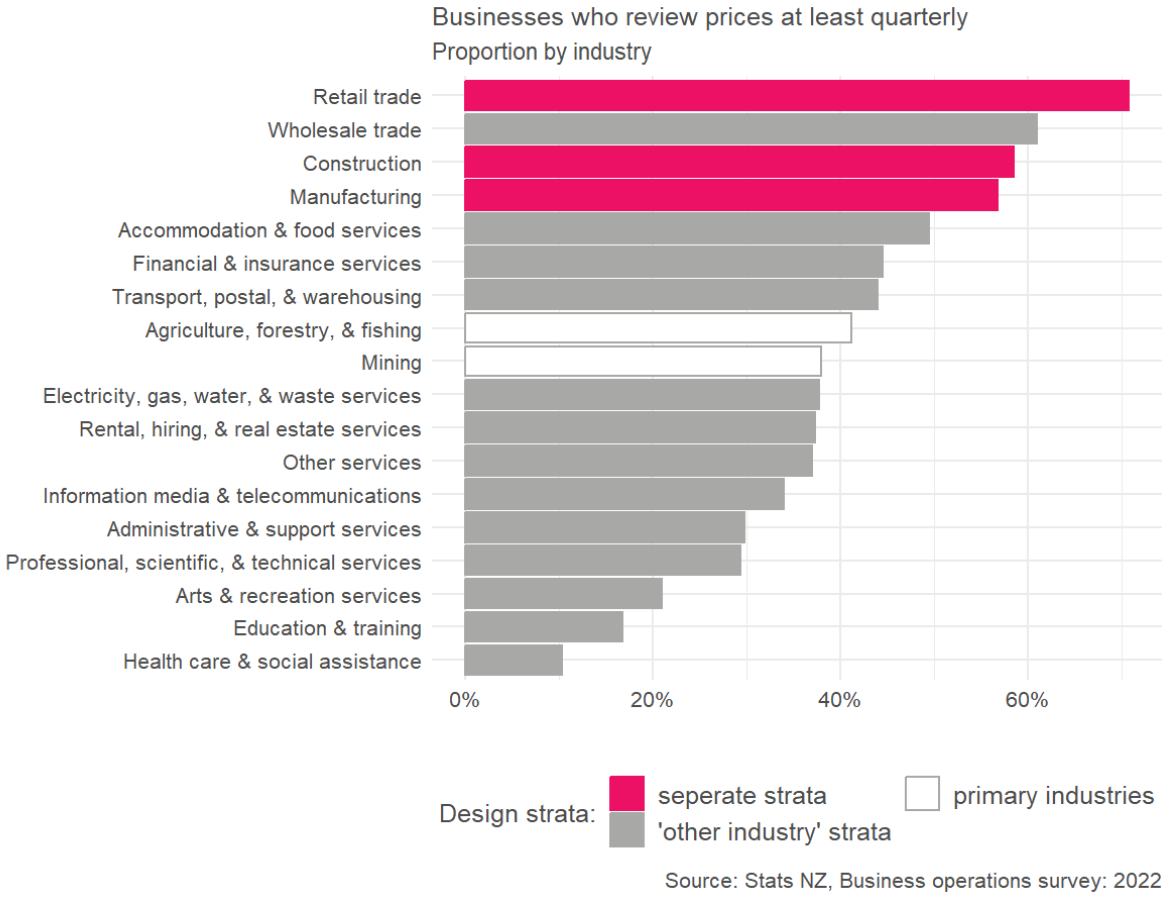
The sample design for business surveys almost universally includes stratification where businesses are partitioned into non-overlapping stratum according to one or more characteristics. Sample selection is independent in each stratum. This technique not only improves the efficiency of the sample design (greater precision for the same sample size), but also allows us to guarantee coverage, and set minimum sample sizes, for domains of particular interest, such as industry groups.

Size strata

Stratification by size is important since a small number of large businesses have a disproportionate impact on the whole economy (Figure 1). Analysis of a 2013 New Zealand survey found business size

(employment) was a significant predictor of inflation expectations (Coibion, et al. 2020). We chose three employment size strata (6-19, 20-99, and 100+ employees).

Figure 3: Frequency of price changes



Industry strata

There are 19 top-level industries in the Australia New Zealand Standard Industrial Classification 2006 (ANZSIC06). Given the proposed sample size it will be necessary to group these industries for stratification to ensure sufficient sample size can be allocated to each stratum. A key consideration is the frequency of price changes (Figure 3), and consideration of industries identified as key output strata. The following industry groups are proposed as design strata: Primary; Manufacturing; Construction; Retail trade; Other industries. Table 2 shows the population number of businesses operating in New Zealand in each of the proposed design strata (as well as those omitted due to the lower size cut-off).

Table 2: Proposed Design Strata: Population sizes

Industries By **Size**	**Primary**	**Manufacturing**	**Construction**	**Retail Trade**	**Other industries**
Large (100+ employees)	81	327	132	336	1,293

Medium (20-99 employees)	777	1,593	1,071	987	7,530
Small (6-19 employees)	3,468	3,885	6,567	4,086	24,381
Very small [not sampled] (fewer than 6 employees)	*60,744*	*16,560*	*67,437*	23,547	*300,978*

Source: Stats NZ, Annual Enterprise Survey 2022.

Rotating panel design

Tara-ā-Umanga Business Expectations Survey will be an ongoing quarterly survey. There will need to be a process to ensure that the sample is regularly updated to account for business births and deaths.

Additionally, it is proposed to use a rotating panel design where a small proportion of the sample is rotated in, and out, each quarter. This aims to strike a balance between a full panel and full reselection each quarter. Table 3 provides a summary of design choices.

Table 3: Summary of reselection alternatives (panel or periodic reselection)

Approach	Merits	Demerits
Panel design (same respondents over time)	Increases precision of estimates of change over time Aids longitudinal analysis of respondent-level changes	Concentrates respondent burden Risk of panel conditioning
Complete reselection each quarter	Spreads respondent burden No panel conditioning	Additional costs and complexity to recruit new respondents Increased sample volatility for estimates of change

Options analysis

Many business surveys use a rotating panel design (Steel and McLaren, 2008). The OECD report that almost all business opinion surveys, of which expectations surveys are a special case, are of a panel design (OECD, 2013). Several leading surveys of business expectations are panel designs.[7]

The main consideration is to appropriately balance respondent burden, against statistical precision of estimates of change. Panel surveys offer the greatest precision but necessitate the highest concentration of respondent burden in selected businesses. Additional considerations include risk of panel conditioning, where respondents change reporting behaviour in response to the survey (e.g.

[7] Examples can be found in the UK, US, and Italy – see surveys listed in footnote 6.

through greater economic awareness raised by participation); the added costs and complexity to recruit new survey respondents; and longitudinal analysis, which looks at changes over time for the same businesses, facilitated only by a panel survey design (Sharot, 1991).

Respondent burden

Overall 'respondent burden' (cost and effort required by survey respondents) will be broadly the same regardless of rotation options, as the sample size will be unchanged. However, in a panel survey the respondent burden is concentrated in the same businesses over time. Periodic reselection, or rotation, spreads the respondent burden across more businesses. This may provide a fairer distribution of burden (Haraldsen, et. al. 2013).

Precision of estimates

Estimates from a sample survey have a level of uncertainty due to the fact a sample has been used rather than a census. This uncertainty is known as the 'sampling error' or 'variance'. The variance of change (or difference) between two time periods, t_1 and t_2 is $\text{var}(t_2 - t_1) = \text{var}(t_1) + \text{var}(t_2) - 2\text{cov}(t_2, t_1)$, which means that the variance of change can be made smaller if we can increase the covariance between the estimates at the two time periods. This can be achieved by including the same businesses in the sample at the two time periods (Smith, 2013). The greater the overlap in samples between time periods, the smaller the variance of estimates of change (the higher the precision). With no overlap in sample, the statistical variance of estimates of change will be about twice the point-in-time variance.

Longitudinal analysis

It may be useful to analyse respondent-level changes over time. For example, the proportion of businesses changing expectations from period to period, as an indicator of the stickiness of expectations. This type of analysis can only be undertaken for businesses repeatedly sampled.

Panel conditioning

Panel conditioning occurs when participation in previous survey rounds affects how respondents answer questions in later rounds. In business surveys the information on panel conditioning is very sparse (Ptáčková and Smith, 2021). Binder (2019) found evidence of panel conditioning in the Federal Reserve Bank of New York Survey of Consumer Expectations. However, Altig et al. (2020) found no statistically significant evidence of panel conditioning in the Survey of Business Uncertainty.

Costs to recruit new respondents

There may be additional costs required to entice new respondents to participate in the survey, compared with ongoing respondents who are familiar with the survey. For example, greater non-response follow up may be required, or additional effort needed to obtain contact information for the most appropriate person within a business to respond.

Feedback and testing

Consultation feedback supported our rotating panel design. However, it is noted that in the pilot survey only 30 businesses from the original selection of 501 were willing to be recontacted to complete the survey again next quarter. This small proportion (about 6%) may lead us to revisit panel rotation options. Particularly if our content reduction, aiming to improve respondent experience, doesn't materially increase the size of the ongoing responding panel.

4. Questionnaire content

Core questions

We originally proposed six core questions for inclusion every quarter covering business expectations of: prices, wages, growth, unemployment, Official Cash Rate, and exchange rates. This was reduced to three core questions following testing activities (Table 4). Each question allows a numerical response to be entered and includes a response option of "no opinion".

Table 4: Core questions (proposed and retained)

Topic	Question	Time horizons	Retained following testing
Prices	What **annual percentage % change** do you expect in the Consumers Price Index (CPI) for the:	One-year ahead Two-years ahead Five-years ahead Ten-years ahead	Yes
Wages	What annual percentage % change do you expect for **average hourly wage rates** for the private sector for the:	One-year ahead Two-years ahead	Yes
Growth	What annual percentage % change do you expect for real **economic growth (GDP)** for the:	One-year ahead Two-years ahead	No
Unemployment	What **unemployment rate** do you expect in:	One-year ahead Two-years ahead	Yes
OCR	What **Official Cash Rate (OCR)** do you expect at the end of:	Current quarter One-year ahead Ten-years ahead	No
Exchange rate	Relative to the US Dollar, what **spot exchange rate** do you expect for the NZ Dollar at the end of:	Six-months ahead One-year ahead	No

Given the feedback received during the public consultation and associated expert meetings, alongside the low proportion of respondents able to provide a numerical answer (Figure 5), we decided to remove the following macroeconomic expectation questions from the questionnaire: GDP growth; OCR; exchange rate (and associated exporter question).

The rationale is to focus on a good respondent experience to maximise response rates, including willingness to be recontacted next quarter. We found a strong relationship between respondents who gave numerical answers to most questions and were willing to participate again next quarter.

We are also cognisant that the average completion time for the pilot survey was 9 minutes (median: 6 minutes). Omitting some of the less important macroeconomic expectation questions will allow questionnaire time for the proposed supplementary topic questions in future surveys. It should be noted that we will continue to ask questions regarding GDP, OCR, and exchange rate expectations to professional forecasters in our Expert Survey of Expectations, to aid in forecast comparison.

Cognitive testing of core questions

The questions were cognitively tested, prior to our April 2024 pilot survey. Cognitive testing involves randomly subsampling and recruiting a small number of respondents to complete a simulated survey, where participants are additionally interviewed to gain insight into their understanding and responses to the survey questions. The feedback obtained can be used to make any necessary adjustments to ensure the effectiveness and clarity of survey questions.

A total of 10 businesses completed the cognitive testing process, representing a range of industries and businesses employment-sizes. We made several changes to questionnaire wording and introductory text based on cognitive testing. For example, respondents were asked if they would have found the term "earnings" easier to understand than "wages". Respondents considered the term "wages" appropriate and preferable to "earnings".

Cognitive testing identified that many respondents struggled to provide expectations 5- and 10-years ahead. Comments on this point included: *"With the current economic uncertainty, I wouldn't even know where the donkey will be, let alone pin a tail on it!"*; *"I'm an economist, not a fortune teller!"*; *"Get out my crystal ball!"*.

Occasional and rotating questions

Beyond better understanding inflation and other macroeconomic expectations, a key motivation for expanding the Survey of Expectations panel with an economy wide business survey, Tara-ā-Umanga, is an opportunity for the Reserve Bank to directly survey businesses to gather evidence to support any aspect of our mandate.

Principles for inclusion of supplementary content

The process to select and test questions for addition will need to be carefully managed to ensure the additional questions are not detrimental to the quality of the core questions. For example, if too many questions, or those which are badly designed, are added this may affect overall response rates through respondent fatigue or a poor respondent experience.

The number of potential questions may require rationing or phasing of the questions over time. We will likely need some form of application and decision-making process to effectively manage the allocation of survey time for supplementary questions.

Criteria for inclusion

Criteria for prioritisation of content may include the extent to which proposed questions would:

- Add significantly to the Reserve Bank's knowledge base – for example, if there is currently little or no existing evidence, or there is a strong case for updated or enhanced data.
- Address a key policy issue – the urgency of the requirement may also impact scheduling the question for inclusion.

Key practical and ethical considerations may include:

- Feasibility of proposed question(s). Are research questions well-formed, with strong and coherent concepts? Are most respondents likely to:
    - Understand the concept and question?
    - Know or can recall the answer?
    - Be generally willing to answer?
- Consideration of sample size – e.g. not likely to be so rare in the population that unreliable results would be obtained.
- Consideration of respondent burden (e.g. cognitive effort, privacy, or sensitivity of data).
- Consideration of alternative data sources (e.g. administrative data, external data sources) – clear rationale of why these alternatives don't meet requirements.
- Planned analysis – how will the data be used?
- What is the desired frequency of collection? Annual data collection may be sufficient for many purposes. For example, where responses are likely to change infrequently overtime, or the data will be used infrequently for decision-making.

Question frequency

The proposed 9-quarter rotating panel design means that there is an opportunity to ask many questions less often than quarterly, where there is not a demonstrable need for high-frequency data. Such an approach will allow more questions to be asked per year for a given survey length.
It is likely that there will be three categories of frequency:

- Core questions – asked every quarter.
- Rotating questions – asked once per year, or once every 6 months.
- Occasional and ad hoc questions – asked less frequently or as a one-off.

5. Testing initiatives

Public consultation (March 2024)

We ran a public consultation on the proposed survey design and content during the period 11 – 28 March 2024. The consultation was promoted to our statistics users. This included an email to subscribers and using social media which included a video message. We received eight useable submissions. Submitters' organisational affiliations included financial and non-financial corporations, a government ministry, independent economists, and personal views of individuals.

We also had four discussion meetings with experts who have experience with similar New Zealand business surveys. We received many comments supporting our overall proposals, including the use of stratification, the rotating panel design, and approach to occasional and rotating questions.

The main views expressed that challenged our existing thinking were:

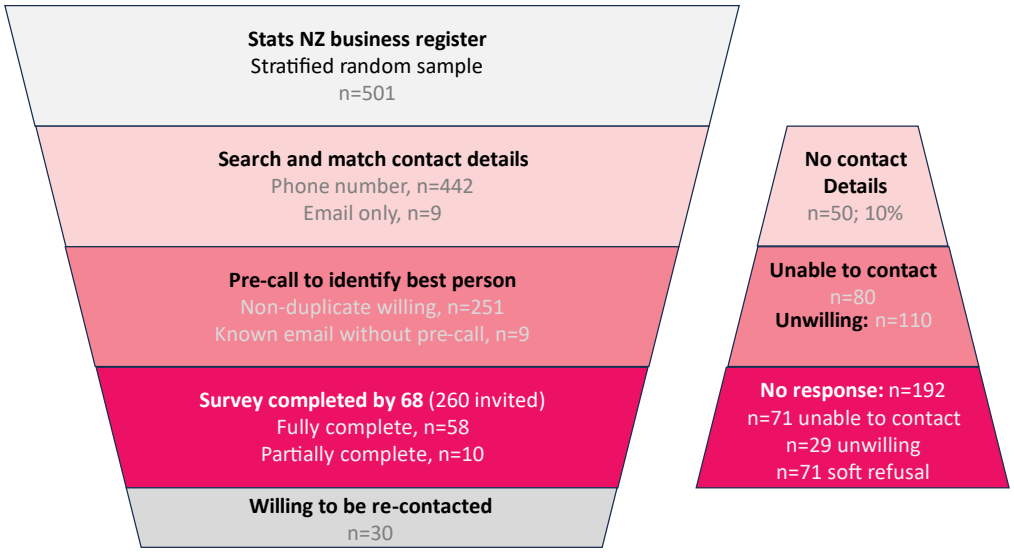
- Several submissions disagreed with our proposed exclusion of micro businesses with fewer than 6 employees and/or the exclusion of primary industries.
- There was broad agreement with the overall approach to stratification, but some suggested a more granular industrial breakdown.
- Several submissions noted a concern that businesses may struggle to answer questions about expectations for macroeconomic statistics. They may be better able to answer questions regarding their own experiences or intentions, or perhaps relating to their industry rather than the whole economy.

There were no themes where all submitters disagreed with our proposals. We considered all feedback received alongside the results of our pilot survey.

Pilot survey (April 2024)

A pilot survey, conducted during April 2024, was designed to allow us to test new procedures in a controlled way before expanding to the final sample design. We drew a stratified probability sample from Stats NZ's statistical business register of 501 businesses. The sample was passed to our survey provider, Research NZ, who completed a process to search for publicly available telephone numbers and email addresses. Contact details could be found for 90% of the selected sample (Figure 4).

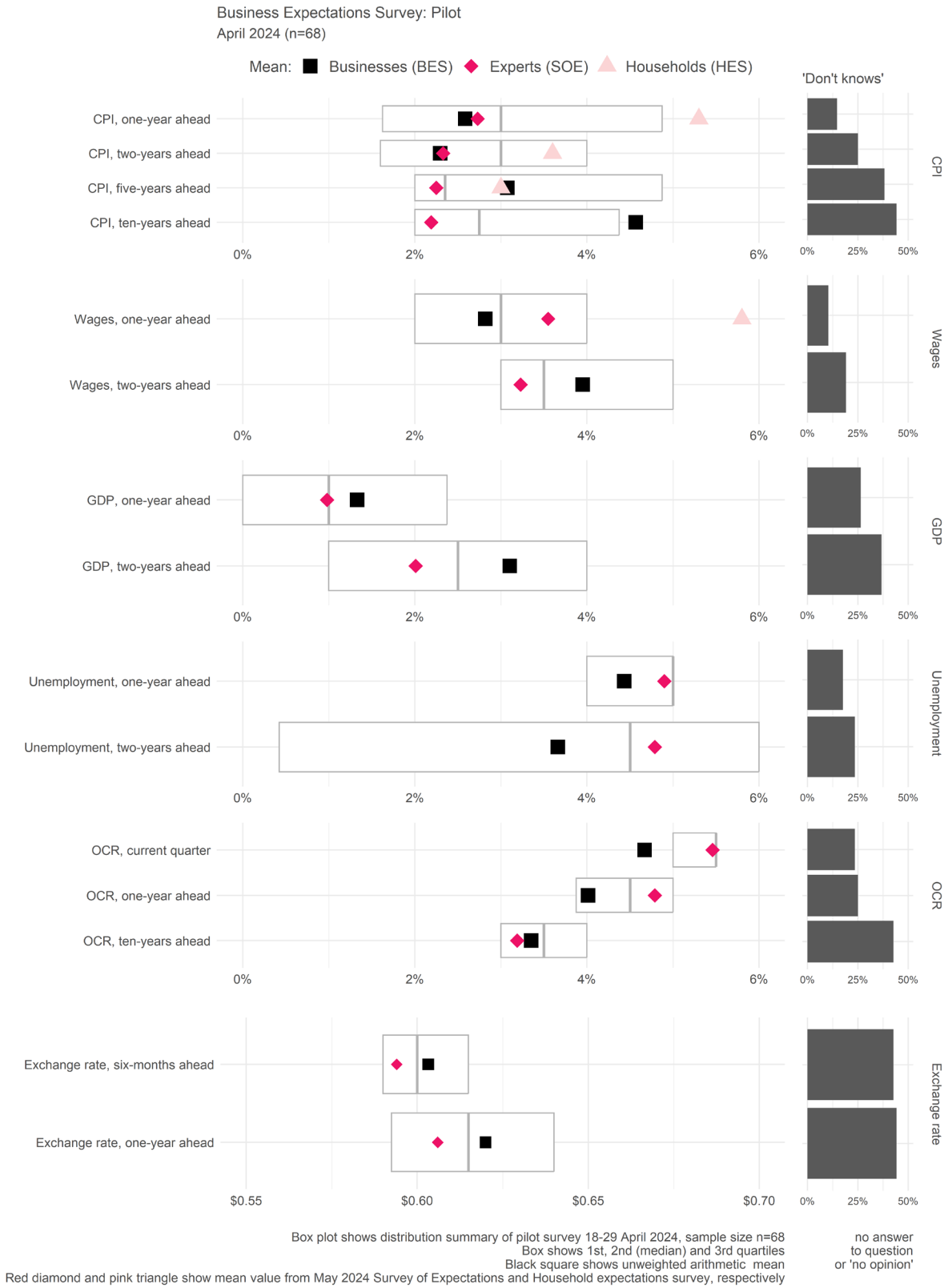
Figure 4 – Sample sizes by stage: from selected to responding.



Each business was contacted ahead of the survey proper ('pre-called') to recruit into the survey and sought to establish willingness to participate from the most suitable person. Email invitations were sent to 260 businesses to participate in the pilot survey. The survey was completed by 68 businesses, an overall response rate of 14%. About half of respondents (30 businesses) were willing to participate again next quarter.

Analysis of the data found a sizeable proportion of respondents did not provide a numerical answer to some of the questions. This was a combination of respondents not completing the survey (10 businesses did not finish) and selecting the 'no opinion' option for a question (Figure 5).

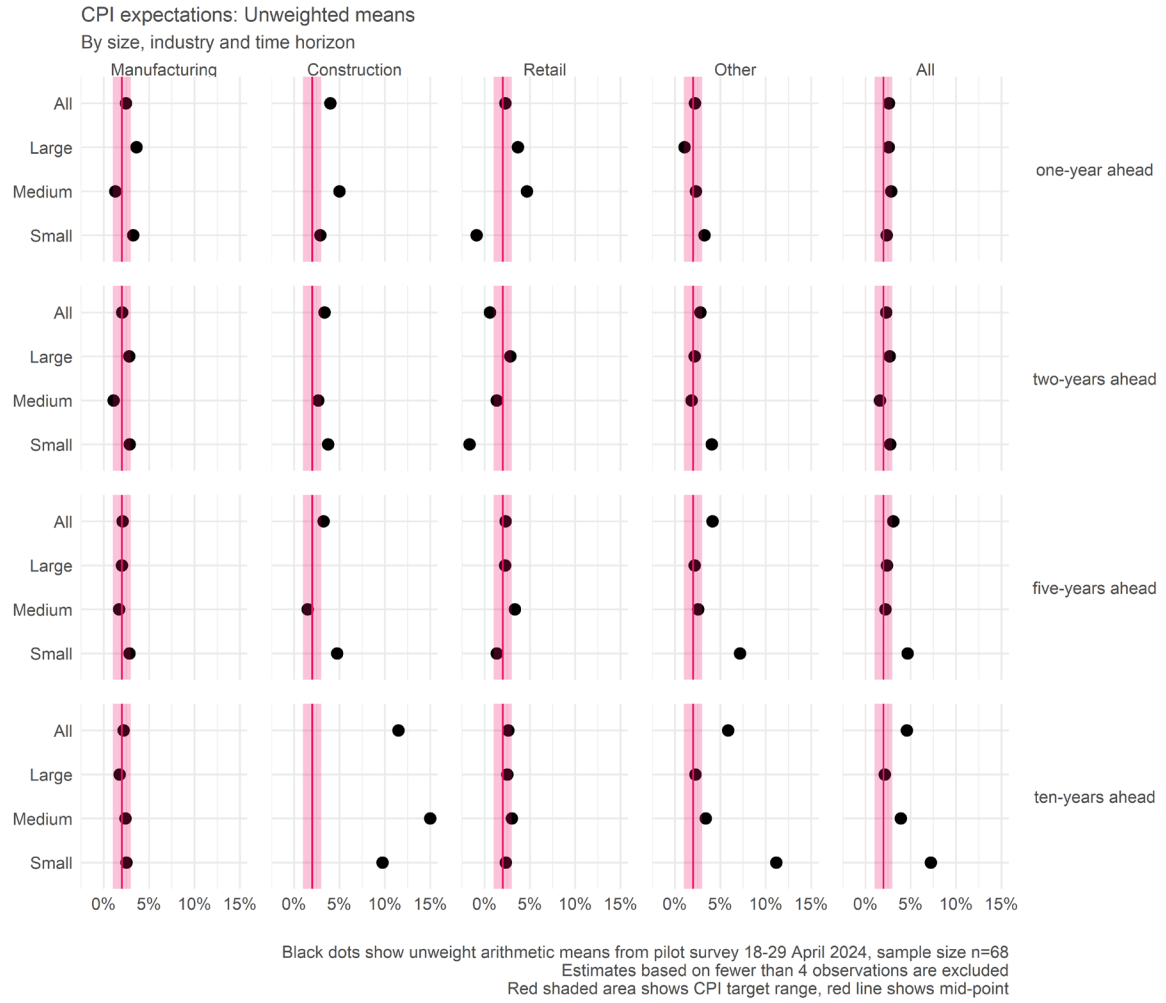
Figure 5 – Pilot survey: analysis by question



CPI expectations reveal new industry insights

The highest priority information need from the survey is inflation expectations. For one- and two- year ahead time horizons, unweighted mean expectations from the pilot survey are similar to the existing Survey of Expectations (covering experts). Mean five-years ahead expectations (3.1%) are closer to the expectations of households than experts. Ten-year ahead expectations (4.6%) are outside the CPI target band of 1% to 3%. Median expectations are within the band. Shown in Figure 6, the longer horizon mean estimates are influenced by higher expectations in the Construction and Other industries.

Figure 6 – CPI expectations by size, industry, and time horizon



6. Concluding remarks

Our investment in an industry-wide survey will create a representative business survey that will give us data on short, medium, and long-term inflation, employment, and wage expectations. The survey timeframe is specifically designed to synchronise with the Reserve Bank's Monetary Policy Committee meeting cycles, ensuring the committee has near real-time expectations data. The survey will also support decision-making across many aspects of our mandate, beyond monetary policy.

We listened to feedback and learnt lessons from our pilot and cognitive testing activities. These led to the following changes to the survey design:

- We will make the survey shorter and quicker for businesses to fill in.
- Core survey questions will focus on inflation expectations, wages, and unemployment. We will remove questions on GDP, OCR, and the exchange rate – this will better enable supplementary questions to inform decisions across our mandates, without over-burdening respondents.
- We will survey businesses in the primary industries.
- We will not include very small businesses (those with fewer than 6 employees). This is to reduce the burden on this group. We also note that small businesses had highly variable responses and few were willing to take part again.

To build on the success of the first pilot we are conducting a second pilot during July 2024, with a selected sample size of about 2,000 businesses – a four-fold increase on the first pilot sample size. The intention is to continue building the sample size over subsequent quarters to a target cross-sectional responding (achieved) sample size of over 400 businesses each quarter. We anticipate the full survey will be established over the coming year.

Appendix A – Pilot survey: analysis by question

Table A1 shows pilot survey estimates compared with published estimates for the same time period (as shown in Figure 5).

Table A1 – Pilot survey summary statistics compared with existing surveys

Statistic	Horizon (ahead)	Mean	First quartile	Median	Third quartile	Don't knows	Mean SOE	Mean HES
CPI	one-year	2.6 %	1.6 %	3 %	4.9 %	14.7 %	2.7 %	5.3 %
CPI	two-years	2.3 %	1.6 %	3 %	4 %	25 %	2.3 %	3.6 %
CPI	five-years	3.1 %	2 %	2.4 %	4.9 %	38.2 %	2.2 %	3 %
CPI	ten-years	4.6 %	2 %	2.8 %	4.4 %	44.1 %	2.2 %	
Wages	one-year	2.8 %	2 %	3 %	4 %	10.3 %	3.5 %	5.8 %
Wages	two-years	3.9 %	3 %	3.5 %	5 %	19.1 %	3.2 %	
GDP	one-year	1.3 %	0 %	1 %	2.4 %	26.5 %	1 %	
GDP	two-years	3.1 %	1 %	2.5 %	4 %	36.8 %	2 %	
Unemployment	one-year	4.4 %	4 %	5 %	5 %	17.6 %	4.9 %	
Unemployment	two-years	3.7 %	0.4 %	4.5 %	6 %	23.5 %	4.8 %	
OCR	current quarter	4.7 %	5 %	5.5 %	5.5 %	23.5 %	5.5 %	
OCR	one-year	4 %	3.9 %	4.5 %	5 %	25 %	4.8 %	
OCR	ten-years	3.4 %	3 %	3.5 %	4 %	42.6 %	3.2 %	
Exchange rate	six-months ahead	$0.60	$0.59	$0.60	$0.62	42.6 %	$0.59	
Exchange rate	one-year ahead	$0.62	$0.59	$0.62	$0.64	44.1 %	$0.61	

Note: "Mean" is the unweighted arithmetic mean from the pilot survey 18-29 April, sample size n=68; quartiles and "don't knows" are also from the pilot survey, the latter shows the proportion of respondents who did not answer or who answered "no opinion"; "Mean SOE" and "Mean HES" are the published means from the Survey of expectations (M14) and Household expectations survey (H1/H2), respectively.

Appendix B – Pilot survey unweighted CPI expectations

Table A2 shows pilot survey estimates for CPI inflation expectations by size, industry, and time horizon (as shown in Figure 6).

Table A2 – CPI expectations by size, industry, and time horizon (annual percent change)

Size	Horizon	Manufacturing	Construction	Retail	Other	All
All	one-year ahead	2.4	4	2.3	2.2	2.6
Large	one-year ahead	3.6		3.7	1.1	2.6
Medium	one-year ahead	1.3	5	4.7	2.3	2.8
Small	one-year ahead	3.2	2.9	-0.9	3.2	2.4
All	two-years ahead	2	3.4	0.6	2.8	2.3
Large	two-years ahead	2.8		2.9	2.2	2.7
Medium	two-years ahead	1.1	2.7	1.3	1.8	1.6
Small	two-years ahead	2.9	3.8	-1.7	4.1	2.7
All	five-years ahead	2.1	3.2	2.3	4.1	3.1
Large	five-years ahead	2		2.2	2.2	2.4
Medium	five-years ahead	1.7	1.5	3.3	2.6	2.2
Small	five-years ahead	2.8	4.8	1.3	7.2	4.6
All	ten-years ahead	2.2	11.5	2.6	5.9	4.6
Large	ten-years ahead	1.8		2.5	2.2	2.1
Medium	ten-years ahead	2.4	15	3	3.4	3.9
Small	ten-years ahead	2.5	9.8	2.3	11.2	7.2

Note: Unweighted arithmetic means from pilot survey 18-29 April 2024, sample size n=68. Estimates based on fewer than 4 observations are excluded.

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Reserve Bank of New Zealand
Te Pūtea Matua

Evolving New Zealand's expectations surveys for emerging data needs

IFC Biennial Conference, Basel, 22-23 August 2024

Matt Haigh, *Director – Data, Statistics & Analytics*

Why another survey…?

- **Measurement of *inflation expectations* for monetary policy**
- **Emerging data needs as a full-service central bank**
  - Cash and payment services
  - Access to finance
  - Perceptions of financial risk
  - Price and wage setting behaviour
- **What about other data sources…?**

Three-pronged survey approach

Tara-ā-Whare Household expectations survey

n~1,000 households

Tara-ā-Pūkenga Expert Survey of expectations

n~30-50 experts

Tara-ā-Umanga Business expectations survey

n~400 businesses

Public consultation

Engagement

Watch Chief Economist, Paul Conway, explain the importance of the survey

Transparency

Tara-ā-Umanga Business Expectations Survey

Read our report outlining the lessons learnt from the recent consultation and pilot survey.

READ THE REPORT →

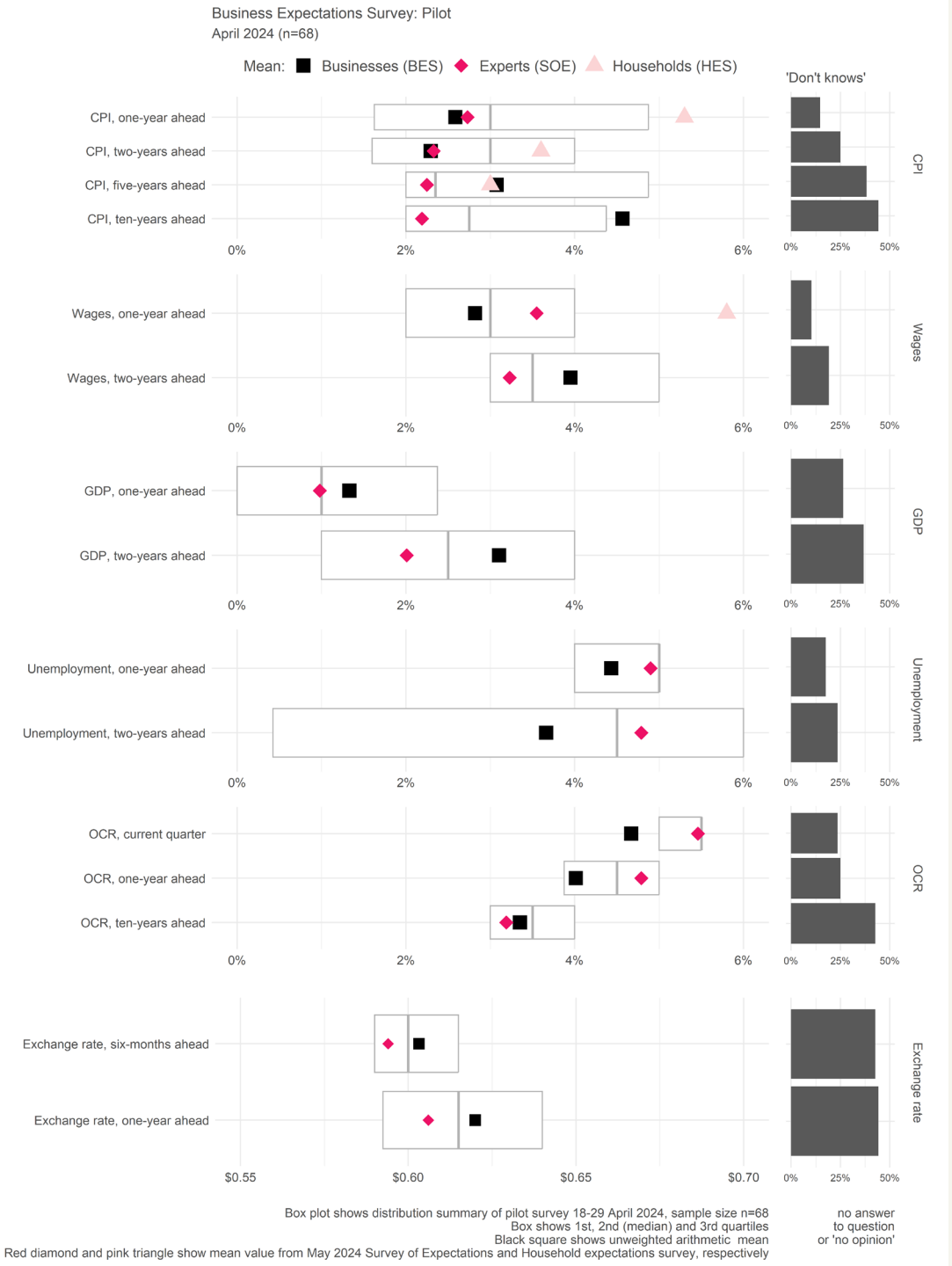
rbnz.govt.nz/business-survey

First pilot results

- **High rates of ‘don’t knows’** for:
  - Longer time horizons
  - Exchange rate
  - GDP
  - Official Cash Rate (OCR)

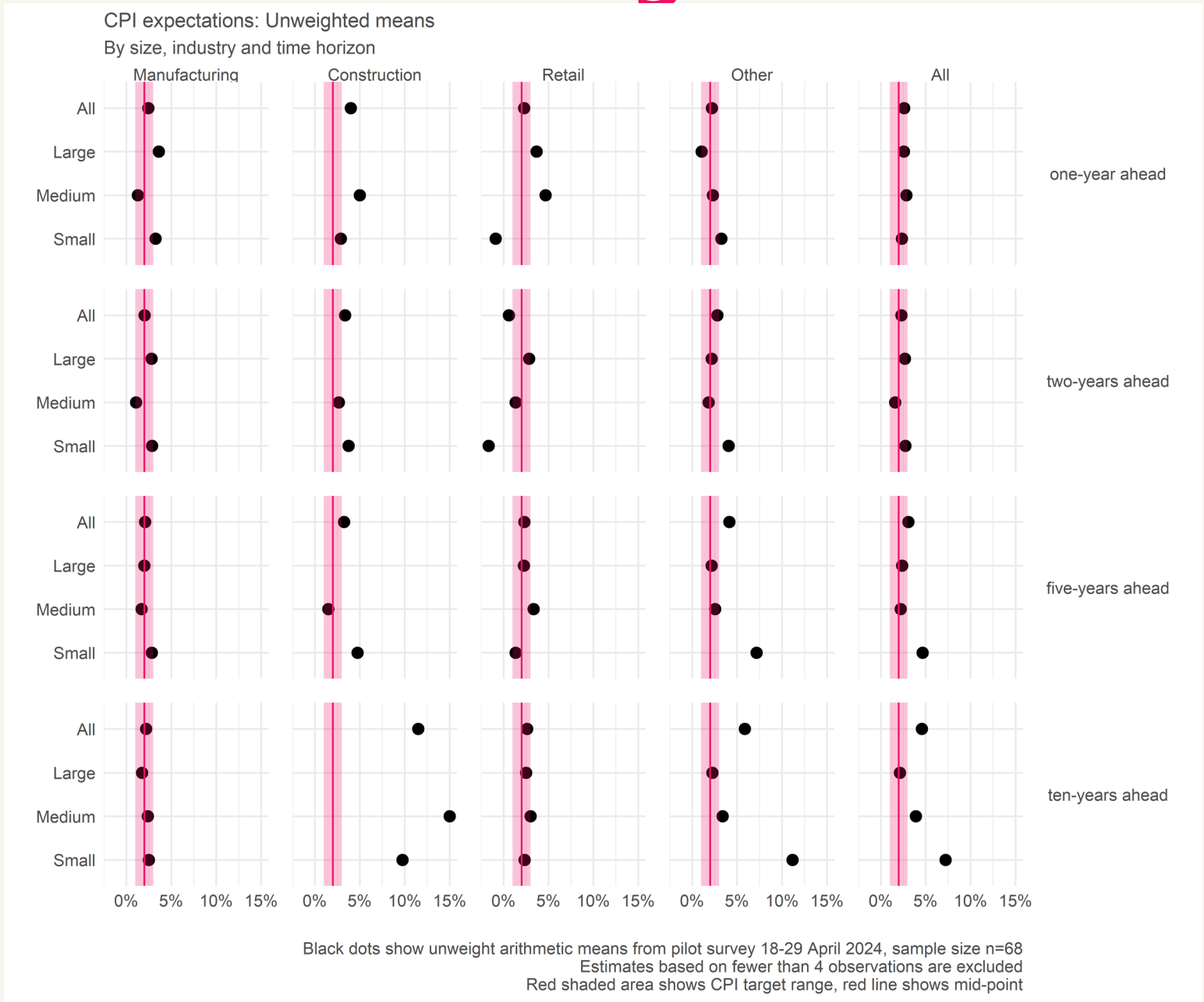
- **Shorter-term CPI results broadly comparable** with existing expert survey

- Decision to **drop 3 core topics** to allow for supplementary topics on emerging needs



CPI expectations: New insights

Statistics by **business size** and **industry** will now be possible



Key design features

- **New representative business survey**
  - Stratified by 5 industry groups by 3 employment size bands
- **3 core questions**, up to 4 time-horizons (down from original 6)
- **Occasional and rotating questions** to be developed to meet emerging data needs across our mandate
- **Rotating panel design** to balance precision and efficiency against burden and conditioning
- **Second pilot** survey in July 2024 (achieved sample size n=251)

To be continued…

Keep in touch

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