


# International Growth Fund (IGF) Evaluation

## Causal Impact Analysis

*Final Report*

**Prepared for: Ministry of Business, Innovation and Employment (MBIE)**

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# Executive Summary

Motu Economic and Public Policy Research were engaged by the Ministry of Business, Innovation and Employment (MBIE) to examine the impacts of International Growth Fund (IGF) Expansion grants. Focusing on recipients of Expansion grants that were closed or closing by 30 June 2024, we were asked to consider two questions:

- *Impact:* Have IGF Expansion grants been successful in increasing international activity and performance outcomes of recipient firms?
- *Value:* What is the return on investment from IGF Expansion grants?

Using firm-level data and quasi-experimental methods, we estimate impacts relative to a counterfactual (what would have happened in the absence of support). We find evidence of strong positive effects on internationalisation and broader performance outcomes, indicating substantial returns to public investment.

### *Programme overview*

The IGF was established in 2009 as a co-funding mechanism to support firms to enter or accelerate growth in new markets. It is New Zealand Trade and Enterprise's (NZTE's) largest intervention to support individual export firms. From inception to the end of 2025, $443.3m in public funding (nominal terms) has been provided to firms through the IGF.

Most funding is channelled through Expansion grants, which have accounted for around two-thirds of IGF funding in recent years. The IGF also offers two smaller grant funds for specific purposes: Validation grants (introduced in 2015) and Springboard grants (introduced in 2020). IGF grants are only available to firms in NZTE's Focus segment – a group of export firms that receive a broad suite of tailored support services from NZTE.

### *Our approach*

To assess whether observed changes in outcomes are attributable to Expansion support or would have occurred without support, we control for characteristics that affect the outcomes of supported and unsupported firms, and the likelihood of receiving support. We allow for treatment status and outcomes to depend on a range of factors, including industry, firm size and growth, and prior export behaviour. We also allow patterns to vary over time. In technical terms, we use inverse propensity-weighted treatment effect estimation with regression adjustment – a well-established 'doubly-robust' estimation approach. The analysis is made possible by confidentialised datasets collated by NZTE, which we link with other administrative and survey datasets in Statistics New Zealand's Longitudinal Business Database (LBD).

The estimated impacts are large relative to international export promotion evidence, likely reflecting the targeting of Expansion co-funding to firms with the greatest potential to expand internationally. Nonetheless, factors that we could not fully observe or incorporate may lead to some overstatement of the true average effect. This could occur if, for example, the exclusion of some grants from the dataset provided omitted a disproportionate share of projects that were ineffective or terminated prematurely. These considerations highlight uncertainty around the magnitude of the estimated effects, reflecting data limitations and sampling variation, but are unlikely to alter the overall conclusion of strong positive impacts.

### *Strong positive effects of Expansion support on firm-level outcomes*

We find that Expansion grants generated increases in export sales that would not have occurred in the absence of support. Average treatment effects, ranging from 0.18 to 0.65, are statistically significant across years 0 to 6 following support. Relative to the counterfactual of no Expansion support, the estimated treatment effects equate to increases in export sales of 19% to 92% above pre-treatment levels. Annual export sales were raised by Expansion support by an average of $11.1m (in real terms) per supported firm per year. The largest aggregate annual increases occurred four, five and six years after firms were first supported.

We also find positive changes in gross value added (GVA), which are statistically significant in years 0 to 4 after initial support. GVA captures the difference between the value of sales and the cost of intermediate inputs. GVA treatment effects range from 0.13 to 0.34, equating to increases of 14-40%. Across the analysis window, GVA was raised by Expansion support by an average of $2.7m (real terms) per supported firm per year. The largest aggregate increases occur four to six years after support. Due to trade-offs in specifying a functional form for value added, the estimates are based on firms with positive pre- and post-support GVA, which is reflective of most, but not all, supported firms.

There is also evidence that Expansion support caused positive changes in other internationalisation and firm performance outcomes. Specifically, we find positive changes in export sales of goods, total sales, employment and wages that would not have occurred in the absence of support. Evidence on export intensity is more mixed, with some indication of increases following support. Effects on multifactor productivity are uncertain, with some evidence suggesting a negative effect that is imprecisely estimated.

### *Impacts vary across firms and over time*

Positive average changes are particularly evident among firms first supported in more recent years (2017–2022), firms in goods-producing industries, and small firms. Despite strong average changes in small firms, larger firms account for a disproportionate share of aggregate impacts. There is no evidence that the estimated effects are materially influenced by whether firms previously received Validation support.

### *Positive effects translate to substantial returns for supported firms*

Expansion grants have generated large increases in firm-level economic activity relative to government costs. In present value terms (2025 dollars, discount rate: 8%), Expansion support is estimated to have generated $49.1b in export sales and $12.3b in value added, compared with total government costs of $737.4m. Each dollar of public support is associated with approximately $16.6 in additional value added among supported firms. Value added provides an indication of additional economic contribution within the New Zealand economy after accounting for intermediate inputs. Export sales provide a complementary measure of the scale of commercial activity, equating to around $66.7 per public dollar spent. These estimates focus on impacts for supported firms and do not capture broader economy-wide interactions, which could either dampen overall impacts through offsetting effects or amplify them through spillovers to other firms.

# Acknowledgements

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**Disclaimer**

The output relates to research being undertaken as part of the 'Behaviour and performance of New Zealand firms' projects, under data lab agreement MAA2019-49, between Statistics New Zealand and the Ministry of Business, Innovation and Employment (MBIE).

In relation to output produced from the IDI and/or LBD: These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) and/or Longitudinal Business Database (LBD) which are carefully managed by Stats NZ. For more information about the IDI and LBD please visit https://www.stats.govt.nz/integrated-data/.

Our analysis uses restricted datasets provided by New Zealand Trade and Enterprise (NZTE) for the purpose of evaluating the International Growth Fund (IGF). Any discussion of data limitations or weaknesses is not related to the data's ability to support NZTE's operational requirements.

The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994. 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.

# Glossary table

| | |
|---|---|
| ANZSIC | Australia and NZ Standard Industrial Classification (2006) |
| “k”, “m” or “b” | Shorthand to denote numerical values in thousands, millions and billions. |
| BOS | Statistics New Zealand’s Business Operations Survey |
| Customer Way | The operating model used by NZTE to deliver value to its customers. |
| Focus firm | A firm in NZTE’s Focus segment, receiving a broad suite of tailored support services. |
| FTE | Full-Time Equivalent employee. A measure of labour input that standardises employee hours into the equivalent number of full-time workers. |
| GST | Goods and Services Tax. GST returns are used in the LBD to derive measures such as total sales and zero-rated (export) sales. |
| GVA | Gross value added |
| IGF | International Growth Fund |
| IRD | Inland Revenue Department- Te Tari Taake. An IRD identifier is a tax-based identifier used to link firms to tax and other administrative records. |
| LBD | Statistics New Zealand’s Longitudinal Business Database |
| MBIE | Ministry of Business, Innovation and Employment – Hīkina Whakatutuki. the Government’s lead micro-economic agency, responsible for advising on policies related to the business environment and economic growth. |
| mfp | Multifactor productivity. A measure that captures the relative difference among firm sales that are not explained by inputs. |
| PPI | The Producer Price Index, maintained by Statistics NZ, measures changes over time in the prices received by producers for outputs, or paid for inputs. |
| PV | The present (discounted) value in 2025, after accounting for the opportunity cost of capital. |
| myNZTE | NZTE’s digital platform for supporting and sharing information with firms. |
| NZBN | New Zealand Business Number. A unique identifier assigned to businesses in New Zealand to support consistent identification across government and private-sector systems. |
| NZTE | New Zealand Trade and Enterprise – Te Taurapa Tūhono. New Zealand’s international business development agency, responsible for operating the International Growth Fund. |
| PENT | Permanent Enterprise Number. A longitudinal firm identifier constructed to maintain continuity of a firm’s statistical record in the LBD when underlying legal entities change. |
| RePEc | RePEc (Research Papers in Economics) provides rankings for economics journals, book series, working papers, and more. |
| SOC | The social opportunity cost of capital discount rate, used for initiatives with mainly commercial cost and benefits. |
| SRTP | The social rate of time preference discount rate, used for initiatives with mainly non-commercial costs and benefits. |
| Statistics NZ | Statistics New Zealand – Tatauranga Aotearoa. New Zealand's official data agency. |
| Supported firm | A firm that received one or more IGF Expansion grants closed or closing by 30 June 2024. |
| wp | Working Proprietor. An owner-operator of a business who contributes labour to the firm but is not classified as an employee. |

# 1 Introduction

The New Zealand Government has a policy target to double the value of New Zealand exports by 2034 (MBIE, 2025; Ministry for Primary Industries, 2025). Established in 2009, the IGF plays an important role in achieving this target and supporting related government growth and productivity objectives. New Zealand Trade and Enterprise (NZTE) is the key government agency for directly supporting exporters, and the IGF is NZTE's major grant programme.

Most IGF funding is channelled through Expansion grants, which provide a co-funding mechanism to support firms to enter or accelerate growth in new markets. Expansion grants have accounted for around two-thirds of IGF funding in recent years. The IGF also offers two smaller co-funded grants for specific purposes: Validation grants (introduced in 2015) and Springboard grants (introduced in 2020). IGF grants are available only to firms in NZTE's Focus segment – a group of export firms that receive a broad suite of tailored support services from NZTE.

The IGF has never been subject to a causal impact evaluation. The last formal evaluation of the IGF was completed in 2015. [1] In the 2015 evaluation, businesses reported that the IGF, as well as other NZTE supports, helped to address the export barriers experienced by New Zealand firms. The evaluation highlighted increases in employment, revenue, and export revenue among IGF recipients, and drew a conclusion that "[t]here is evidence of the IGF having a positive impact at the business level..." (SSI Research Evaluation & Analysis, 2015, p. 9). As well as the measures reported in the 2015 evaluation, NZTE's Direct Economic Impact measure used for annual performance measurement suggests that the IGF has generated positive impacts.

While the earlier findings were encouraging, the lack of counterfactual analysis made it difficult to establish whether IGF support caused the observed outcomes. For example, NZTE data used in the 2015 evaluation highlighted that 70% of firms were experiencing positive export growth in the year prior to joining the IGF. In addition, when IGF recipients were surveyed about whether their project would have gone ahead without funding, eighty percent of respondents said the project would have gone ahead, "at least partially" (SSI Research Evaluation & Analysis, 2015, p. 56).

Motu Economic and Public Policy Research (henceforth "we") were engaged by the Ministry of Business, Innovation and Employment (MBIE) to address the evidence gap by undertaking a causal analysis of the firm-specific effects of IGF Expansion support. We were asked to examine impacts on recipients of Expansion grants that were closed or closing by 30 June 2024. Two questions were posed: [2]

- Have IGF Expansion grants been successful in increasing international activity and performance outcomes of recipient firms?
- What is the return on investment from IGF Expansion grants?

Our analysis uses firm-level data and quasi-experimental causal inference methods to estimate the effects of Expansion grants on recipient firms, which forms the basis for calculating the return on government investment.

## 1.1 Research team

Established in 2000 as an independent charitable trust specialising in economic and public policy research, Motu is the top-ranked economic research group in New Zealand (based on RePEc

[1] MBIE also undertook a review of the IGF as part of its "Internationalisation Support Review" in 2022/23 but the effectiveness of the IGF was not assessed due to data limitations and other constraints.

[2] We were not asked to review NZTE's own performance targets for the IGF, nor to examine the scheme's operation.

rankings). This project was undertaken by Dr. Tadhg Ryan-Charleton, Dr. David C. Maré, Dr. Lynda Sanderson, and Dr. John McDermott. Ryan-Charleton brings eleven years of research experience focused on firm outcomes and performance, and recently co-led the first evaluation of New Zealand's Research and Development Tax Incentive (along with Maré). Maré brings substantial experience in programme evaluation and the use of Statistics New Zealand's Integrated Data Infrastructure and Longitudinal Business Database (LBD). Productivity tables generated Fabling and Maré have been used in many, if not most, recent NZ microdata research on business outcomes. Sanderson specialises in the analysis of export performance and international engagement, including seven peer-reviewed journal articles and numerous working papers using the LBD. McDermott is the Executive Director of Motu and a Companion of the Royal Society of New Zealand.

### 1.2 Report structure

The remainder of the report proceeds as follows. Section 2 discusses the rationale for the IGF, as well as the evolution of policy settings and eligibility criteria. Section 3 introduces the core datasets used in the evaluation. It also examines the characteristics of IGF Expansion recipients and how the profile of recipients has changed over time. Section 4 outlines the methods and results of our causal analysis. Section 5 describes the aggregation of relevant government costs and our approach to calculating programme returns. Section 6 situates the findings within wider policy and academic evidence, and discusses the limitations of our work. Appendices at the end of the document contain supplementary tables (Appendix A) and further detail about our data and methods (Appendix B).

# 2 Policy overview

The International Growth Fund was established in 2009 when two earlier government funds were disestablished: the Market Development Assistance Fund and the Enterprise Development Fund; and a third, the Growth Services Fund, was subsumed into the IGF. The IGF was an attempt to achieve a greater return from public funds while generating savings by having a smaller and better targeted grant scheme for ambitious firms seeking to grow their exports.

## 2.1 Rationale for the IGF

New Zealand's small domestic market means that scaling internationally is an important contributor to firm survival and growth. New Zealand firms face barriers to internationalisation, including building the scale necessary to begin exporting at a meaningful level and distance from major export markets. Government strategy therefore emphasises export-led growth and targeted assistance to firms with the capability and ambition to compete offshore.

The IGF is NZTE's largest direct intervention to support exporting firms. It exists to help firms "to undertake market development and business capability development activities required for international markets, that will develop benefits for both the business and the wider New Zealand economy" (New Zealand Government, 2025a, p. 49). The objective is to support firms to enter or accelerate growth in new markets (with new or existing products). It aims to help firms acquire the capabilities required to expand into new markets, and to reduce the risks and costs to firms of expanding into new markets.

A key rationale for the IGF is that firms involved in international trade and investment tend to be "more productive, innovative, and growth-oriented" than the general population of firms (SSI Research Evaluation & Analysis, 2015, p. 15). Entering new markets generates benefits for New Zealand exporters, including economies of scale and access to new ideas and technologies.

Based on survey responses reported in a prior 2015 evaluation, IGF recipients were "taking on increased risk in international markets, improving strategy and internationalisation processes, [achieving] greater business confidence to undertake international projects and improved in-market networks" (SSI Research Evaluation & Analysis, 2015, p. 9). The 2015 evaluation suggested that businesses perceived the additional speed and reduced risk of international expansion as key benefits of the IGF.

The intervention logic model for the IGF (SSI Research Evaluation & Analysis, 2015, Appendix 1) also highlights indirect benefits ('spillovers') from the success of New Zealand firms in new markets. In the case of the IGF, potential indirect benefits include knowledge transfer, removing market barriers, reputational spillovers, and improved supply chain performance:

*"Exporters do not take these benefits into account when making their investment decisions so, from an economy-wide perspective, will underinvest in international activities. NZTE has a role in facilitating the flow of benefits to the wider New Zealand economy"* (SSI Research Evaluation & Analysis, 2015, p. 16)

## 2.2 IGF policy settings

There have been various changes to the IGF policy design and settings since its establishment. In its current form, the IGF has three funds:

- **Expansion:** Up to $600,000 per firm[3] in public funding to help firms accelerate and grow in a market that is of strategic importance for the firm, while also demonstrating a measurable economic impact to New Zealand (New Zealand Trade and Enterprise, 2024). Expansion grants have accounted for around two-thirds of IGF funding in recent years and are the focus of this analysis.
- **Validation:** Up to $100,000 per firm to help firms research, test and confirm an international opportunity before committing further resources and capital. Validation grants were introduced in 2015.
- **Springboard:** Up to $10,000 per firm to help firms address a specific need, utilising specialist advice or support (e.g., leadership development). Springboard funding was introduced as part of changes made to the IGF in 2020. Springboard grants were initially separate from the IGF and were added to the IGF portfolio in 2022.

Public funding for the IGF increased from $20 million in 2011 [4] to $30 million per annum from 2012 (SSI Research Evaluation & Analysis, 2015). Through the Covid-19 Response and Recovery Fund (CRRF), IGF funding was temporarily increased to $60 million per annum for the four years of 2021-2024 (New Zealand Government, 2020). Following the expiry of CRRF funding, IGF funding dropped to $40 million for 2025, with $34 and $32 million remaining in the appropriation for 2026 and 2027 respectively (New Zealand Government, 2025b). These figures reflect a $14m reduction in IGF funding as part of wider savings from the government's May 2024 Budget and a $6m reduction in 2025 (MBIE, 2024; New Zealand Government, 2024, 2025a). From establishment to the end of 2025, $443.3m in public funding (nominal terms) has been disbursed across all IGF grant types.

Over time, the structure of IGF funding has also evolved. When introduced, IGF grants offered 50:50 co-funding (New Zealand Government, 2015) in amounts ranging from $20,000 to $1 million (SSI Research Evaluation & Analysis, 2015). This was capped at $600,000 in July 2012 (SSI Research Evaluation & Analysis, 2015). Changes announced by the Government in response to the SSI Evaluation included a reduction in the public co-funding contribution to 40%; [5] acceptance of IGF applications from multi-firm coalitions for up to $900,000 in funding over three years; and a shortening of the wait period from five years to three years before a firm can re-apply after receiving IGF Expansion funding. [6]

The IGF is available only to firms in NZTE's Focus segment – a group of export firms that receive a broad suite of tailored support services from NZTE. [7] Firms become part of NZTE's Focus segment by having international growth aspirations, showing ability to compete globally, being willing to partner with government (including sharing strategic plans and some financial data), and

[3] If applicable, funding limits are determined at the enterprise group level. The funding limit of $600,000 (under current settings) includes funds provided across all three types of IGF grants within a three-year period. Grant funding amounts are GST exclusive.

[4] These years refer to the government financial year ending on 30 June, unlike the rest of our report which uses March years unless stated.

[5] As part of the CRRF, the IGF co-funding rate returned to 50% in 2020. It reverted to 40% in 2024 around the time that the CRRF expired.

[6] The time before a firm could reapply for another Expansion grant was reduced to two years as part of the Covid-19 response. It reverted to three years on 1 July 2022.

[7] In the years following the establishment of the IGF, NZTE introduced the "Focus 500" segment for firms it supports most intensively. Prior to 2012, NZTE segments offering intensive support to firms included 'Key Account' and 'Pipeline' firms (SSI Research Evaluation & Analysis, 2015). For clarity, as well as consistency with the NZTE dataset uploaded to the LBD, we refer to firms that received intensive NZTE support at any stage during the period of interest as "Focus firms". Furthermore, while NZTE use the term "customers" to describe firms in the Focus segment, we use "firms" to refer to economic entities in our analysis, regardless of whether they receive NZTE support.

demonstrating sufficient readiness and capabilities to receive intensive support (New Zealand Trade and Enterprise, 2023a). In addition to exclusive eligibility for IGF grants, support services for Focus firms include dedicated customer managers, private sector (Beachhead) advisors, bespoke one-on-one advisory sessions, access to NZTE's international network, and capability-building both in New Zealand and abroad (New Zealand Trade and Enterprise, 2024).

The number of Focus firms grew from around 500 firms at the time of the earlier IGF evaluation (SSI Research Evaluation & Analysis, 2015) to 700 firms by 2020. The size of the Focus segment increased to around 1,400 using time-limited funding from the Covid-19 Response and Recovery Fund, and scaled back to around 1,000 firms in 2024 (New Zealand Trade and Enterprise, 2023b). Dialogue with NZTE suggests that firms may enter and exit the Focus segment multiple times. NZTE Customer Managers periodically reassess eligibility and the value to New Zealand of continued membership. Firms themselves may choose to exit the Focus segment if there are periods when the compliance costs outweigh the support required, or when priorities shift.

### 2.2.1 Eligibility criteria for Expansion grants

Eligibility criteria for Expansion grants have been refined over time. Potential applicants must "...be ready to undertake the project and be capable of doing it successfully, including having the resources to fund it" (SSI Research Evaluation & Analysis, 2015, p. 34). There is a maximum size threshold (based on revenue) for receipt of funding. Since 2015, firms with more than $500 million in international revenue have not been eligible for IGF grants (New Zealand Government, 2015). This threshold was lowered to $100 million in total revenue in 2025 (New Zealand Trade and Enterprise, 2025). IGF grants for internationalisation to Australia were also introduced post-2015, with close support from the Ministry of Foreign Affairs and Trade (MFAT).

The evolution of IGF Expansion eligibility criteria has increased the emphasis on the additionality of the proposed project and the firm's access to capital from other sources (e.g., investors). At present, applicants must meet financial, business, and project-related criteria. The eligibility criteria displayed to firms on the myNZTE platform reflect the current requirements.

"Financial criteria

- Be a Focus customer with total revenue of less than $100 million
- Have sufficient capital and/or positive cash flow, or demonstrate a clear pathway to profitability
- Have a track record of sustainable international growth

Business criteria

- Have an appropriate governance structure for the size of the company
- Have a product or service ready to bring to the market with demonstrable product-market fit
- Have an ongoing commitment and close partnership with NZTE

Project criteria

Projects must demonstrate the following attributes.

- Focuses on a business's international growth beyond business-as-usual (BAU) activity and is differentiated from BAU.
- Targets a new niche or gap in the market, validates a new opportunity, or drives expansion in a strategic market
- Has wider economic benefits to New Zealand (e.g. jobs, local supplier spending, increased returns to NZ shareholders)

- Robust quality of forecasts and risk mitigations to achieve project outcomes
- Capacity (i.e. people, resources, and capital) of the business to execute the project alongside existing international operations"

(Reproduced with permission from NZTE.)

Under the current settings, these criteria are considered alongside five assessment areas: the impact on the risk-return profile of the IGF portfolio, forecast export impact, additionality of co-funding provided, leadership and governance, and anticipated spillovers.

Before a Focus firm becomes involved in an IGF Expansion application, their NZTE customer manager initiates the project and consults within NZTE as to why the project would be a good use of public funds (SSI Research Evaluation & Analysis, 2015). This includes a careful assessment of the firm's capacity and capability to deliver the project, as well as a review of other necessary standards and criteria. The pre-application assessments mean that very few Expansion project applications are declined.

# 3 Data sources and recipient characteristics

Our analysis relies on linked longitudinal microdata from Statistics New Zealand's Longitudinal Business Database (LBD). Two NZTE datasets uploaded to the LBD contain information on most IGF grants awarded, as well as on firms that have been part of NZTE's Focus segment. In combination with other administrative and survey datasets in the LBD, this provides the foundation for our analysis. We discuss key features of the datasets in this section, before using them to unpack the characteristics of IGF Expansion recipients and how recipient characteristics have changed over time.

## 3.1 Longitudinal Business Database

The LBD provides an established collection of large-scale sample surveys and a range of administrative data for firms operating in New Zealand. This enables us to link NZTE records to a wide range of business microdata, allowing us to create a (de-identified) panel dataset of objective and consistently measured information for relevant characteristics and outcomes.

Firm outcomes relating to sales, exports, and value added are measured using GST records, which are used to derive annual information on total sales, zero-rated (export) sales, and purchases for GST-registered firms. Export sales of goods are measured using Overseas Merchandise Trade data from the New Zealand Customs Service, which records the value of goods exports. Productivity measures draw on user-generated productivity tables (Fabling, 2024; Fabling & Maré, 2015, 2019). Our measure of export intensity uses self-reported data from the Business Operations Survey (BOS), as well as GST data. Balance sheet items used to construct leverage ratios rely on Annual Enterprise Survey responses, supplemented where necessary by IR10 tax return data to improve coverage. Additional demographic variables (e.g., industry, foreign ownership) are drawn from the Business Register.

The IGF and Focus data provided by NZTE can be linked to other LBD data using correspondence among confidentialised versions of New Zealand Business Numbers (NZBNs), tax identifiers (IRD numbers), and "enterprise numbers", which refer to unique identifiers for firms in Statistics New Zealand's Business Register. Any reference made to firm identifiers in this report should be interpreted as relating to the identifiers confidentialised by Statistics New Zealand. We are not able to identify actual firms.

Unless specified, the firm entities studied in this report are based on permanent enterprise numbers (PENTs). These unique identifiers were developed by Fabling (2011) to maintain a consistent time series for firms even when administrative changes—such as restructuring as a limited liability company—create breaks in legal identifiers.

Statistics NZ requires that outputs based on LBD microdata meet strict requirements that protect the confidentiality of firms (Statistics New Zealand, 2022). This means that firm counts are randomly rounded to a nearby increment of three, graduated random rounding is applied to count magnitudes (such as the total number of grants awarded), and firm counts fewer than six are suppressed (denoted ".s"). Throughout our report, years are labelled according to the financial year ending March 31st, unless otherwise stated. For example, references to the year "2011" relate to the year ending 31 March 2011. [8]

[8] Most firms in New Zealand report their financial position using March 31 as their year end. Where firms use an alternative balance date, such as 30 June, we use a consistent aggregation for data to match their financial year; and then assign that information to the March year end with the greatest overlap with the firm's actual financial year.

Table 1: Overview of cleaned NZTE data

| | Grants | Distinct firms | Approved ($m) | Drawn down ($m) |
|---|---|---|---|---|
| Focus firms | | 2,127 | | |
| Grants | | | | |
| Expansion | 760 | 573 | $382.1 | $312.8 |
| Validation | 960 | 756 | $88.6 | $63.9 |
| Springboard | 880 | 705 | $6.0 | $4.0 |
| Total grants | 2,600 | | $476.7 | $380.7 |

*Notes: The table includes Expansion grants started by 30 June 2024, as well as all observed Validation grants, Springboard grants and Focus firms. Grant drawdown and approved values are expressed in nominal terms (not inflation-adjusted). Values are aggregated and rounded/ suppressed (".s") in accordance with Statistics NZ confidentiality requirements.*

Except when calculating the government costs of support in Section 5, IGF grant funding is discussed in nominal terms so that it can be easily reconciled with historical policy settings. All other financial measures are expressed in real terms using Statistics NZ's industry-level Producer Price Indices (base quarter: June 2025). This supports a focus on 'real' changes in inputs and production, setting aside the impact of inflation.

### 3.2 NZTE datasets

Before using for analysis the datasets that NZTE provided to Statistics NZ, it was necessary to undertake deduplication and repair work. The steps we took to clean the data and integrate it with other LBD data sources are described in Appendix B.

Table 1 reports the firms, grants, and funding contained in the datasets. The cleaned dataset comprises 760 IGF Expansion grants received by 573 distinct firms, with a draw-down value of $312.8m and average funding per firm of $546k (nominal terms). It also contained 960 Validation grants and 880 Springboard grants, which accounted for a further $67.9m of funds drawn down (nominal terms). A more detailed annual breakdown of grants is provided in Appendix Table 1, documenting the number of grants active in each year, new grants approved, approved value of grants, and fraction of approved funds that were ultimately drawn down.

The dataset of IGF grants contained records for most, but not all, IGF grants awarded. Certain grants were excluded by NZTE, including, among others, (a) grants awarded to multi-business coalitions and sole traders; (b) projects with draft status (not yet active) as of 30 June 2024; and (c) closed Expansion projects with a draw-down value of less than $100k. The total draw-down value of excluded IGF grants was $17.9m, with $16.5m of the value relating to Expansion grants (both nominal terms).

As shown in Table 1, the cleaned Focus dataset includes 2,127 distinct firms. The biggest challenge we faced with the Focus segment data related to missing records. Up to 2016, a nontrivial number of firms in the Focus segment are absent from the dataset uploaded to the LBD. Dialogue with NZTE suggests that these gaps are due to historical data quality issues associated with the Focus segment (and predecessor segments). In earlier years of the IGF, this means that we cannot observe the full population of potential comparison firms that would be used to construct counterfactual outcomes for supported firms. In more recent years, the cleaned dataset provides reasonably complete coverage of Focus membership.

### 3.3 Characteristics of Expansion recipients at the time of support

We proceed to examine the characteristics of firms receiving IGF Expansion support. Unlike our causal analysis which uses a narrower population, [9] the following overview of recipient characteristics makes use of data about recipients of Expansion grants started by 30 June 2024.

Due to changes in IGF policy settings, it made sense to examine the characteristics of Expansion recipients across three discrete IGF phases:

- Phase 1 (Inception, years ending 2010–2015): reflecting the establishment of the IGF. Expansion grants operated on a 50:50 co-funding basis, a maximum grant size of $1 million (nominal terms, later capped at $600,000), and eligibility restricted to a relatively small Focus segment of around 500 firms.
- Phase 2 (Adaptation, years ending 2016–2020): defined by policy refinements introduced after the 2015 evaluation—including the reduction of public co-funding to 40%, the introduction of multi-firm coalition applications, the shortening of the wait period between Expansion grants from five to three years, and the addition of Validation grants. This phase also coincided with a gradual expansion of the Focus segment to roughly 700 firms.
- Phase 3 (CRRF, years ending 2021–2024): encompassing the temporary doubling of IGF funding to $60 million per year (nominal terms) through the Covid-19 Response and Recovery Fund, the introduction of Springboard grants, and the temporary expansion of the Focus segment to around 1,400 firms at a given time.

Table 2 asks "what types of firms have received IGF Expansion support?" in each of the three phases. It disaggregates Expansion recipients and funding according to firm size in terms of sales, export intensity, and interaction with NZTE. At the top of Table 2, the row labelled "Overall" reports the number of unique firms receiving Expansion grants within each phase and the average drawdown rate per firm. The numbers of distinct supported firms are similar across phases: 249 in Phase 1, 228 in Phase 2, and 234 in Phase 3. The average drawdown value was at its highest ($498k per firm) during Phase 2.

Panel "a." of Table 2 explores the size of Expansion recipients, using pre-grant sales (inflation-adjusted) as an indicator of size. Panel "a" suggests that most historical recipients would remain eligible under the recently reduced eligibility ceiling of $100m in total sales. The fraction of recipients that are larger firms ($100m sales and above), and the associated fraction of funding has decreased steadily over time – from 13.3% of firms and 17.6% of funding in Phase 1 to 5.1% of firms and 5.6% of funding in Phase 3.

Panel "a" shows that most recipients are relatively small when defined by pre-grant sales: firms with less than $50m in sales accounted for 66.3% of recipients in Phase 1, 73.7% in Phase 2, and 76.9% in Phase 3. There is also evidence in Phases 1 and 2 that larger firms tended to receive higher average funding within their cohorts. In Phase 3, by contrast, average funding was more evenly distributed across size brackets. Firms with less than $1m in sales received, on average, slightly more financial support ($453k) than other size brackets.

[9] The causal analysis studies recipients of Expansion grants that were closed or closing by 30 June 2024.

Table 2: Characteristics of firms receiving Expansion grants

| | Phase 1: 2010- 2015 (Inception) | | | | Phase 2: 2016- 2020 (Adaptation) | | | | Phase 3: 2021- 2024 (CRRF) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Firms | | $ avg. per firm | | Firms | | $ avg. per firm | | Firms | | $ avg. per firm | |
| Overall | 249 | (100.0%) | $423k | (100.0%) | 228 | (100.0%) | $498k | (100.0%) | 234 | (100.0%) | $402k | (100.0%) |
| a. Size (GST sales) | | | | | | | | | | | | |
| less than $1m | 18 | (7.2%) | $299k | (5.1%) | 24 | (10.5%) | $431k | (9.1%) | 27 | (11.5%) | $453k | (13.0%) |
| $1m to <$10m | 75 | (30.1%) | $361k | (25.7%) | 81 | (35.5%) | $481k | (34.3%) | 105 | (44.9%) | $371k | (41.5%) |
| $10m to <$50m | 72 | (28.9%) | $425k | (29.1%) | 63 | (27.6%) | $509k | (28.3%) | 48 | (20.5%) | $418k | (21.3%) |
| $50m to <$100m | 15 | (6.0%) | $600k | (8.5%) | 18 | (7.9%) | $506k | (8.0%) | 15 | (6.4%) | $409k | (6.5%) |
| $100m and above | 33 | (13.3%) | $563k | (17.6%) | 18 | (7.9%) | $590k | (9.4%) | 12 | (5.1%) | $442k | (5.6%) |
| No available data | 36 | (14.5%) | $408k | (13.9%) | 24 | (10.5%) | $515k | (10.9%) | 27 | (11.5%) | $419k | (12.0%) |
| b. Export intensity (% of sales from exports) | | | | | | | | | | | | |
| less than 1% | 30 | (12.0%) | $373k | (10.6%) | 36 | (16.0%) | $472k | (15.0%) | 51 | (21.3%) | $360k | (19.5%) |
| 1% to < 20% | 24 | (9.6%) | $403k | (9.2%) | 24 | (10.7%) | $437k | (9.3%) | 42 | (17.5%) | $369k | (16.5%) |
| 20% to < 50% | 42 | (16.9%) | $365k | (14.6%) | 42 | (18.7%) | $497k | (18.4%) | 27 | (11.3%) | $331k | (9.5%) |
| 50 to <80% | 36 | (14.5%) | $454k | (15.5%) | 42 | (18.7%) | $530k | (19.6%) | 39 | (16.3%) | $409k | (17.0%) |
| 80% and above | 81 | (32.5%) | $460k | (35.3%) | 54 | (24.0%) | $537k | (25.6%) | 45 | (18.8%) | $450k | (21.5%) |
| No available data | 36 | (14.5%) | $433k | (14.8%) | 27 | (12.0%) | $513k | (12.2%) | 36 | (15.0%) | $419k | (16.0%) |
| c. Interaction with NZTE | | | | | | | | | | | | |
| First time Expansion recipient | 249 | (100.0%) | $423k | (100.0%) | 153 | (67.1%) | $496k | (66.9%) | 171 | (73.1%) | $385k | (70.0%) |
| New to Focus segment | 60 | (24.1%) | $378k | (21.5%) | 51 | (22.4%) | $539k | (24.2%) | 42 | (17.9%) | $481k | (21.5%) |
| Prior Validation recipient | | | | | 72 | (31.6%) | $514k | (32.6%) | 132 | (56.4%) | $369k | (51.7%) |

*Notes: This table covers recipients of Expansion grants started prior to 30 June 2024. $ avg." refers to the average value drawn down by firms in a given category (nominal terms, not inflation-adjusted). Sales (real terms) and export intensity are defined in the year prior a firm's first grant within a phase. Values are aggregated to years ending 31 March and rounded/ suppressed (".s") in accordance with Statistics NZ confidentiality requirements. Rounding/ suppression can cause slight differences in total values of different panels. Firms are defined as new to the Focus segment if they entered NZTE's Focus segment for the first time in the year they received the grant, or the year prior to receiving the grant.*

Table 3: Industry breakdown of firms receiving Expansion grants

| | Phase 1: 2010- 2015 (Inception) | | | | Phase 2: 2016- 2020 (Adaptation) | | | | Phase 3: 2021- 2024 (CRRF) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Firms | | $ avg. per firm | | Firms | | $ avg. per firm | | Firms | | $ avg. per firm | |
| Consolidated industry grouping | | | | | | | | | | | | |
| C1: Manufacturing group 1 | 27 | (11.1%) | $401k | (10.3%) | 24 | (10.5%) | $440k | (9.3%) | 18 | (7.5%) | $404k | (7.8%) |
| C11: Food Product Manufacturing | 36 | (14.8%) | $429k | (14.6%) | 27 | (11.8%) | $522k | (12.4%) | 21 | (8.8%) | $429k | (9.6%) |
| C2: Manufacturing group 2 | 60 | (24.7%) | $420k | (23.9%) | 45 | (19.7%) | $483k | (19.1%) | 36 | (15.0%) | $353k | (13.6%) |
| F3: Wholesale Trade | 27 | (11.1%) | $341k | (8.8%) | 24 | (10.5%) | $486k | (10.3%) | 33 | (13.8%) | $367k | (12.9%) |
| FIRE: Finance, Insur. & Real Est. | 15 | (6.2%) | $560k | (8.0%) | 18 | (7.9%) | $553k | (8.8%) | 24 | (10.0%) | $440k | (11.3%) |
| J: Info. Media and Telecoms | .s | | .s | (1.7%) | 6 | (2.6%) | $548k | (2.9%) | 12 | (5.0%) | $422k | (5.4%) |
| M69: Prof/Sci/Tech Serv. | 18 | (7.4%) | $461k | (7.9%) | 30 | (13.2%) | $474k | (12.5%) | 27 | (11.3%) | $380k | (10.9%) |
| M7000: Comp Sys Design & Rel. Serv. | 36 | (14.8%) | $432k | (14.8%) | 36 | (15.8%) | $497k | (15.8%) | 45 | (18.8%) | $381k | (18.3%) |
| OSERV: Service industries nec | 18 | (7.4%) | $389k | (6.7%) | 12 | (5.3%) | $579k | (6.1%) | 18 | (7.5%) | $425k | (8.2%) |
| OTHER: Non-serv. nec | 6 | (2.5%) | $608k | (3.5%) | 6 | (2.6%) | $514k | (2.7%) | 6 | (2.5%) | $306k | (2.0%) |
| Unlinkable | .s | .s | .s | .s | .s | .s | .s | .s | .s | .s | .s | .s |

*Notes: Further detail of consolidated industry groupings is provided in Appendix Table 2. This table is limited to Expansion grants started prior to 30 June 2024. $ avg." refers to the average value drawn down by firms in a given category (nominal terms, not inflation-adjusted). Values are aggregated to years ending 31 March and rounded/ suppressed (".s") in accordance with Statistics NZ confidentiality requirements. Rounding/ suppression can cause slight differences in total values when recipient characteristics are disaggregated.*

Panel "b" examines the export intensity of Expansion recipients in the pre-grant year. Over time, firms receiving Expansion grants have tended to be less export-reliant prior to support. The share of recipients deriving 50% or more of their sales from exports declined from 47.0% in Phase 1 to 42.7% in Phase 2 and 35.0% in Phase 3. Conversely, the share of firms with low export intensity (less than 20% of sales from exports) increased from 21.7% in Phase 1 to 26.7% in Phase 2 and 38.8% in Phase 3. This could point to a possible shift over time toward support for firms whose pre-grant sales are more concentrated in the domestic market. It could also point to firms engaging in more complex forms of internationalisation, including producing goods offshore or establishing overseas subsidiaries.

Panel "c" of Table 2 documents recipients' interactions with NZTE and other supports they may have received. Whereas panels "a" and "b" report mutually distinct subgroups, the subgroups in panel "c" can overlap. For example, the same firm can be counted as receiving their first Expansion grant while also being new to the Focus segment. Firms are defined as "new" to the Focus segment if they first entered the Focus dataset in the same year as receiving the Expansion grant, or the year immediately prior. [10]

Panel "c" demonstrates that, in each phase, most recipients are receiving an Expansion grant for the first time. Most recipients have been in the Focus segment since at least two years before their Expansion grant (i.e., they are not new to the Focus segment). This likely reflects time taken to proceed through NZTE's Customer Way; and for the firm and NZTE to arrive at a shared view of the firm's readiness for an Expansion grant. Prior Validation grant recipients comprised more than half (56.4%) of Expansion recipients in Phase 3, highlighting how it has become common for firms to use a Validation grant as a stepping stone towards an Expansion grant.

Table 3 breaks down Expansion recipients according to their primary industry using the 2006 update to the Australia and NZ Standard Industrial Classifications (ANZSIC). For clarity and parsimony, we define consolidated industry groupings based on the first letter of the ANZSIC classification in most cases. Appendix Table 2 provides additional detail regarding larger groupings (e.g., "C1", "C2", "OSERV" and "OTHER").

Table 3 suggests that Expansion funding has been widely dispersed across the economy, with most significant goods and services sectors well-represented. The proportion of IGF recipients from manufacturing industries has decreased over time (C1, C11, and C2), from 50.6% (Phase 1) to 42.1% (Phase 2) and 31.3% (Phase 3). The largest manufacturing industry decrease comes from Manufacturing group 2 ("C2"), which includes mineral and metal product manufacturing industries; as well as equipment, machinery and furniture manufacturing.

Table 3 also points to an increase in Expansion recipients from certain service industries, including computer systems design ("M7000"), professional, scientific and technical services ("M69") and information, media and telecommunications ("J"). The proportion of Expansion recipients from these three service industry groupings has increased from 22.2% (Phase 1) to 31.6% (Phase 2) to 35.0% (Phase 3).

Firms can receive more than one Expansion grant over time, subject to the specified wait period. Most firms (423 of 573 recipients; 73.8%) have received one Expansion Grant only. Firms with one Expansion grant have drawn down an average of $398k per firm. One hundred and eleven firms (19.3%) have received two Expansion grants, drawing down an average of $838k. Thirty-nine firms (6.8%) have received three or more Expansion grants, drawing down an average of $1.315m.

[10] The historical data quality issues mean that entry to the Focus dataset may not reflect actual entry to the Focus segment for some firms. Insofar as possible, we restrict the "New to Focus" subgroup to firms that are truly new to the Focus segment. Firms with confirmed data gaps (i.e., receiving an Expansion grant while not recorded in the Focus dataset) are not treated as being new to the Focus segment.

# 4 Causal analysis

The previous section discusses the data available, the types of firms that receive Expansion support, and how this has evolved over time. The next step in our analysis is to assess whether Expansion support leads to changes in firm outcomes relative to what would have occurred in its absence. To do this, we undertake a structured causal analysis. This section offers a concise overview of our data and methods, before outlining the results of our analysis. A more detailed discussion of our data and methods is provided in Appendix B.

## 4.1 Methods

Our analysis adopts a firm-level lens. Although Expansion grants are awarded for specific projects, the effects of Expansion projects are expected to translate into firm-level performance improvements. Expansion grants support internationalisation activities and capability development, with impacts expected to be reflected in firms' export behaviour and broader performance over time. Firm-level analysis allows these outcomes to be observed before and after Expansion support, and to be compared with carefully constructed counterfactuals. This provides the most direct means for assessing the additionality of IGF Expansion grants, benefitting from the use of objective and consistent firm-level microdata from the LBD.

Following the approach of Hirano & Imbens (2001), we adopt a 'doubly-robust' approach to estimate the effect of Expansion support (the "treatment") on supported firms. Our approach first controls for the way that characteristics ("covariates"), such as recent sales, industry, and Focus segment history, are related to which firms receive treatment (i.e., selection). This relationship is summarised using predicted probabilities of receiving support ("propensity scores"), based on the observed characteristics. Accounting for the association between characteristics and selection is important because firms that receive support are not randomly chosen and may differ from other firms in ways that also affect their outcomes. Without controlling for these differences, we risk mistakenly attributing those underlying advantages (or disadvantages) to the effect of Expansion support.

The second component of the approach involves estimating outcomes for both supported firms and comparison firms, again controlling for firm characteristics. We use the estimated propensity scores to give greater weight to comparison firms that look more like the supported firms, and less weight to those that are less comparable. This allows all comparison firms to contribute information, while ensuring that the weighted comparison group more closely resembles the treated firms on the characteristics used in the analysis. We then use the relationship between firm characteristics and outcomes in the weighted comparison group to estimate the outcome each supported firm would have been expected to achieve in the absence of support (the counterfactual). The difference between the predicted outcomes with and without support is referred to as the treatment effect associated with receiving Expansion support. Averaging the treatment effect across treated firms generates our main measure of policy impacts.

## 4.2 Estimation sample

We study firms receiving Expansion grants that were closed or closing by 30 June 2024. Shown in Table 4, this results in a narrower set of 477 treated firms that drew down $277.1m in Expansion funding (nominal terms). Using export sales as an illustration, Table 4 also shows how the estimation sample becomes considerably smaller once we apply the conditions required for inclusion in the analysis. This includes restricting estimation to firms first supported between 2010 and 2022, as there are too few treated firms outside this window for the selection model to estimate treatment

Table 4: Data constraints and estimation sample of supported firms

| | Firms | $ funds |
|---|---|---|
| Received an Expansion grant closed or closing by 30 June 2024 | 477 | $277.1m |
| & first supported in estimation window (2010-2022) | 468 | $272.7m |
| & evidence of activity (some sales or employment around grant receipt) | 435 | $253.1m |
| & data available for primary outcome (non-zero export sales in year of first support) | 342 | $202.6m |
| & data available for all covariates | 270 | $160.6m |
| & within the common support range | 264 | $158.1m |

*Notes: Values are rounded/ suppressed (".s") in accordance with Statistics NZ confidentiality requirements. Grant funds are reported in nominal terms.*

probabilities reliably. It also requires sufficient data on relevant outcome variables and covariates. [11] Finally, we restrict estimation to firms within the common support range - that is, we exclude (treated and comparison) firms for which there are no sufficiently similar counterparts in the other group.

### 4.2.1 Comparison group

Because Expansion support is available only to firms in NZTE's Focus segment, the most credible comparison group involves Focus firms that did not receive Expansion support. Except for Expansion support, non-recipient Focus firms have access to the same NZTE services available to Expansion recipients. Restricting the comparison group to Focus firms allows us to separate the effect of Expansion support from the effect of NZTE's suite of other tailored supports. Using non-Focus firms to construct counterfactual outcomes would be problematic, as these firms differ in intensity of NZTE engagement. Any comparison outside the Focus segment would capture both the effect of IGF Expansion support and the broader effect of being part of the Focus segment, as well as factors determining selection into the Focus segment.

We construct the comparison group using firms that are part of the Focus segment in the current year or the year immediately prior. This restriction acknowledges that there is often a lead-in period that precedes Expansion support while Focus firms proceed through NZTE's Customer Way. Although some firms receive Expansion support in their first Focus year, Expansion recipients spend a median of around two years in the Focus segment before receiving a grant. The restriction also recognises that the Focus segment undergoes considerable churn, and credible comparison firms may move in and out of the Focus segment more frequently than firms preparing for Expansion support. We also restrict the comparison group to firms that do not themselves receive Expansion support before or during the estimation window, nor have ever shared an enterprise group with a firm that received Expansion support.

[11] Where recipients with no economic activity around the time of the support, this most likely reflects linking limitations in the identifiers provided, or in the concordances used by Statistics NZ to link NZBNs and IRD numbers to enterprise numbers. These firms seem unlikely to be special purpose entities established solely to receive grants, given the eligibility and reporting requirements of the IGF, and because enterprise group membership is no more common among this cohort than among recipients overall.

Importantly, a covariate is included in the selection and outcome models to capture the number of recent years of Focus membership. This means that estimated treatment effects are conditioned on the length of prior Focus engagement, and account for the possibility that Expansion recipients are more engaged with NZTE's other services in the lead up to Expansion support. After support is received, changes in levels of engagement with NZTE's non-IGF services (relative to the counterfactual) may reflect the effects of IGF support.

The same untreated firms can contribute to the construction of the counterfactual for multiple entry cohorts, provided they meet the definition of a comparison firm at that time. The pooled comparison group sample comprises 7,500 firm observations from 1,779 distinct firms (prior to sample attrition due to data availability). Standard errors are clustered at the firm level to account for the possibility that outcomes for the same firm are correlated over time.

### 4.3 Outcome measures

Two primary outcomes, export sales and gross value added, are used as the basis for determining policy impacts. We also examine and report upon six other outcomes that reflect firm internationalisation and firm performance. Outcomes are reported relative to the year of first support (year 0) with earlier and later years indexed relative to this point. For outcomes involving heavily skewed distributions, we use natural logarithms (henceforth 'logs') to reduce the influence of extreme values and improve coefficient interpretability.

Zero-rated GST sales are used as a proxy for export sales (Fabling & Sanderson, 2014). Under New Zealand's GST system, most exports are zero-rated. This means export transactions are recorded in GST returns but taxed at a rate of zero. Zero-rated GST sales data may include certain non-export transactions, such as sales of a going concern, which can contaminate the export proxy. Notwithstanding this limitation, zero-rated GST sales offers the best available proxy for export sales because (1) it offers near-complete coverage of the firm population, (2) it captures both goods and services, and (3) it is correlated with self-reported export intensity from the Business Operations Survey. [12]

Gross value added (henceforth "GVA" or "value added") reflects the value of a firm's output minus the value of intermediate inputs used in production. We follow prior studies and use net GST sales (GST sales minus GST purchases) as the primary measure of GVA (Grimes et al., 2012; Maré & Timmins, 2006). This offers the possibility to capture GVA based on a consistent measurement source. While it would also be possible to use the productivity tables to construct a measure of GVA, for most treated firms this would involve using data from multiple sources across different years in the series.[13] Using net GST sales as a proxy for GVA means that both our primary outcomes are derived from the same measurement source, creating the possibility to more cleanly interpret the relative magnitude of the effects.

[12] This is true except for a handful of industries where the main products are GST-exempt (Inland Revenue, 2025). We do not use zero-rated GST sales as a proxy for export sales in the following industries with GST-exempt products: Financial Services (ANZSIC K62 and K641), rental residential accommodation (ANZSIC L6711), and gold, silver and platinum metals (ANZSIC B0804, B0807, and B0809).

[13] Of the treated firms with productivity data, 73.6% rely on different data sources for different years in the estimation window. Changes in data source can result in large and implausible changes in estimated GVA.

Table 5: Mean characteristics of treated and comparison firms

| Outcomes | Treated | Comparison |
|---|---|---|
| Export sales | $31.7m | $33.4m |
| Gross value added | $18.5m | $22.3m |
| Export sales of goods | $29.7m | $35.2m |
| Total sales | $47.4m | $48.0m |
| Employment | 87 | 95 |
| Wages | $112.1k | $104.9k |
| Multifactor productivity | -0.12 | -0.16 |
| Export intensity | 49.6% | 31.6% |
| **Covariates** | **Treated** | **Comparison** |
| Recent capital level | $2.7m | $4.6m |
| Recent employment | 78 | 90 |
| Recent employment growth | 44.0% | 32.0% |
| Recent export intensity | 44.6% | 31.4% |
| Recent export intensity growth | 49.1% | 57.3% |
| Recent export sales | $26.4m | $32.2m |
| Recent export sales growth | 50.3% | 38.7% |
| Recent export sales of goods | $25.2m | $33.1m |
| Recent export sales of goods growth | 67.3% | 66.7% |
| Recent mfp | -0.13 | -0.14 |
| Recent mfp growth | 45.9% | 46.7% |
| Recent total sales | $43.1m | $47.8m |
| Recent sales growth | 47.2% | 45.3% |
| Recent value added | $17.4m | $22.0m |
| Recent value added growth | 42.8% | 40.0% |
| Recent wages | $109.3k | $101.7k |
| Recent wages growth | 22.0% | 30.7% |
| <$500k recent R&D Exp. | 34.6% | 37.3% |
| >=$500k recent R&D Exp. | 34.0% | 18.7% |
| Enterprise group member | 52.8% | 32.0% |
| Firm age prior to treatment | 16.0 | 15.8 |
| Foreign ownership | 10.1% | 10.4% |
| Leverage | 0.35 | 0.21 |
| Recent Focus years | 3.2 | 2.5 |
| C11: Food product manf. | 13.2% | 10.5% |
| C1: Manf. group 1 | 8.8% | 12.3% |
| C2: Manf. group 2 | 19.5% | 12.5% |
| F3: Wholesale trade | 10.7% | 13.3% |
| M69: Professional, sci, tech servs | 10.1% | 13.1% |
| M7000: Comp sys. design | 17.0% | 12.7% |
| Other | 3.1% | 5.7% |
| Other services | 17.6% | 18.7% |

*Notes: Means are based on rounded counts in accordance with Statistics NZ confidentiality requirements. Dollar values are adjusted to June 2025 $-values (real terms). Outcomes reflect means in year 0. Most measures of recent activity reflect a moving annual average of activity over three prior years. Calendar year effects (not reported due to space constraints) are also included in the main analysis. Appendix Table 2 provides additional information about industry groupings.*

### 4.4 Firm characteristics (covariates)

Table 5 reports the covariates and outcomes included in our analysis, along with their average values for the treated and comparison groups. These variables were identified as relevant through literature review and feedback from policy specialists. Covariates are measured prior to support and not afterwards, as the latter creates the possibility that matching variables are influenced by the treatment status itself (Blundell & Dias, 2009). Most measures of recent activity (e.g., "Recent ln(sales)") reflect a moving annual average of activity over three prior years. As well as those in Table 5, time effects based on annual entry cohort are included to account for macroeconomic changes.

As shown in Table 5, there are differences in observable characteristics between treated and comparison firms. The reweighting approach makes the comparison group more similar to supported firms based on these characteristics. We allow some of these variables (those that reflect firm scale, experience and prior engagement with NZTE) to influence the likelihood of receiving support differently in different policy phases. This reflects changes in eligibility rules, programme implementation, and data quality over time, which have affected the probability of receiving Expansion support. The reweighting then gives more influence to comparison firms that look similar to supported firms, and less to those that do not. This helps ensure that differences in outcomes between the two groups reflect the effect of Expansion support, rather than underlying differences in the types of firms being compared.

### 4.5 Estimation results

For each outcome studied, this section discusses treatment effects, percentage changes, and aggregate impacts. Table 6 provides a summary of results. It shows how outcomes for supported firms change over time relative to similar firms that did not receive Expansion support, with each row representing a year before or after support begins. Estimated treatment effect coefficients ("te") represent changes in log points. The "%" column converts log point changes to (decimal form) percentages, [14] showing the average change in outcomes for supported firms as a result of Expansion support. Asterisks are used to denote statistical significance, with two asterisks indicating significance at the 5% level (the standard threshold). Coefficients that are not statistically significant indicate a greater level of uncertainty that the true effect differs from zero.

The "per firm" column in Table 6 reports impacts as an average dollar (or unit) change per supported firm in the estimation sample. The unit change is constructed by comparing the counterfactual outcome and the treated outcome, which enable us to generate an "observed outcome with support" and a "predicted outcome without support" for each supported firm. The difference between these values provides a firm-level effect in unit terms, which is averaged across the estimation sample of treated firms. The "Agg. %" column documents the percentage change in the estimated aggregate, giving a sense of the overall scale of impacts.

Table 6 also provides estimates of "placebo effects" for the three years prior to receiving Expansion support, controlling for prior characteristics. Because support has not yet occurred, and we would not expect to observe any treatment effect in the years prior to treatment, this serves as a robustness check of our approach. When estimated pre-treatment effects are close to zero, or not statistically different from zero, this suggests that supported and comparison firms are following similar outcome trajectories prior to treatment. The absence of large treatment effects in years -3 to -1 offers a degree of reassurance that the analysis has accounted for pre-treatment differences between the two groups.

[14] To convert coefficients into percentage changes (in decimal form), we exponentiate the estimated coefficient and subtract one; that is, $\exp(\beta) - 1$.

Table 6: Impacts of Expansion support

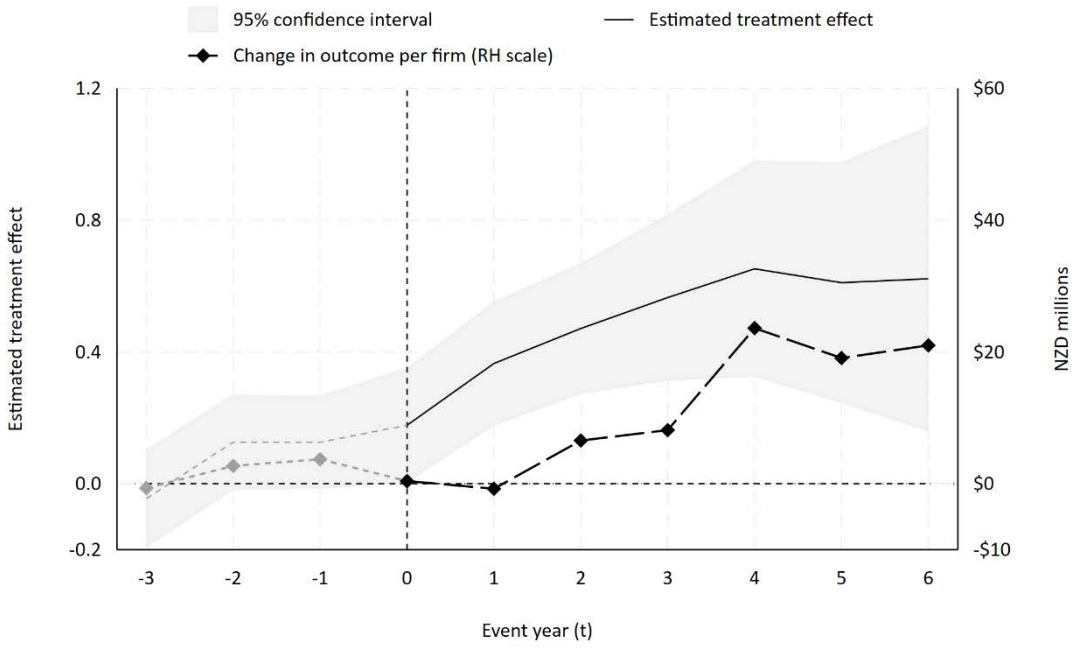
| Outcome | Year | T | C | te | % | per firm | Agg % |
|---|---|---|---|---|---|---|---|
| Export sales | -3 | 213 | 2,235 | -0.05 | -0.04 | -$0.7m | -0.02 |
| | -2 | 228 | 2,154 | 0.13* | 0.13 | $2.7m | 0.11 |
| | -1 | 231 | 2,604 | 0.13* | 0.13 | $3.7m | 0.13 |
| | 0 | 264 | 2,622 | 0.18** | 0.19 | $0.4m | 0.02 |
| | 1 | 258 | 2,616 | 0.36*** | 0.44 | -$0.8m | -0.04 |
| | 2 | 255 | 2,583 | 0.47*** | 0.60 | $6.6m | 0.31 |
| | 3 | 252 | 2,463 | 0.56*** | 0.76 | $8.1m | 0.41 |
| | 4 | 231 | 1,872 | 0.65*** | 0.92 | $23.6m | 1.51 |
| | 5 | 204 | 1,140 | 0.61*** | 0.84 | $19.1m | 1.38 |
| | 6 | 174 | 972 | 0.62*** | 0.86 | $21.0m | 1.16 |
| Gross value added | -3 | 213 | 2,259 | -0.01 | -0.01 | $1.8m | 0.09 |
| | -2 | 225 | 2,304 | 0.05 | 0.05 | -$0.9m | -0.05 |
| | -1 | 231 | 2,679 | 0.05 | 0.05 | -$1.1m | -0.06 |
| | 0 | 264 | 2,718 | 0.14*** | 0.16 | $0.7m | 0.04 |
| | 1 | 252 | 2,604 | 0.22*** | 0.25 | $0.6m | 0.03 |
| | 2 | 255 | 2,613 | 0.34*** | 0.40 | $1.9m | 0.12 |
| | 3 | 258 | 2,562 | 0.27*** | 0.31 | $3.0m | 0.21 |
| | 4 | 231 | 1,704 | 0.33*** | 0.39 | $3.9m | 0.24 |
| | 5 | 207 | 1,296 | 0.14 | 0.15 | $3.9m | 0.24 |
| | 6 | 171 | 1,050 | 0.13 | 0.14 | $4.7m | 0.24 |
| Export sales of goods | -3 | 162 | 1,626 | 0.05 | 0.05 | -$3.9m | -0.15 |
| | -2 | 168 | 1,602 | -0.02 | -0.02 | $3.1m | 0.17 |
| | -1 | 171 | 1,593 | 0.08 | 0.08 | -$1.8m | -0.08 |
| | 0 | 192 | 1,470 | 0.18** | 0.20 | $6.4m | 0.39 |
| | 1 | 192 | 1,527 | 0.29*** | 0.34 | $2.7m | 0.16 |
| | 2 | 189 | 1,512 | 0.24** | 0.27 | $7.2m | 0.44 |
| | 3 | 189 | 1,443 | 0.28** | 0.32 | $11.0m | 0.58 |
| | 4 | 180 | 1,308 | 0.40*** | 0.48 | $12.5m | 0.76 |
| | 5 | 165 | 1,026 | 0.20 | 0.23 | $9.7m | 0.56 |
| | 6 | 138 | 810 | 0.24 | 0.27 | $8.3m | 0.51 |
| Total sales | -3 | 225 | 2,406 | -0.02 | -0.02 | $0.8m | 0.01 |
| | -2 | 240 | 2,379 | -0.02 | -0.02 | $2.8m | 0.05 |
| | -1 | 249 | 2,784 | 0.04 | 0.04 | $2.4m | 0.05 |
| | 0 | 282 | 2,829 | 0.12*** | 0.12 | $3.6m | 0.08 |
| | 1 | 273 | 2,823 | 0.18*** | 0.19 | $1.1m | 0.02 |
| | 2 | 270 | 2,805 | 0.24*** | 0.28 | $8.2m | 0.20 |
| | 3 | 267 | 2,769 | 0.31*** | 0.37 | $9.7m | 0.23 |
| | 4 | 252 | 2,067 | 0.28*** | 0.33 | $18.1m | 0.44 |
| | 5 | 213 | 1,431 | 0.19* | 0.21 | $15.9m | 0.39 |
| | 6 | 189 | 1,182 | 0.14 | 0.15 | $11.3m | 0.25 |

Table 6 (continued): Impacts of Expansion support

| Outcome | Year | T | C | te | % | per firm | Agg % |
|---|---|---|---|---|---|---|---|
| Employment | -3 | 222 | 2,373 | 0.01 | 0.01 | 3.11 | 0.04 |
| | -2 | 240 | 2,358 | -0.00 | 0.00 | 0.78 | 0.01 |
| | -1 | 246 | 2,772 | 0.07** | 0.07 | 6.71 | 0.08 |
| | 0 | 279 | 2,745 | 0.11*** | 0.12 | 3.94 | 0.05 |
| | 1 | 276 | 2,709 | 0.16*** | 0.17 | 6.23 | 0.08 |
| | 2 | 273 | 2,688 | 0.21*** | 0.23 | 11.32 | 0.15 |
| | 3 | 258 | 1,986 | 0.22*** | 0.25 | 18.43 | 0.25 |
| | 4 | 231 | 1,434 | 0.22*** | 0.25 | 31.07 | 0.44 |
| | 5 | 195 | 1,164 | 0.25*** | 0.28 | 43.56 | 0.65 |
| | 6 | 168 | 900 | 0.19* | 0.21 | 41.04 | 0.57 |
| Wages | -3 | 219 | 2,337 | -0.01 | -0.01 | -$0.8k | -0.01 |
| | -2 | 234 | 2,337 | -0.01 | -0.01 | -$3.3k | -0.03 |
| | -1 | 243 | 2,724 | -0.00 | 0.00 | -$2.3k | -0.02 |
| | 0 | 276 | 2,718 | 0.01 | 0.01 | $0.0k | 0.00 |
| | 1 | 276 | 2,679 | 0.02** | 0.02 | $1.9k | 0.02 |
| | 2 | 270 | 2,646 | 0.04*** | 0.04 | $3.7k | 0.03 |
| | 3 | 255 | 1,962 | 0.04*** | 0.04 | $4.3k | 0.04 |
| | 4 | 228 | 1,419 | 0.03* | 0.03 | $3.2k | 0.03 |
| | 5 | 192 | 1,152 | 0.03 | 0.03 | $3.5k | 0.03 |
| | 6 | 168 | 888 | 0.03 | 0.03 | $3.8k | 0.04 |
| Multifactor productivity | -3 | 225 | 2,352 | -0.04* | | | |
| | -2 | 240 | 2,307 | -0.01 | | | |
| | -1 | 249 | 2,751 | 0.00 | | | |
| | 0 | 279 | 2,724 | 0.01 | | | |
| | 1 | 279 | 2,640 | -0.04 | | | |
| | 2 | 276 | 2,655 | -0.03 | | | |
| | 3 | 255 | 1,839 | -0.04 | | | |
| | 4 | 231 | 1,398 | -0.07** | | | |
| | 5 | 195 | 1,134 | -0.06 | | | |
| | 6 | 174 | 897 | -0.04 | | | |
| Export intensity | -3 | 225 | 2,430 | 0.82 | | | |
| | -2 | 240 | 2,364 | 1.29 | | | |
| | -1 | 249 | 2,730 | 0.30 | | | |
| | 0 | 279 | 2,730 | 2.40* | | | |
| | 1 | 279 | 2,730 | 3.61** | | | |
| | 2 | 273 | 2,721 | 3.47** | | | |
| | 3 | 270 | 2,688 | 2.86 | | | |
| | 4 | 258 | 2,076 | 5.41** | | | |
| | 5 | 222 | 1,422 | 3.78 | | | |
| | 6 | 189 | 1,173 | 2.37 | | | |

*Notes: T = treated sample size. C = comparison sample size. te = estimated treatment effect.; % = treatment effect expressed as a percentage (decimal form). Agg % = aggregate percentage change. Respectively, "***", "**", and "*" denote statistical significance at 1%, 5%, and 10% levels. Sample sizes are randomly rounded in accordance with Statistics NZ requirements.*

Figure 1: Impacts of Expansion support on export sales




*Notes: Zero-rated GST sales are employed as a proxy for export sales. Industries where the main products are GST-exempt (e.g., fine metals) are excluded. Dollar values are adjusted to June 2025 $-values (real terms).*

### 4.5.1 Strong positive effects on export sales and value added

Alongside the summary table, we graph the estimated impacts for each outcome to illustrate the nature and extent of specific policy effects.

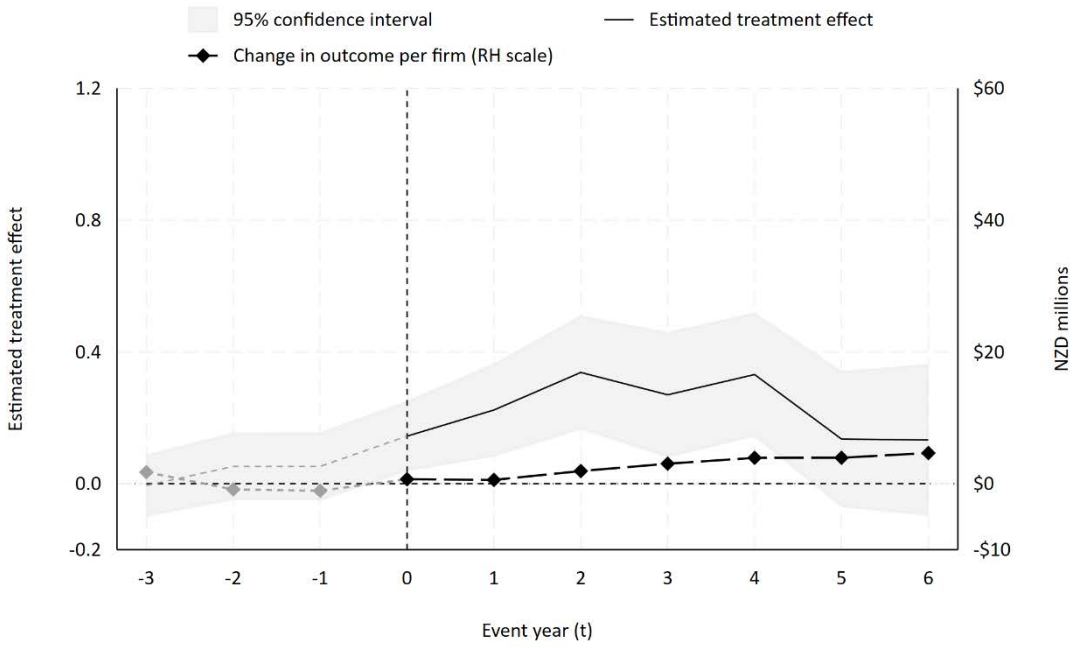
*Export sales*

Figure 1 maps the estimated effects of Expansion support on export sales (goods and services). The upper solid line shows the estimated treatment effect. In the year of entry into Expansion support (year 0), the estimated treatment effect is 0.18. This equates to an average positive change of around 19% that would not have been achieved in the absence of support. The treatment effect peaks in year 4, with the associated treatment effect of 0.65 equating to a positive change of 92%.

Estimated treatment effects are statistically significant at the 5 percent level from 0 to 6 years after first support, and at the 1 percent level from 1 to 6 years. The shaded area around the estimated treatment effect in Figure 1 shows the 95 percent confidence interval, which reflects the degree of statistical uncertainty around the estimate in each year. A 95 percent confidence interval means that if the same analysis were repeated many times using different samples drawn from the same population, the estimated interval would contain the true effect in about 95 percent of cases. When the interval crosses the horizontal zero line, the estimate is not statistically significant. As well as greater uncertainty that the true effect differs from zero, wider confidence intervals can also reflect less precision due to smaller estimation samples in later years of the analysis window.

To the left of the vertical line in Figure 1 at year 0, we provide estimates of pre-treatment placebo effects. Estimated pre-treatment effects are generally small. Although confidence intervals do not indicate statistical significance at the 5 percent level, coefficients are statistically significant at a lower

Figure 2: Impacts of Expansion support on gross value added (GVA)




*Notes: Dollar values are adjusted to June 2025 $-values (real terms).*

(10%) threshold in years -2 and -1. This suggests that small pre-treatment outcome differences may be present. Some of this may reflect timing differences across measurement sources. Pre-treatment outcome differences are small relative to observed post-treatment effects.

In Figure 1, the long-dash marked line reports the per firm change in real export sales as a result of Expansion support. The dollar change in export sales is negligible in years 0 and 1, suggesting that positive changes in export sales from Expansion support were concentrated among firms with small levels of export sales in absolute dollar terms. Across the seven-year analysis window, annual export sales were raised as a result of Expansion support by an average of $11.1m per supported firm per year, relative to the absence of support. In the estimation sample, the largest aggregate annual increases per firm were apparent four, five and six years after support.

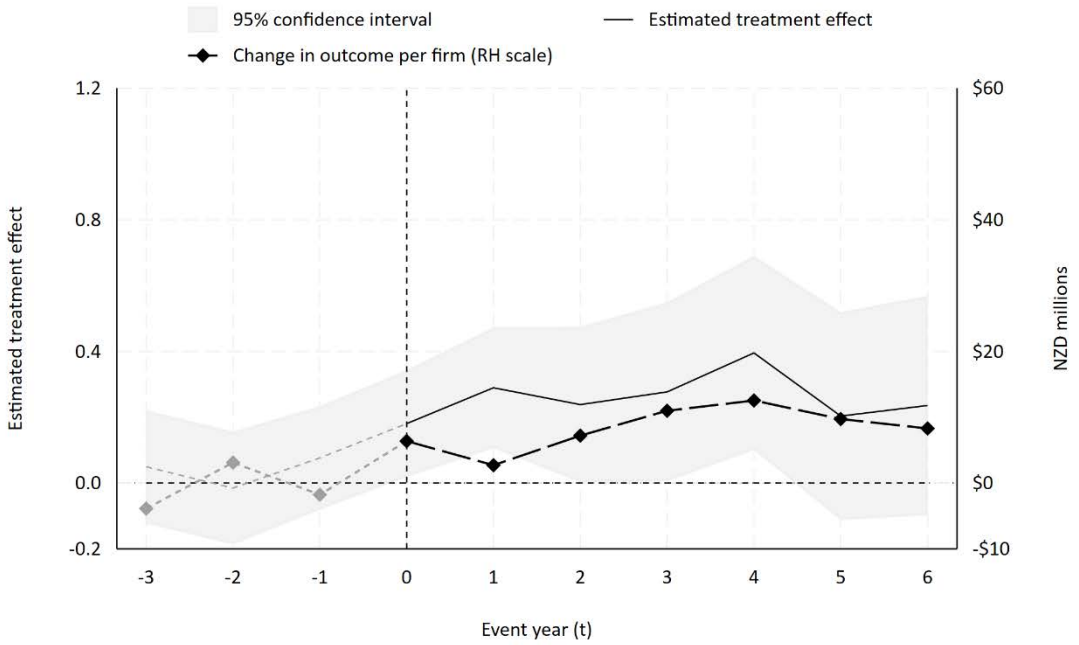
### *Value added*

Figure 2 follows the same structure as Figure 1, documenting the impact of Expansion support on gross value added. In the year of entry into Expansion support, the estimated treatment effect is 0.14. This equates to a positive change of around 16% in GVA in the year of first support that would not have been achieved in the absence of support. The treatment effect increases in subsequent years, peaking at 0.34 (around 40%) two years after support and remaining positive thereafter.

Estimated treatment effects for GVA are statistically significant at the 5 percent level (also at one percent) from year 0 through to year 4 after first receiving support. Effects for the years prior to Expansion support, suggest that pre-treatment outcome differences are reasonably well accounted for (small estimates and confidence intervals that cross zero).

As with export sales, the per-firm change in real GVA as a result of Expansion support is modest in years 0 and 1. This suggests that the initial positive treatment effects may reflect increases that

Figure 3: Impacts of Expansion support on export sales of goods




*Notes: Overseas merchandise sales capture the total 'free on board' value of exported goods at the point they are loaded onto the international carrier in New Zealand. Dollar values are adjusted to June 2025 $-values (real terms).*

are concentrated among firms with relatively low value added. Across the seven-year window, GVA is raised by an average of $2.7m per supported firm per year relative to the absence of support.

The largest aggregate increases per firm occur four to six years after support. In later years, the per firm change becomes larger and the estimated treatment effect smaller. This suggests a prevalence of proportionately smaller changes from firms with larger GVA in later years.

Due to trade-offs in specifying a functional form for value added, the estimates are based on firms with positive pre- and post-support GVA. This comprises most, but not all, supported and comparison firms. Importantly, firms with positive pre- and post-support GVA represent a larger share of total pre-grant sales than non-value adding firms. We account for this when aggregating policy impacts in Section 5.1.

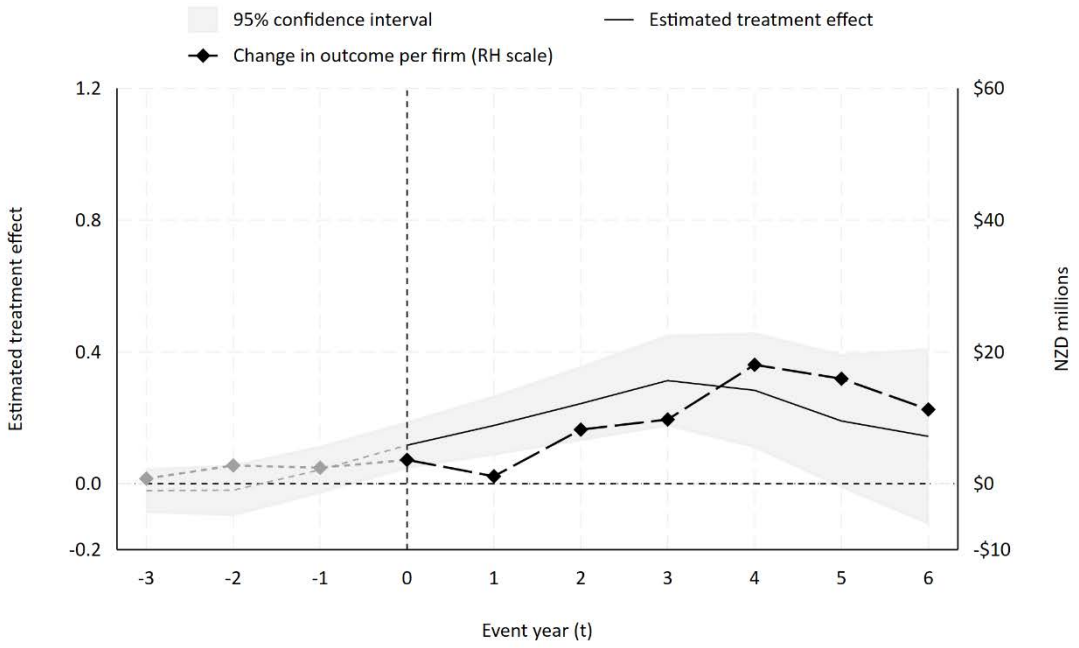
### 4.5.2 Positive effects on other internationalisation and firm performance outcomes

*Export sales of goods*

Export sales of goods are measured using merchandise trade data from the NZ Customs Service. In the year of entry into Expansion support, the estimated treatment effect is 0.18. This implies that supported firms experienced an increase in goods exports of around 20% relative to what would have occurred without support. As Figure 3 shows, the treatment effect increases in the following year to 0.29 (around 34%), before peaking at 0.40 (around 48%) four years after support. Estimated treatment effects are statistically significant at the 5 percent level in years 0 to 4 after initial support.

The per-firm change in real goods exports from Expansion support is positive in the first year of support and increases further from year 2. Across the seven-year window, export sales of goods

Figure 4: Impacts of Expansion support on total sales




*Notes: Dollar values are adjusted to June 2025 $-values (real terms).*

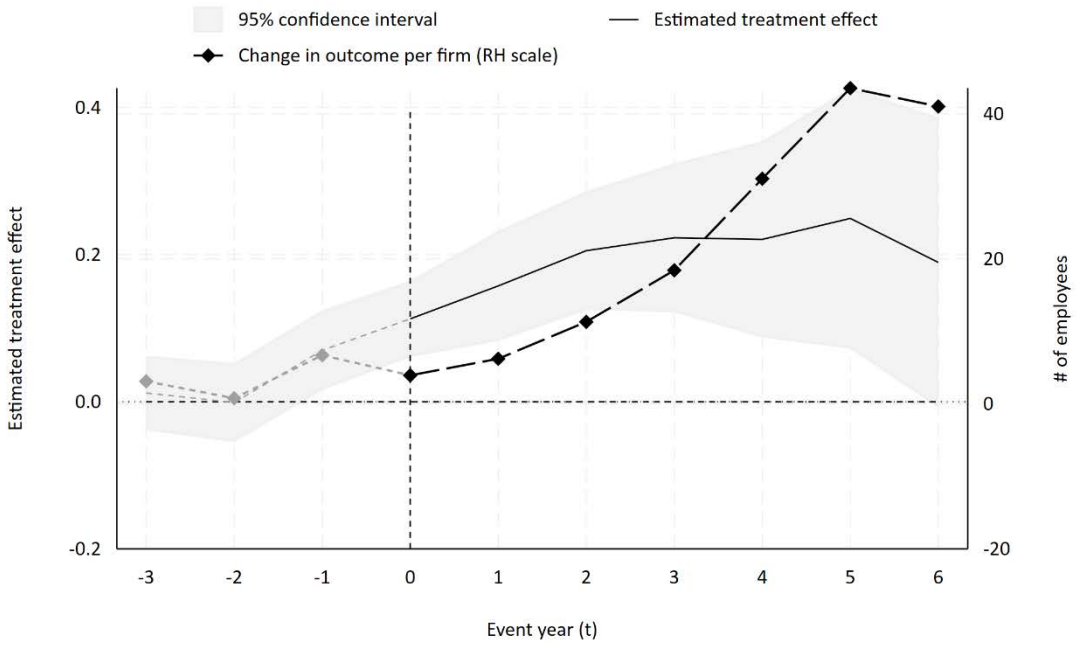
increased by an average of around $8.3m per supported firm per year as a result of Expansion support.

### *Total sales*

We also observe positive treatment effects on supported firms' total sales. In the year that firms first receive Expansion support, the estimated treatment effect is around 0.12 (or 12%), relative to what would have occurred without support. Figure 4 illustrates how treatment effects are more positive in subsequent years, reaching 0.24 (around 28%) two years after support and peaking at 0.31 (around 37%) three years after support. Estimated treatment effects are statistically significant at the 5 percent level (and at 1 percent) from years 0 to 4 after first receiving support.

The per-firm change in real total sales increases steeply between one and four years after support. Across the seven-year window, total sales increased by an average of around $9.7m per supported firm per year as a result of Expansion support. This is slightly less than the estimated change of $11.1m per supported firm per year in export sales (goods and services). This is interesting because both estimates are defined relative to the counterfactual for that individual outcome. The estimated difference between supported and comparison firms' total sales may be less than for export sales if, for example, comparison firms focus more heavily on domestic sales. The difference is also well within the range of both confidence intervals and may be reflecting some statistical uncertainty in the estimates.

Figure 5: Impacts of Expansion support on employment




*Notes: Employment is a count of full-time equivalent employees ("fte") and working proprietors ("wp").*

### *Employment*

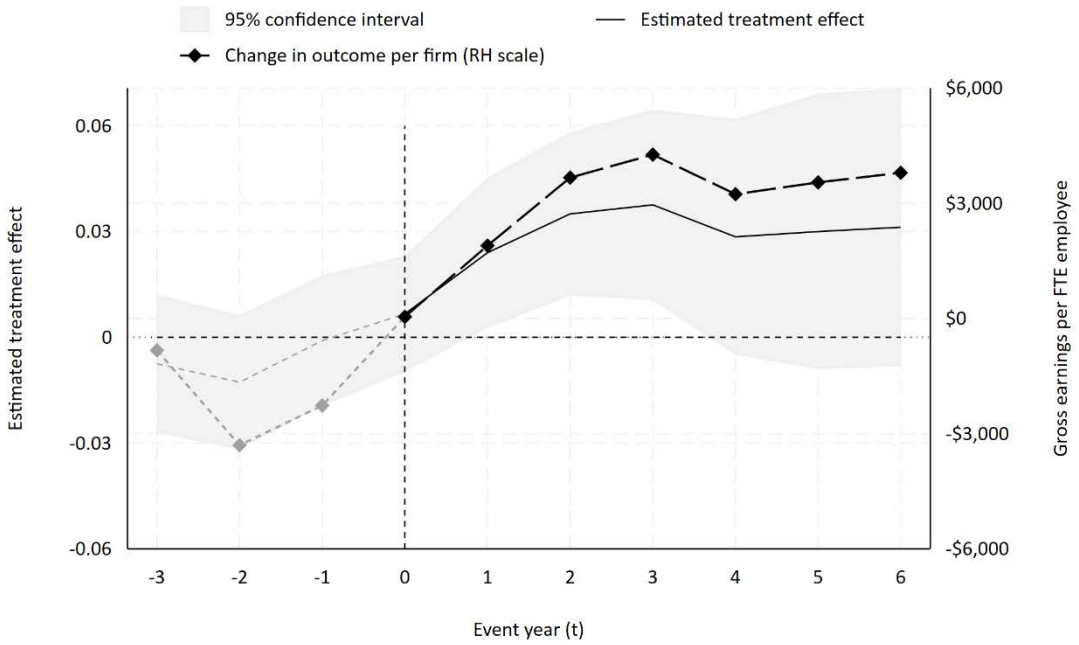
Figure 5 summarises the impact of Expansion support on employment, measured as the number of full-time equivalent employees (including working proprietors). In the year firms first receive Expansion support, the estimated treatment effect is 0.11, corresponding to an increase in employment of around 12% relative to what would have occurred without support. The estimated impact increases in subsequent years, reaching 0.25 (around 28%) five years after support. Estimates are statistically significant at the 5 percent level from years 0 to 5 after first receiving support.

The per-firm change in employment is small in years 0 and 1, becoming strongly positive in later years. Across the seven-year period, employment increased by an average of around 22.2 additional full-time equivalent workers per supported firm per year as a result of Expansion support.

### *Wages*

Figure 6 reports changes in wage levels (gross earnings per FTE employee) as a result of Expansion support. The estimated treatment effect increases from 0.01 (around 1%) in the year firms first receive support, peaking at 0.04 (around 4%) 2 and 3 years after support. Estimated treatment effects are statistically significant from years 1 to 3 after support. Across the seven-year window, gross earnings rates increased by an average of around $2,900 per FTE employee per year among supported firms, relative to what would have occurred without Expansion support.

Figure 6: Impacts of Expansion support on wages



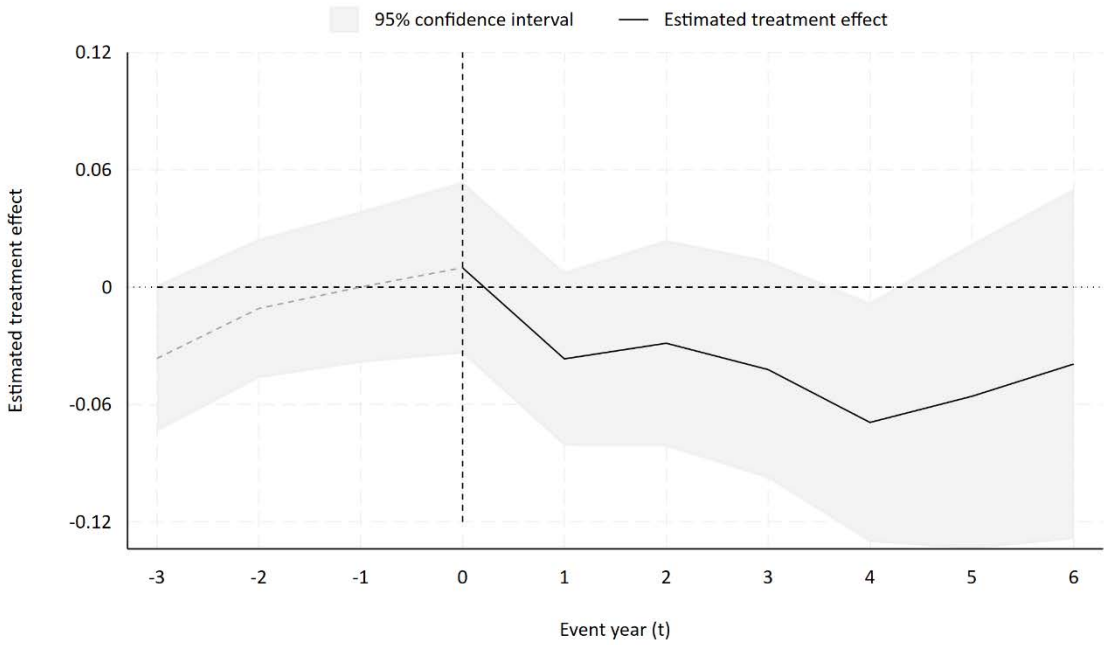

*Notes: Gross earnings are not measured in firms with less than one FTE employee. Dollar values are adjusted to June 2025 $-values (real terms).*

### *Multifactor productivity*

Figure 7 summarises estimated treatment effects for multifactor productivity (mfp). The estimates are generally close to zero, with a tendency toward small negative effects from year 1 onwards. Effects are statistically uncertain in most years. Aside from a statistically significant negative estimate in year 4, the results provide only limited and inconclusive evidence of an effect on productivity. While it would be possible in principle to translate any productivity effect into per-firm dollar terms using total sales as a base, the available evidence is not sufficiently precise or consistent to support such an interpretation.

Mfp can be a useful indicator of relative performance, but it is measured as the residual from a separate regression equation and can be a noisy measure. Short-term movements in measured productivity may not reflect underlying (in)efficiency. Growing firms may appear less productive from one year to the next, as increases in labour, capital, and materials often temporarily outstrip increases in output.

Figure 7: Impacts of Expansion support on multifactor productivity




*Notes: Multifactor productivity is an index of relative productivity with a mean of zero. See Appendix B.*

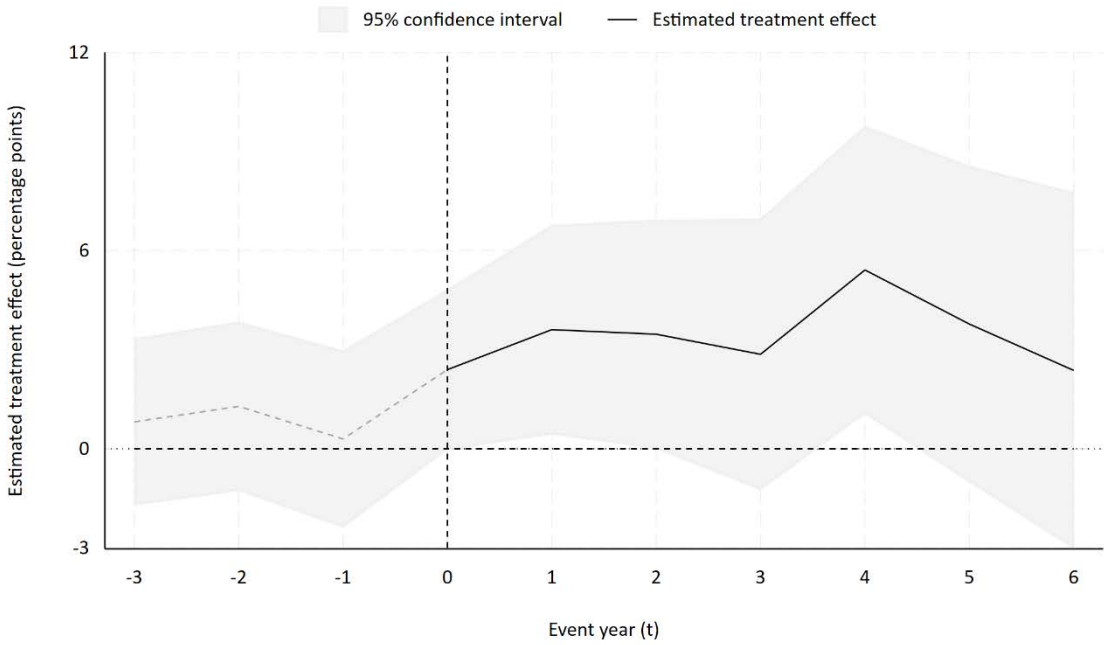
### *Export intensity*

There is evidence that Expansion support increases export intensity (exports as a proportion of overall sales). Positive effects are observed from the year of support onwards and are statistically significant effects at the 5 percent level in years 1, 2, and 4. Export intensity reflects a firm's reliance on export sales, without necessarily indicating overall performance. Unlike the previous outcomes, export intensity is measured directly as a percentage rather than in logs, so the estimated coefficients can be interpreted as percentage point changes. Figure 8 shows that in the year firms first receive Expansion support, support is associated with an increase in export intensity of around 2.4 percentage points relative to what would have occurred without support. Estimated effects remain positive in subsequent years, ranging between around 2 and 5 percentage points in the years following support.

## 4.6 Subgroup analysis

The following subsection assesses how the estimated effects vary depending on the timing of support and on firm characteristics (pre-support). We examine differences in treatment effect patterns between subgroups across both primary outcomes: export sales and value added.

Figure 8: Impacts of Expansion support on export intensity




*Notes: Export intensity measures the percentage of a firm's total sales that come from exports. We use self-reported data from the Business Operations Survey (BOS), supplemented by GST returns where BOS data is unavailable.*

For each outcome, treatment effects are estimated separately for every subgroup across years from first support. This means that each outcome-subgroup combination is analysed using its own estimation sample and counterfactual comparison group. Estimated effects represent the difference between treated firms in that subgroup and the predicted outcomes those firms would have experienced in the absence of treatment. The reported estimates should therefore be interpreted as within-subgroup treatment effects relative to that subgroup's counterfactual, rather than as direct comparisons of treatment effects across different subgroups.

Most subgroup categories in our analysis are based on continuous variables (sales, employment, export intensity and export sales), and we attempt to create an approximate split of treated firms across three brackets (low-medium-high). We do this by defining brackets using round values near the 40$^{th}$ and 70$^{th}$ percentile of values for treated firms.

Table 7: Treatment effects disaggregated by subgroup

| Out | Yr | T | C | te | % | T | C | te | % |
|---|---|---|---|---|---|---|---|---|---|
| a. | | First support, 2010-2016 | | | | First support, 2017-2022 | | | |
| Exp. sales | 0 | 162 | 549 | 0.07 | 0.07 | 108 | 2,262 | 0.33** | 0.39 |
| Exp. sales | 1 | 162 | 546 | 0.21* | 0.23 | 108 | 2,193 | 0.53*** | 0.70 |
| Exp. sales | 2 | 156 | 537 | 0.34** | 0.40 | 105 | 2,136 | 0.60*** | 0.83 |
| Exp. sales | 3 | 159 | 525 | 0.43** | 0.53 | 99 | 2,085 | 0.72*** | 1.05 |
| Exp. sales | 4 | 156 | 501 | 0.55*** | 0.74 | 84 | 1,425 | 0.68*** | 0.98 |
| Exp. sales | 5 | 150 | 483 | 0.50** | 0.65 | | | | |
| Exp. sales | 6 | 144 | 471 | 0.56* | 0.75 | | | | |
| GVA | 0 | 162 | 549 | 0.05 | 0.05 | 108 | 2,295 | 0.34*** | 0.41 |
| GVA | 1 | 159 | 540 | 0.07 | 0.07 | 105 | 2,232 | 0.45*** | 0.57 |
| GVA | 2 | 159 | 534 | 0.29** | 0.34 | 102 | 2,181 | 0.36*** | 0.43 |
| GVA | 3 | 162 | 522 | 0.13 | 0.14 | 99 | 2,145 | 0.41*** | 0.50 |
| GVA | 4 | 156 | 504 | 0.19 | 0.21 | 81 | 1,467 | 0.59*** | 0.81 |
| GVA | 5 | 153 | 486 | 0.05 | 0.05 | | | | |
| GVA | 6 | 144 | 477 | 0.08 | 0.09 | | | | |
| b. | | Goods industries | | | | Service industries | | | |
| Exp. sales | 0 | 147 | 1,380 | 0.23*** | 0.26 | 123 | 1,302 | 0.08 | 0.09 |
| Exp. sales | 1 | 144 | 1,350 | 0.32*** | 0.38 | 120 | 1,263 | 0.38** | 0.47 |
| Exp. sales | 2 | 141 | 1,332 | 0.45*** | 0.57 | 117 | 1,221 | 0.43** | 0.54 |
| Exp. sales | 3 | 141 | 1,305 | 0.60*** | 0.83 | 114 | 1,191 | 0.52** | 0.69 |
| Exp. sales | 4 | 135 | 993 | 0.66*** | 0.94 | 102 | 843 | 0.49* | 0.63 |
| Exp. sales | 5 | 123 | 714 | 0.54*** | 0.71 | 90 | 555 | 0.42 | 0.52 |
| Exp. sales | 6 | 108 | 567 | 0.51** | 0.67 | 72 | 429 | 0.63 | 0.88 |
| GVA | 0 | 141 | 1,374 | 0.17** | 0.18 | 120 | 1,350 | 0.21** | 0.23 |
| GVA | 1 | 135 | 1,350 | 0.28*** | 0.32 | 123 | 1,311 | 0.16 | 0.18 |
| GVA | 2 | 138 | 1,317 | 0.39*** | 0.48 | 117 | 1,284 | 0.26* | 0.30 |
| GVA | 3 | 141 | 1,290 | 0.25** | 0.29 | 117 | 1,260 | 0.30** | 0.35 |
| GVA | 4 | 129 | 993 | 0.38*** | 0.46 | 105 | 888 | 0.34** | 0.41 |
| GVA | 5 | 123 | 720 | 0.29** | 0.34 | 90 | 573 | 0.01 | 0.01 |
| GVA | 6 | 108 | 579 | 0.22 | 0.24 | 72 | 441 | 0.03 | 0.03 |

Table 7 (continued): Treatment effects disaggregated by subgroup

| Out | Yr | T | C | te | % | T | C | te | % | T | C | te | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **c.** | | **Prior Sales <$4.5m** | | | | **Prior Sales $4.5m–<$17m** | | | | **Prior Sales >$17m** | | | |
| Exp. sales | 0 | 81 | 1,023 | 0.32 | 0.38 | 96 | 855 | 0.18 | 0.20 | 96 | 933 | 0.01 | 0.01 |
| Exp. sales | 1 | 78 | 981 | 0.75*** | 1.12 | 96 | 831 | 0.23 | 0.26 | 96 | 921 | 0.03 | 0.03 |
| Exp. sales | 2 | 78 | 960 | 0.78*** | 1.17 | 90 | 801 | 0.27 | 0.31 | 96 | 909 | 0.18 | 0.20 |
| Exp. sales | 3 | 75 | 927 | 0.92*** | 1.50 | 87 | 783 | 0.29 | 0.34 | 96 | 903 | 0.26* | 0.29 |
| Exp. sales | 4 | 69 | 627 | 0.68* | 0.98 | 81 | 564 | 0.42** | 0.52 | 93 | 735 | 0.40** | 0.49 |
| Exp. sales | 5 | 54 | 369 | 0.40 | 0.50 | 72 | 378 | 0.46** | 0.59 | 84 | 585 | 0.30 | 0.35 |
| Exp. sales | 6 | 45 | 279 | 0.63 | 0.87 | 66 | 285 | 0.15 | 0.17 | 72 | 486 | 0.42* | 0.52 |
| GVA | 0 | 81 | 1,041 | 0.48*** | 0.62 | 96 | 882 | -0.05 | -0.05 | 93 | 921 | 0.02 | 0.02 |
| GVA | 1 | 84 | 1,005 | 0.37** | 0.45 | 87 | 855 | 0.03 | 0.03 | 90 | 912 | 0.05 | 0.05 |
| GVA | 2 | 75 | 981 | 0.56*** | 0.76 | 93 | 831 | 0.00 | 0.00 | 96 | 903 | 0.09 | 0.10 |
| GVA | 3 | 78 | 954 | 0.46*** | 0.58 | 90 | 822 | -0.07 | -0.06 | 96 | 891 | 0.08 | 0.08 |
| GVA | 4 | 63 | 645 | 0.62*** | 0.87 | 81 | 603 | 0.10 | 0.11 | 90 | 723 | 0.22 | 0.25 |
| GVA | 5 | 54 | 381 | 0.28 | 0.32 | 75 | 411 | 0.19 | 0.20 | 84 | 570 | -0.02 | -0.02 |
| GVA | 6 | 42 | 294 | 0.62** | 0.87 | 66 | 315 | -0.15 | -0.14 | 72 | 477 | 0.11 | 0.12 |
| **d.** | | **Prior Employment <15** | | | | **Prior Employment 15–<42** | | | | **Prior Employment >42** | | | |
| Exp. sales | 0 | 84 | 1,140 | 0.31* | 0.37 | 90 | 789 | 0.26* | 0.30 | 93 | 879 | -0.02 | -0.02 |
| Exp. sales | 1 | 84 | 1,110 | 0.65*** | 0.92 | 93 | 759 | 0.34** | 0.41 | 90 | 867 | 0.08 | 0.09 |
| Exp. sales | 2 | 84 | 1,083 | 0.59*** | 0.81 | 87 | 732 | 0.42** | 0.52 | 90 | 858 | 0.31*** | 0.36 |
| Exp. sales | 3 | 84 | 1,056 | 0.71*** | 1.03 | 84 | 702 | 0.59*** | 0.80 | 90 | 849 | 0.41*** | 0.50 |
| Exp. sales | 4 | 72 | 720 | 0.61* | 0.85 | 84 | 516 | 0.60** | 0.82 | 84 | 687 | 0.51*** | 0.67 |
| Exp. sales | 5 | 63 | 435 | 0.28 | 0.33 | 72 | 363 | 0.59*** | 0.80 | 81 | 534 | 0.59*** | 0.80 |
| Exp. sales | 6 | 51 | 336 | 0.38 | 0.46 | 60 | 276 | 0.42 | 0.53 | 72 | 441 | 0.63*** | 0.87 |
| GVA | 0 | 87 | 1,146 | 0.38*** | 0.46 | 90 | 810 | 0.12 | 0.13 | 90 | 888 | -0.02 | -0.02 |
| GVA | 1 | 84 | 1,104 | 0.35** | 0.42 | 84 | 789 | 0.26*** | 0.29 | 90 | 879 | -0.07 | -0.06 |
| GVA | 2 | 84 | 1,074 | 0.47*** | 0.60 | 84 | 768 | 0.25* | 0.28 | 93 | 870 | 0.05 | 0.05 |
| GVA | 3 | 84 | 1,050 | 0.37** | 0.44 | 84 | 753 | 0.26 | 0.30 | 96 | 861 | 0.06 | 0.06 |
| GVA | 4 | 69 | 720 | 0.63*** | 0.88 | 81 | 558 | 0.27* | 0.31 | 84 | 696 | 0.25* | 0.28 |
| GVA | 5 | 63 | 441 | 0.24 | 0.27 | 72 | 387 | 0.10 | 0.10 | 81 | 537 | 0.23 | 0.26 |
| GVA | 6 | 51 | 342 | 0.28 | 0.32 | 60 | 294 | 0.14 | 0.15 | 72 | 444 | 0.22 | 0.25 |

Table 7 (continued): Treatment effects disaggregated by subgroup

| Out | Yr | T | C | te | % | T | C | te | % | T | C | te | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **e.** | | **Prior Export intensity <30%** | | | | **Prior Export intensity 30%–<75%** | | | | **Prior Export intensity >75%** | | | |
| Exp. sales | 0 | 72 | 1,248 | -0.06 | -0.05 | 90 | 753 | 0.29*** | 0.33 | 108 | 807 | 0.17** | 0.19 |
| Exp. sales | 1 | 66 | 1,212 | 0.41 | 0.50 | 90 | 732 | 0.35*** | 0.42 | 108 | 792 | 0.29** | 0.34 |
| Exp. sales | 2 | 66 | 1,191 | 0.48** | 0.62 | 87 | 714 | 0.35** | 0.42 | 108 | 765 | 0.55*** | 0.73 |
| Exp. sales | 3 | 63 | 1,161 | 0.59** | 0.81 | 84 | 699 | 0.44*** | 0.55 | 108 | 747 | 0.72*** | 1.05 |
| Exp. sales | 4 | 57 | 858 | 0.71** | 1.04 | 81 | 513 | 0.35* | 0.41 | 99 | 555 | 0.74*** | 1.09 |
| Exp. sales | 5 | 48 | 579 | 0.72** | 1.05 | 72 | 354 | 0.39** | 0.47 | 93 | 402 | 0.50** | 0.65 |
| Exp. sales | 6 | 39 | 459 | 0.76* | 1.14 | 60 | 279 | 0.32 | 0.37 | 84 | 312 | 0.46 | 0.59 |
| GVA | 0 | 75 | 1,368 | 0.19** | 0.21 | 87 | 705 | 0.18 | 0.20 | 105 | 765 | 0.21** | 0.24 |
| GVA | 1 | 75 | 1,344 | 0.14 | 0.15 | 87 | 684 | 0.23** | 0.26 | 99 | 747 | 0.40*** | 0.50 |
| GVA | 2 | 72 | 1,329 | 0.20* | 0.22 | 84 | 669 | 0.25** | 0.28 | 105 | 717 | 0.51*** | 0.67 |
| GVA | 3 | 72 | 1,305 | 0.18 | 0.20 | 84 | 660 | 0.17 | 0.18 | 108 | 699 | 0.47*** | 0.60 |
| GVA | 4 | 60 | 972 | 0.34*** | 0.40 | 78 | 486 | 0.36** | 0.44 | 99 | 513 | 0.61*** | 0.85 |
| GVA | 5 | 51 | 657 | 0.29* | 0.34 | 72 | 333 | 0.28 | 0.32 | 90 | 372 | 0.22 | 0.24 |
| GVA | 6 | 42 | 531 | 0.05 | 0.05 | 57 | 255 | 0.28 | 0.33 | 81 | 297 | 0.44* | 0.55 |
| **f.** | | **Prior Export sales <$2m** | | | | **Prior Export sales $2m–<$9m** | | | | **Prior Export sales >$9m** | | | |
| Exp. sales | 0 | 84 | 1,305 | 0.21 | 0.24 | 96 | 759 | 0.35*** | 0.42 | 90 | 750 | 0.01 | 0.01 |
| Exp. sales | 1 | 81 | 1,260 | 0.62*** | 0.87 | 96 | 741 | 0.42*** | 0.53 | 90 | 738 | 0.05 | 0.05 |
| Exp. sales | 2 | 81 | 1,230 | 0.54** | 0.72 | 93 | 717 | 0.43*** | 0.54 | 90 | 729 | 0.35*** | 0.42 |
| Exp. sales | 3 | 81 | 1,191 | 0.59** | 0.81 | 90 | 699 | 0.54*** | 0.71 | 90 | 717 | 0.44** | 0.55 |
| Exp. sales | 4 | 69 | 822 | 0.38 | 0.46 | 84 | 525 | 0.66*** | 0.93 | 87 | 576 | 0.54** | 0.71 |
| Exp. sales | 5 | 54 | 507 | 0.37 | 0.45 | 78 | 375 | 0.53*** | 0.70 | 81 | 450 | 0.51** | 0.67 |
| Exp. sales | 6 | 48 | 390 | 0.22 | 0.24 | 66 | 300 | 0.39* | 0.47 | 72 | 363 | 0.58** | 0.79 |
| GVA | 0 | 90 | 1,392 | 0.23** | 0.25 | 93 | 723 | 0.32** | 0.37 | 87 | 723 | 0.08 | 0.08 |
| GVA | 1 | 90 | 1,359 | 0.15 | 0.17 | 90 | 705 | 0.45*** | 0.57 | 81 | 711 | 0.05 | 0.05 |
| GVA | 2 | 84 | 1,338 | 0.27* | 0.31 | 90 | 681 | 0.54*** | 0.71 | 87 | 696 | 0.18 | 0.20 |
| GVA | 3 | 84 | 1,308 | 0.17 | 0.19 | 90 | 672 | 0.32** | 0.38 | 87 | 681 | 0.25* | 0.29 |
| GVA | 4 | 66 | 921 | 0.24 | 0.28 | 84 | 510 | 0.68*** | 0.97 | 84 | 546 | 0.34* | 0.41 |
| GVA | 5 | 57 | 573 | 0.10 | 0.10 | 78 | 363 | 0.48*** | 0.62 | 81 | 426 | 0.13 | 0.14 |
| GVA | 6 | 48 | 441 | 0.22 | 0.24 | 63 | 294 | 0.21 | 0.23 | 69 | 351 | 0.36* | 0.44 |

Table 7 (continued): Treatment effects disaggregated by subgroup

| Out | Yr | T | C | te | % | T | C | te | % |
|---|---|---|---|---|---|---|---|---|---|
| g. | | High prior export growth | | | | Not high prior export growth | | | |
| Exp. sales | 0 | 147 | 1,713 | 0.14 | 0.15 | 123 | 1,095 | 0.16* | 0.17 |
| Exp. sales | 1 | 147 | 1,671 | 0.41*** | 0.50 | 120 | 1,065 | 0.19 | 0.21 |
| Exp. sales | 2 | 144 | 1,641 | 0.47*** | 0.60 | 117 | 1,035 | 0.31** | 0.37 |
| Exp. sales | 3 | 141 | 1,605 | 0.51*** | 0.66 | 117 | 1,002 | 0.52*** | 0.68 |
| Exp. sales | 4 | 135 | 1,164 | 0.63*** | 0.88 | 102 | 759 | 0.39* | 0.47 |
| Exp. sales | 5 | 123 | 810 | 0.59*** | 0.81 | 90 | 522 | 0.16 | 0.18 |
| Exp. sales | 6 | 108 | 636 | 0.52** | 0.68 | 75 | 417 | 0.11 | 0.12 |
| GVA | 0 | 147 | 1,782 | 0.19*** | 0.21 | 123 | 1,062 | 0.15 | 0.16 |
| GVA | 1 | 147 | 1,746 | 0.14* | 0.15 | 114 | 1,026 | 0.24** | 0.27 |
| GVA | 2 | 144 | 1,719 | 0.21*** | 0.24 | 117 | 996 | 0.30** | 0.35 |
| GVA | 3 | 147 | 1,692 | 0.08 | 0.08 | 114 | 975 | 0.36*** | 0.43 |
| GVA | 4 | 135 | 1,233 | 0.36*** | 0.43 | 99 | 744 | 0.29* | 0.33 |
| GVA | 5 | 129 | 855 | 0.19 | 0.20 | 84 | 507 | -0.04 | -0.04 |
| GVA | 6 | 108 | 672 | 0.31** | 0.36 | 72 | 411 | -0.17 | -0.16 |

Notes: Out = outcome. Yr = year. T = treated sample size. C = comparison sample size. te = estimated treatment effect; % = treatment effect expressed as a percentage (decimal form). Respectively, "***", "**", and "*" denote statistical significance at the 1%, 5%, and 10% levels. Sample sizes are randomly rounded in accordance with Statistics NZ confidentiality requirements.

Table 8: Contribution to aggregate impacts by pre-support sales

| Outcome | Pre-Support Sales | Yr 0 % agg. | [% firms] | Yr 1 % agg. | [% firms] | Yr 2 % agg. | [% firms] | Yr 3 % agg. | [% firms] | Yr 4 % agg. | [% firms] | Yr 5 % agg. | [% firms] | Yr 6 % agg. | [% firms] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Export sales | <$4.5m | 62% | [30%] | -55% | [30%] | 9% | [29%] | 9% | [29%] | 2% | [27%] | 0% | [25%] | 1% | [24%] |
| Export sales | $4.5m–<$17m | 121% | [35%] | -56% | [35%] | 12% | [34%] | 14% | [33%] | 5% | [34%] | 5% | [34%] | 4% | [36%] |
| Export sales | >$17m | -83% | [35%] | 211% | [35%] | 79% | [36%] | 77% | [38%] | 92% | [39%] | 95% | [40%] | 95% | [40%] |
| Gross value added | <$4.5m | 22% | [31%] | 54% | [32%] | 24% | [29%] | 15% | [30%] | 11% | [27%] | 2% | [25%] | 0% | [25%] |
| Gross value added | $4.5m–<$17m | 46% | [34%] | 73% | [33%] | 31% | [34%] | 17% | [33%] | 22% | [35%] | 11% | [35%] | 9% | [37%] |
| Gross value added | >$17m | 32% | [35%] | -27% | [35%] | 45% | [36%] | 69% | [37%] | 67% | [38%] | 87% | [40%] | 90% | [39%] |

Subgroup samples are considerably smaller than those used in the full analysis, so it was necessary to use a more parsimonious set of covariates in most analyses. In smaller samples, large numbers of covariates can quickly exhaust the available degrees of freedom and reduce the model's ability to meaningfully distinguish between treated and untreated firms. We were able to preserve the full specification when examining prior Validation support. However, the other analyses rely on a reduced set of covariates and a pooled selection process. [15] We tested each parsimonious specification using the full sample and obtained broadly similar estimates, suggesting that the reduced set of variables did not materially bias the results. Even so, and while we believe that qualitative differences between subgroups are instructive (i.e., obvious differences in magnitude and statistical significance), we prefer not to place undue emphasis on the precise magnitude of specific effects as additional covariates would ideally have been included if sample sizes permitted.

Average per firm (dollar) impacts are not reported for subgroups because the smaller samples make these estimates less stable and less reliable. This may be true even where the underlying treatment effect (which reflects an estimated average relationship across firms) remains reasonably stable. Smaller subgroup samples mean the estimates are more sensitive to the outcomes of a small number of firms, which is particularly problematic with an unbalanced panel analysis. Per-firm impacts effectively weight results by firm scale, meaning that a few large or fast-growing firms can exert a disproportionate influence on the estimated average impact per firm. For most subgroups, the smaller samples also reduce precision in later event years, which tends to produce larger standard errors and higher p-values (statistical significance is harder to detect).

Table 7 documents the treatment effects for seven sets of subgroups (panels a–g). The patterns within and across outcomes are suggestive of several interesting insights which we discuss below.

### *Time period*

Relative to those first supported in 2010-2016, panel "a" of Table 7 shows that positive changes as a result of Expansion support are more evident among firms first supported in 2017-2022. The difference is substantial in effects on GVA, but also apparent in effects on export sales. These differences are suggestive of stronger impacts for more recent cohorts, but should be interpreted with caution, as each subgroup is analysed relative to its own counterfactual and comparison group. The counterfactual outcome for the subgroup first supported in 2010-2016 also relies on a smaller number of comparison observations and is likely to be less precisely estimated, due to the smaller size of the Focus segment at that time and historic data quality issues.

### *Industries*

In panel "b" of Table 7, increases in export sales due to Expansion support appear somewhat larger among firms in goods producing industries. The increases are also statistically different from zero on a more consistent basis, although the estimation sample of supported goods firms is slightly larger than supported service firms. The magnitude of positive treatment effects on GVA is similar in goods and services firms, at least until 4 years after first support. The statistical uncertainty associated with positive treatment effects is less among goods producing firms.

### *Firm size*

When size is defined by recent prior sales (panel "c" of Table 7), small firms are more responsive to Expansion support. Increases in export sales and GVA from Expansion support are generally larger

[15] For most models, it was necessary to use "policy phase" effects rather annual time effects. It was also necessary to omit the foreign ownership and leverage variables, and replace more precise industry categories with a simple "goods or services" indicator (except in panel "b" where industry is used in the subgroup definition). We also include only the lagged growth of the outcome variable (instead of including 4+ growth variables as in the main analysis).

and more statistically detectable in firms with low (<$4.5m) pre-grant sales. Panel (c) also suggests that the larger increases emerge sooner for small firms and later for larger firms.

Importantly, we use the phrase "more responsive" to refer to the average proportional change per firm. The contribution to overall policy impacts looks different when changes are expressed in absolute dollar terms. Underneath Table 7, Table 8 shows the contribution to aggregate impacts by size subgroups based on pre-treatment sales. Although small firms are more responsive on average, Table 8 shows how larger firms account for a disproportionate share of aggregate impacts in the years following support.

Returning to Table 7, panel "d" shows that average increases in GVA are generally larger and more statistically detectable in firms with small (<15) pre-grant levels of employment. By contrast, the effects of Expansion support on export sales are similarly positive across all three employment subgroups. As with pre-grant sales, larger increases emerge sooner for small firms and later for larger firms.

### *Export intensity*

In panel "e" of Table 7, strong positive treatment effects are spread across low, medium and high levels of export intensity. Among firms with high (>75%) pre-grant levels of export intensity, positive effects from Expansion support appear large and statistically detectable on a more consistent basis. Relative to low (<30%) and medium (30%-<75%) levels, this difference is more pronounced in effects on GVA than on export sales.

### *Level of export sales*

In panel "f" of Table 7, strong positive effects on export sales are spread across low, medium and high levels of pre-grant export sales. In years immediately following support, positive effects on export sales appear larger among firms with lesser (<$2m) pre-grant export sales. This difference reverses in years 4 to 6 after support, with strong positive treatment effects among the medium ($2m-<$9m) and high (>$9m) pre-grant export sales subgroups. GVA effects are greatest and more statistically detectable among firms with medium pre-grant export sales.

### *Growth of export sales*

We define firms as having "high growth" of export sales if they have a recent annual average growth rate of 20% or greater and achieve a minimum of $50k in export sales in the pre-grant year. Panel "g" of Table 7 suggest that firms with high pre-grant growth in exports experience more positive and statistically detectable effects on export sales from Expansion support. There are positive GVA effects across both subgroups, but with effects persisting more clearly in later years for the high growth subgroup.

### *Prior Validation support*

Not reported in Table 7, we also examine whether the effect of Expansion support was sensitive to whether firms had previously received Validation support. We were curious as to whether some of what appeared to be the effect of Expansion support may instead reflect underlying differences between firms that did and did not receive Validation grants. If differences occurred in the effect of Expansion support when we did and did not control for Validation support, this could suggest that Validation grants generate persistent effects; or that Validation grants provide a signal about firms well-positioned to capitalise on Expansion support.

We estimated the Expansion treatment effect twice, using the full model specification, with an estimation sample of firms first supported in 2017 or later (Validation grants were introduced in 2015). The resulting estimates were effectively identical with and without the prior Validation

covariate, indicating that estimated Expansion effects were not materially influenced by prior Validation support. Dialogue with NZTE policy specialists indicates that validation efforts are commonly an important preparatory step for Expansion projects, regardless of whether these efforts receive a Validation grant.

### 4.7 Additional analysis and robustness checks

The estimates discussed above reflect our preferred implementation of the analytical framework. In deriving these results, we considered various refinements to the covariates used and exploration of alternative approaches to modelling selection and outcomes. Across these iterations, the overall patterns of estimated effects remained broadly consistent and the results presented are representative of the overall patterns of findings.

To assess the sensitivity of results to key design choices, we also ran several robustness checks. This included rerunning our analysis using an alternative measure of GVA sourced from the productivity tables in the LBD (Fabling, 2024; Fabling & Maré, 2015, 2019). In comparison to the main results, the productivity-based measure of GVA generated weaker positive treatment effects. Aggregate effects are similar across both GVA measures.

We also checked the results of the main analysis using a balanced panel over a shorter observation window (years 0–4). A balanced panel, where the same firms are observed in every year of the analysis window, ensures a consistent sample across years but reduces sample sizes because of attrition. The balanced sample estimates were consistent with the main results, suggesting that findings are not impacted by the use of an unbalanced panel.

Lastly, we replaced our measure of export intensity, using Business Operations Survey data where available, with a measure that relied wholly on GST returns. This meant relying on a noisier proxy for export intensity, albeit one that was consistently measured. This alternative specification generated results that were broadly similar, with some slightly more positive effects.

# 5 Returns

The next step involved translating the estimated effects from Section 4 into estimated (firm-level) returns from Expansion grants. Calculating returns involves aggregating the estimated impacts across supported firms, discounting to a common time point, and combining with information on programme costs. We use gross value added (GVA) as the basis for calculating the economic contribution of supported firms to New Zealand GDP. We also report aggregate export sales generated, which offers a useful indicator of the extent of commercial activity generated by Expansion support. Government costs are collated in line with Step 3 of the Treasury Guidelines to Cost-Benefit Analysis (NZ Treasury, 2015). Weighing impacts against directly attributable government costs forms the basis for an estimate of the economic returns from Expansion grants and the net impact of the policy. It focuses on impacts for supported firms and does not capture broader economy-wide interactions, which could either dampen overall impacts through offsetting effects or amplify them through spillovers to other firms.

## 5.1 Aggregate value of Expansion impacts

Calculating the aggregate value of gross value added and export sales entails rating up the "per firm per year" central estimates by the number of firms that received support. As shown in the top row of Table 9, estimated impacts on export sales and gross value added are, respectively, $78.0m and $18.8m per firm across seven years, or $11.1m and $2.7m per firm per year.

While the central estimates of per-firm impacts are clearly positive, there is considerable uncertainty around their precise magnitude because they are based on a sample of firms rather than the full population. We quantify the uncertainty using a resampling approach (bootstrapping) that repeatedly re-estimates the model on slightly different samples of firms. This allows us to observe how much the estimated impacts vary. The bootstrapping approach is used to generate 95% confidence intervals indicating a range within which the population effect is likely to lie. The confidence intervals range from $26.9m to $129.2m for export sales impacts per firm, and from $1.8m to $35.8m for value added impacts. This suggests that per-firm impacts for the population are very unlikely to be zero, but that substantial variation exists in the estimated magnitude of effects.

We also account for differences in the scale of firms included in the estimation sample relative to those not included. Firms outside the estimation sample (with sales data available) have average pre-grant sales equivalent to 73.4% of average pre-grant sales within the estimation sample. This scale difference suggests that applying average estimates to all firms could overstate total impacts. It is necessary to adjust for this difference when aggregating impacts to the full set of supported firms.

Appendix Table 3 (export sales) and Appendix Table 4 (value added) provide a detailed overview of our approach to aggregating the value of Expansion effects. We use the calendar year when support was first received to aggregate impacts within and across years. Specifically, the aggregate value of impacts for each annual cohort and support year comprises (a) the sum of estimated per-firm impacts for firms in the estimation sample in the cohort, plus (b) the sum of scale-adjusted impacts for firms not in the estimation sample. A scale-adjustment of 0.734 is applied consistently to all firms outside the estimation sample.

Using the per-firm effects for each year (reported at the top of both associated Appendix Tables), we can calculate the aggregate impact in a given calendar year. For example, in calendar year 2012, the total (real) value of export sales from Expansion support comprises the $21m generated by 57 recipients in year 0, plus negative $38m generated by 57 firms (from the 2011 entry cohort) in year

Table 9: Aggregate impacts across seven year estimation window

| | | Export sales | Gross value added |
|---|---|---|---|
| Per-firm average (estimated firms) | | $78.0m | $18.8m |
| Bootstrapped confidence interval (95%), lower | | $26.9m | $1.8m |
| Bootstrapped confidence interval (95%), upper | | $129.2m | $35.8m |
| Total (real) impact across all observed recipients | | $32.9b | $7.9b |
| PV | *d=8%* | $49.1b | $12.3b |
| PV | *d=2%* | $36.2b | $8.8b |
| PV | *d=13%* | $64.7b | $16.5b |

*Notes: PV = present (discounted) value. d = discount rate. Dollar values are expressed in June 2025 real terms.*

1, plus $50m generated by 9 recipients (from the 2010 entry cohort) in year 2. [16] Overall, total real export sales generated from Expansion grants closed or closing by 30 June 2024 is $32.9b. The aggregate value of value added impacts is $7.9b.

To get a sense of the overall scale of impacts, it may be instructive to think in terms of annual entry cohorts of Expansion recipients. The studied population of Expansion recipients comprises approximately thirteen entry cohorts of recipients, for which we observe outcomes over a seven-year period. Our aggregate results suggest the average impacts across seven years for each annual cohort from Expansion support is around $2.5b in export sales and $608m in value added.

To account for the opportunity cost of capital and the timing of costs and benefits, we apply a discount rate to convert impacts to present values. The Treasury suggests two public sector discount rates: the social rate of time preference (SRTP) for initiatives with mainly non-commercial costs and benefits, and the social opportunity cost of capital (SOC) for initiatives with mainly commercial cost and benefits (Treasury Circular, 2024/15). Our evaluation defaults to the SOC (8%) rate (NZ Treasury, 2025). Although the costs of government support are primarily non-commercial, benefits/impacts are almost wholly commercial. We include sensitivity analysis using the SRTP (2%) rate. We are also cognisant that market interest rates for business lending in New Zealand are higher (RBNZ, 2026), and that entering new export markets is subject to significant risk. We therefore report an additional sensitivity results using a higher discount rate of 13%. [17]

Using 2025 as the base year, the present (discounted) value (PV) of export sales generated by Expansion support is $49.1b. Using alternative discount rates, the present value of total export sales ranges from $36.2b (*d*=2%) to $64.7b (*d*=13%). The PV of total GVA is $12.3b (*d*=8%). Using alternative discount rates, the PV ranges from $8.8b (*d*=2%) to $16.5b (*d*=13%).

## 5.2 Costs of Expansion support

The government costs of Expansion grants comprise the value of grant funding paid to firms, programme administration costs, and any other directly attributable expenditures associated with

[16] Our study window is defined in terms of grant closure (by 30 June 2024), rather than by calendar time. To aggregate impacts in a manner consistent with observed costs, it is necessary to apply these estimates up to six years after Expansion entry. Calendar year 2029 is 6 years after support for the final cohort of recipients in the population we analysed (firms that entered support in 2023).

[17] This higher rate reflects the approximate market interest rate for small business exporters (Export Finance Australia, 2026). It is also consistent with applying a 4-6% premium to the default SOC (8%) rate, such as the premium charged by the New Zealand Export Credit Loan Guarantee (The Treasury, n.d.).

Table 10: Government costs

| | $ nom. | $ real | + 20% dwt. | PV | | |
|---|---|---|---|---|---|---|
| | | | | *d=8%* | *d=2%* | *d=13%* |
| Grant funds | $277.1m | $346.3m | $415.6m | $721.0m | $475.6m | $1,030.8m |
| Administration costs | $4.9m | $6.1m | $7.3m | $12.5m | $8.4m | $17.8m |
| Software | $2.0m | $2.4m | $2.9m | $3.8m | $3.1m | $4.5m |
| Total costs | $284.1m | $354.9m | $425.8m | $737.4m | $487.1m | $1,053.2m |

*Notes: "20% dwt." refers to the 20% deadweight cost of taxation applied. PV = present (discounted) value. d = discount rate. Real dollar values are expressed in June 2025 $-terms.*

delivering the scheme. We follow the Treasury's Cost Benefit Analysis (2015, pp. 15–16) and apply a 20% deadweight taxation cost to all costs to government. The deadweight cost reflects that the cost of funding Expansion grants is associated with a welfare loss from additional taxation that would not otherwise occur. [18] Overall, as outlined in Table 10, the present value (*d*=8%) of government costs relating to Expansion grants that were closed or closing by 30 June 2024 is $737.4m. The process of calculating the government costs in Table 10 is broken down step-by-step in Appendix Table 5.

### 5.2.1 Grant funds

Grant funds are sourced from the NZTE dataset uploaded to the LBD. Grant funds can be viewed as a transfer payment that could be excluded on both sides without materially altering our conclusions (i.e., support from government equals benefit to firms). We prefer to account for grant funds explicitly in our calculations, as it provides information that may make it easier for readers to follow subsequent conclusions.

Provisions within the Income Tax Act 2007 are designed so that government grant funding itself is tax neutral: firms do not pay income tax on the grant but also cannot claim deductions for grant-funded expenditure. [19] Assuming that recipient firms would otherwise have had sufficient taxable income to utilise deductions, these two effects broadly offset, leaving the fiscal cost to government of grant funds disbursed approximately equal to the grant payment itself.

The total value of funds disbursed to Expansion grants that were closed or closing by 30 June 2024 is $277.1m in nominal terms. NZTE encourage recipients to submit claims in arrears at regular intervals (e.g., monthly). In the absence of specific data about the timing of claims, we assume that grant funds are disbursed evenly at monthly intervals between the grant start and end dates. When converted to real values, the inflation adjusted value is $346.3m. After accounting for a deadweight taxation cost of 20%, and discounting to present value terms, the total cost of Expansion funds disbursed is $721.0m under the default discount rate (*d*=8%). Using alternative rates, the equivalent figure ranges from $475.6m (*d*=2%) to $1,030.8m (*d*=13%).

[18] Recent iterations of the Treasury's CBAx tool no longer includes a deadweight cost of taxation by default and imply instead that one taxation funded project displaces another.

[19] Government grants and subsidies to businesses are generally treated as excluded income under section CX 47 of the Income Tax Act 2007, meaning the grant receipt itself is not taxable to the firm. Section DF 1 correspondingly denies tax deductions for the expenditure funded by the grant, to the extent of the grant amount (Inland Revenue, 2023).

### 5.2.2 Programme administration

NZTE provided us with information on administration costs that were directly attributable to the IGF as a whole. Attributable costs come from the distinct business unit that NZTE's IGF team sits within. The sole role of the business unit is the administration of the IGF, with operating costs predominantly driven by people and consulting costs.

Costs outside of the business unit are not treated as attributable government costs. Although an earlier report on the IGF included proportional costs of functions beyond the IGF team (e.g., customer managers, GM panels (SSI Research Evaluation & Analysis, 2015, p. 36)), the costs of these functions would —in our view— be incurred by NZTE regardless of the IGF. Consistent with standard cost-benefit approaches, such costs are not attributed to the IGF. [20]

To isolate administration costs for Expansion grants that were closed or closing by 30 June 2024, we assume that the administration cost per dollar of support is consistent across grant types. This approach benefitted from dialogue with the IGF team and reflects that the administrative burden of executing a large Expansion grant exceeds that of a one-off claim for a $5k Springboard grant. We therefore allocate IGF administration costs to closed Expansion grants based on the proportion of total IGF funds that went towards these grants. We then convert to real values, account for a 20% deadweight taxation cost, and discount to present values in the same manner as above.

In nominal terms, the total cost of Expansion administration is $4.9m – or $1.78 per $100 of grant funding. Broken down by policy phase, the administration of Expansion support cost $1.58 per hundred dollars of grant funding in phase 1 (2011-2015), $1.65 in phase 2 (2016-2020), and $2.05 in phase 3 (2021-2025). In real terms, the cost of administration is $6.1m. Incorporating a 20% deadweight cost of taxation, and discounting to present values, the total cost of Expansion administration is $12.5m ($d$=8%).

### 5.2.3 Software development and maintenance

Other attributable expenditures were limited to the development and maintenance of grant administration software. NZTE provided the total annual costs for developing and maintaining two IGF grant systems: a bespoke (previously used) software called TIPU (accounting for $2.4m in nominal terms), and a more flexible cloud-based system (now used) called Propel ($1.6m in nominal terms). No software development and maintenance costs were reported prior to 2018. In the same manner as we did for programme administration costs, we adjust this IGF-as-a-whole figure to isolate costs for relevant Expansion grants ($2.0m in nominal terms). After converting to real values ($2.4m), accounting for a 20% deadweight cost of taxation (+ $0.5m), and discounting to present values, total software costs were $3.8m (d=8%).

## 5.3 Returns from effects on supported firms

Table 11 reports the estimated (firm-level) returns from Expansion grants closed or closing by 30 June 2024. Value added provides the most appropriate summary measure of economic return, as it captures the additional income generated by supported firms after accounting for intermediate inputs. While export sales provide a useful indicator of the scale of commercial activity generated by Expansion support, value added offers a closer approximation to measures of economic contribution.

[20] Changes over time in finance systems and internal group structures meant that it was not possible to calculate administration costs for 2010 in a manner consistent with subsequent years. We handle this by assuming that the ratio of administration costs to grant funds during 2010 was consistent with 2011 ($4.91 per $100 of grant funding). The 2011 ratio is larger than the average across the full period and likely reflects additional setup costs in initial years.

Table 11: Returns to supported firms from Expansion grants

| | PV | | |
|---|---|---|---|
| | *d=8%* | *d=2%* | *d=13%* |
| Government costs | $737.4m | $487.1m | $1,053.2m |
| Additional export sales | $49.1b | $36.2b | $64.7b |
| Export sales generated per public dollar | $66.7 | $74.3 | $61.4 |
| Additional value added | $12.3b | $8.8b | $16.5b |
| Value added per public dollar | $16.6 | $18.0 | $15.7 |
| Net impact (value added less government costs) | $11.5b | $8.3b | $15.5b |

*Notes: PV = present (discounted) value. d = discount rate. Real dollar values are expressed in June 2025 $-values.*

As noted, the extent to which this translates into wider gains depends on broader economy-wide effects.

Under the default discount rate (8%), the present value of government costs associated with Expansion support is $737.4m. The present value of GVA generated —$12.3b— reflects the estimated increase in the contribution of supported firms to New Zealand's GDP. On this basis, each public dollar spent on Expansion support is associated with $16.6 in value added. After accounting for government costs, the net economic impact on supported firms is estimated to be $11.5b in present value terms. [21] Table 11 also reports the export sales generated by supported firms, which in present value total $49.1b. This is equivalent $66.7 in export sales per public dollar spent. These estimates are based on average per-firm effects which have considerable variation around their precise magnitude, as discussed above.

To reflect alternative assumptions about the opportunity cost of public funds, we also document sensitivity results using different discount rates applied to impacts and costs. While the magnitude of impacts varies depending on preferred discount rate, the estimates consistently suggest that the economic return substantially exceeds the public resources absorbed. Using the social rate of time preference (2%), the estimated value added generated per public dollar rises to $18.0, implying a net impact of $8.3b. Using a higher discount rate of 13%, intended to reflect the potentially higher opportunity cost associated with high-risk investments in new export markets, the estimated return is $15.7 of firm value added per public dollar. The higher discount rate results in a net impact of $15.5b.

[21] There is approximately $62.5m (nominal terms) —or 14.1%— of IGF funding reported government budget statements and/ or MBIE's financial system that is not contained in the dataset provided by NZTE and uploaded by Statistics NZ. If the observed impacts (as well as the grant funds disbursed) were rated up by this proportion, the net economic impact of Expansion grants (expressed in firm-level GVA effects) would be $13.1b. The rate of economic value added per public dollar of support would be $16.7 (d=8%).

# 6 Discussion

The International Growth Fund is NZTE's primary instrument for directly supporting firms to enter new markets and expand internationally. Previously, there has been limited evidence about whether IGF support has caused the observed positive outcomes among recipient firms. Our analysis addresses this gap by applying quasi-experimental methods to firm-level data, allowing us to estimate the incremental impact of Expansion grants relative to a credible counterfactual. We find substantial and persistent increases in export sales and gross value added among supported firms, as well as positive changes in other outcomes. The firm-level impacts translate into large estimated returns to supported firms relative to government costs.

Policy impacts vary across different types of firms and depend on the timing of support. By examining treatment effects across a range subgroups, we explore where impacts of Expansion support are most evident. Each subgroup estimate reflects the average effect relative to a subgroup-specific counterfactual, rather than a direct comparison of effectiveness across groups. Subgroup results suggest that positive average changes associated with Expansion support are particularly pronounced among firms first supported in more recent (2017–2022) years, firms in goods-producing industries, and in small firms. At the same time, larger firms account for a disproportionate share of impacts in absolute terms. Taken together, the subgroup results provide additional granularity about Expansion effects across different types of firms, highlighting where positive changes are most evident and how aggregate impacts are distributed.

## 6.1 Interpreting results

A positive exporting effect is not surprising given that Expansion support reduces the cost of selling overseas. Export promotion policies can lower the fixed cost of entering export markets (new destinations or new products), or they can lower the marginal cost, leading to increases in volumes of existing exports.

The positive effects reported here are typically larger than those in comparable empirical studies internationally. The effect of Expansion support on export sales ranges from 19 to 92 percent across years. Estimates from recent meta-analyses report (precision-weighted) average effects of export promotion policies on export growth of around 13 percent (standard deviation of 27 percent) (Demena, 2024), and effects on entry into exporting of 3.5 percentage points (Demena, 2025).[22] Similarly, our finding that the aggregate impact per dollar of government costs is to raise export sales by $66.7 per dollar and value added by $16.6 are higher than international benchmarks. Srhoj et al (2023) summarises findings from international export promotion schemes, reporting that increased exports exceed program costs by factors of 1.2 to 29, and that value added increases are 1.15 to 3 times costs.

The nature of the intervention may partly explain the larger effects. Expansion grants operate as a targeted co-funding mechanism tied to firm-specific internationalisation activities, rather than broader or more diffuse export promotion policies. It is likely that firm-level, co-investment approaches generate stronger impacts, particularly when support is directed towards firms with the capability and readiness to expand internationally. A second, related factor is the scale of support. While comprehensive measures of New Zealand's total expenditure on export promotion are not readily available, evidence suggests it is likely below the European average of around 0.5 percent of export value (Olarreaga, 2025). In this context, a relatively targeted and modest level of public

[22] Estimated effects are considerably smaller when adjusted for estimated publication bias, suggesting export growth effects of 1-9 percent (Demena, 2024 - Tables A1 & A2), and entry effects of less than 1% (Demena, 2025).

spending may contribute to higher average returns, as support is concentrated among firms with the greatest potential to translate assistance into export growth.

In the remainder of this section, we discuss some features and limitations of our data and analysis. We reflect on how the scope of our study may contribute to our estimates being over, or under, the true impact of Expansion support. Although the following discussion highlights some uncertainties about our findings, addressing the issues fully would require additional assumptions and data, and it is our judgement that our general finding of relatively strong positive impacts would be maintained.

## 6.2 Data completeness

### *Limited follow-up*

Our analysis examines short-run (0-6-year) impacts of IGF support on outcomes for supported firms. The limited post-support window is unavoidable given available data but is a longer follow-up period than in many other studies. Demena (2024), for example, reports that less than a third of the studies he summarises had follow-up periods of more than three years.

The ultimate objectives of Expansion Grant support extend beyond short term outcomes - stimulating export growth as a contributor to longer run economic growth in New Zealand. Longer-run dynamic impacts for firms could emerge if support helps firms to overcome the fixed costs of entering export markets, or if increased exporting has the side-effect of enabling firms to adopt new technologies or practices that make them more competitive. Previous New Zealand research has found that exporting of goods makes a firm more likely to subsequently export new products or to new markets (Fabling et al., 2012).

The evidence on the longer run impacts of export growth on productivity growth is less certain. While it is clear that more productive firms are more likely to export, it is less clear that exporting serves to make firms more productive (Bernard & Jensen, 1999; Fabling & Sanderson, 2013). A recent study by Buus et al. (2025) finds that export support programmes help firms grow by shifting demand, without affecting firms' prices, quality of output, markups, or marginal costs. Similarly, Cadot et al. (2015) finds that the impacts of support in Tunisia are short-lived due to the lack of associated improvements in product quality or sophistication. This is consistent with Fabling & Sanderson (2013), who find that initial entry into exporting and subsequent entry into new markets allow firms to expand —increasing employment and capital intensity in firms that were already more productive than their domestic competitors— but does not lead to higher multifactor productivity at the firm level. In contrast, a random assignment study among carpet makers in Egypt finds evidence of product quality improvements for firms receiving export support (Atkin et al., 2017).

### *Omitted grants*

Not all Expansion grants were included in the data that were available for analysis. If the omitted firms differed from those that were analysed, our overall results could be affected. The dataset provided by NZTE excluded $16.5 million of Expansion funding (draw down value, nominal terms). The omissions included cases where firm identifiers were unavailable, the recipient was a sole trader, or the Expansion project was closed with a draw-down value of less than $100k (as well as other criteria). This represents around 5.6% of total Expansion funding from grants closed or closing by 30 June 2024. If the average size of excluded grants was small, the excluded data is likely to represent a higher proportion of supported firms.

One potential concern is that the small draw-down values excluded from the dataset could reflect projects that were prematurely terminated or did not proceed as planned. If this were the case, the estimated average treatment effects could overstate the true average impact. However,

this possible overstatement will have less of an effect on estimated aggregate impacts, which would be a product of the (overstated) treatment effect and the (understated) number of affected firms.

## 6.3 Limitations of analysis

### *Imperfect Controls*

Our research design and implementation focuses on using the data available to control for the selectivity of Expansion support, and for the determinants of firm outcomes. We cannot completely control for unobserved factors that are independent of observed difference between firms. Within the Focus population, selection into receiving an Expansion grant is shaped by a firm's current ambition and readiness, as viewed by both the firm themselves and NZTE (SSI Research Evaluation & Analysis, 2015). We use a breadth of administrative and survey data to account for factors that influence the likelihood of receiving treatment and the outcomes of interest. If there are aspects of ambition and readiness related to export growth that are not captured by, or correlated with, our measured covariates, the estimated impacts may overstate the actual effects of Expansion grants.

It is possible that our use of price indices to control for inflation introduces some measurement error. This reflects a trade-off between alignment with official trade statistics and preserving a consistent and well-specified causal comparison. We use Producer Price Indices (PPIs) to control for general inflation across both treated and comparison firms, ensuring consistency in how outcomes are deflated within our causal framework. However, PPIs are constructed using price information from all firms within each measured sector, so price changes among supported firms may, in principle, contribute to movements in those indices. PPIs also do not fully capture international price movements, such as exchange rate fluctuations, that would be reflected in Overseas Trade Indices. We avoid using Overseas Trade Indices as deflators because they are more directly linked to export prices and may mask certain programme-induced effects. As our empirical design compares supported firms with similar unsupported firms and controls for industry and pre-treatment characteristics, we expect common price movements to affect both groups in similar ways. Any residual bias from imperfect deflation is likely to be small, unless supported firms and similar comparison firms have different exposure to price shocks.

### *Scope*

Programme compliance costs are outside the scope of our analysis, and we do not take account of firms receiving more than one Expansion grant. We do not see either of these omissions having a material impact on our findings.

Compliance costs incurred by firms and associated with IGF support can be thought of as a negative impact of government support. The incremental compliance costs of Expansion support (above the costs of Focus participation) appear to be rather small, particularly relative to other major government support schemes such as the R&D Tax Incentive (Ryan-Charleton et al., 2025).

We focus on first-time Expansion support to maintain a clear and consistent treatment definition. About a quarter of supported firms receive more than one Expansion grant. The effects of multiple grants may inflate our estimated average treatment effects but will not bias our aggregate impact estimates because we take account of costs associated with all grants in the analysis window. Additional grants could generate cumulative effects, or they may provide support for activities that would have occurred regardless. Van Biesebroeck et al (2015) report that consecutive treatments are associated with additional increases in outcomes.

Our analysis focuses on impacts on New Zealand-based economic activity, as reflected in measures such as export sales, gross value added, employment, and wages. Some complex internationalisation strategies, particularly those involving offshore affiliates or outward direct investment, may be only partly captured by our outcome measures. Where Expansion support

enables firms to serve foreign markets through offshore entities rather than direct exports from New Zealand, resulting gains may be understated in measured export sales and may only partly appear in New Zealand-based value added. The use of similar comparison firms may help to net out shifts toward offshore delivery models among specific types of firms (e.g., certain services industries).

NZTE applies a Direct Economic Impact (DEI) metric to Expansion projects, which reflects internally derived estimates of firm-level impacts based on expected and reported changes in profitability, employment, and supplier expenditure (SSI Research Evaluation & Analysis, 2015). This metric is not directly comparable to our counterfactual-based method, which estimates impacts by comparing observed outcomes for supported firms to those of similar comparison firms.

### *Outcomes beyond the firm*

By design, our approach concentrates on impacts among supported firms, without accounting for positive or negative impacts on firms other than those supported. Such effects can arise from economy-wide interactions, or from direct inter-firm interactions.

Gauging the impact of economy-wide interactions would require careful economy-wide modelling. In a small, open economy such as New Zealand, increased demand for exports as a result of export promotion policies may have a cushioned effect on output growth because of impacts on the exchange rate, and on the costs of diverting resources from other activities. Based on (Computable General Equilibrium) modelling that captures long run adjustments and all indirect impacts throughout the economy, a 10 percent increase in export demand (not equal to export sales) is estimated to have a 0.2 to 0.4 percent impact on GDP in the long run (King, 2012; Nana & Chandler, 2006).[23] Our estimated firm-level impacts do not reflect these offsetting effects, and the full economy-wide effects could be less than estimated returns to supported firms.

Accounting for beyond-firm outcomes is a nontrivial exercise that depends on careful reflection about the extent to which international evidence can be generalised to New Zealand. As well as offsetting mechanisms, certain benefits may arise through spillovers to other firms. For example, increased exporting by supported firms could lower the costs that other firms face when considering exporting. Fabling et al (2012) find 'demonstration effects' in New Zealand, whereby non-exporting firms are more likely to start exporting goods, or exporting to new markets, when there are already firms doing such exporting within their region. The effects are particularly strong for new entrants' choice of destination market. Further empirical work in New Zealand would be helpful to assess the extent to which spillovers are generated by Expansion supported firms, and to determine how they influence the programme's economy-wide impact.

[23] Nana & Chandler (2006) note that the impacts would be much stronger (around 6%) if there are idle resources that can be reallocated to export activities.

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# Appendix A Supplementary Tables

## Appendix Table 1: Active and newly approved IGF grants

| | Expansion | | | | Validation | | | | Springboard | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | # Active | # Appr | $m Appr | % Drawn | # Active | # Appr | $m Appr | % Drawn | # Active | # Appr | $m Appr | % Drawn |
| 2010 | 6 | 6 | 3.7 | 83% | | | | | | | | |
| 2011 | 60 | 55 | 23.7 | 93% | | | | | | | | |
| 2012 | 130 | 60 | 26.1 | 94% | | | | | | | | |
| 2013 | 160 | 45 | 20.1 | 88% | | | | | | | | |
| 2014 | 200 | 50 | 21.4 | 85% | | | | | | | | |
| 2015 | 220 | 55 | 23.4 | 84% | 6 | 6 | 0.6 | 99% | | | | |
| 2016 | 210 | 45 | 19.3 | 88% | 100 | 95 | 7.4 | 72% | | | | |
| 2017 | 200 | 35 | 15.3 | 90% | 140 | 50 | 4.0 | 64% | | | | |
| 2018 | 210 | 55 | 28.8 | 91% | 150 | 50 | 4.4 | 73% | | | | |
| 2019 | 180 | 45 | 23.9 | 95% | 110 | 45 | 4.1 | 69% | | | | |
| 2020 | 200 | 70 | 36.2 | 94% | 130 | 70 | 6.6 | 83% | | | | |
| 2021 | 240 | 70 | 37.2 | 92% | 250 | 180 | 16.5 | 84% | | | | |
| 2022 | 250 | 70 | 38.1 | 86% | 450 | 240 | 22.6 | 77% | 180 | 180 | 1.1 | 69% |
| 2023 | 240 | 70 | 35.0 | 61% | 390 | 100 | 9.6 | 79% | 470 | 330 | 2.2 | 74% |
| 2024 | 240 | 55 | 28.6 | 19% | 280 | 120 | 11.6 | 43% | 560 | 350 | 2.5 | 63% |
| 2025 | 150 | .s | .s | .s | 130 | 12 | 1.0 | .s | 110 | 20 | 0.1 | .s |

*Notes: This table summarises annual totals of grants provided by NZTE and uploaded to the LBD, after deduplication and repair. Appr: Approved. "$m Appr" refers to the total approved value (nominal terms, millions) of grants started in a given year. % drawn refers to the percentage of the approved value (of grants started in that year) that has been drawn down at the time the data was extracted by NZTE (August 2025). Values are aggregated to years ending 31 March and rounded/ suppressed (".s") in accordance with Statistics NZ confidentiality requirements. Overall totals are reported in the lower panel of Table 1.*

## Appendix Table 2: Industry groupings

| ANZSIC | Grouping | Description |
|---|---|---|
| A | OTHER | Agriculture, Forestry and Fishing |
| B | OTHER | Mining |
| C11 | C11 | Food Product Manufacturing |
| C12 | C1 | Beverage and Tobacco Product Manufacturing |
| C13 | C1 | Textile, Leather, Clothing and Footwear Manufacturing |
| C14 | C1 | Wood Product Manufacturing |
| C15 | C1 | Pulp, Paper and Converted Paper Product Manufacturing |
| C16 | C1 | Printing |
| C17 | C1 | Petroleum and Coal Product Manufacturing |
| C18 | C1 | Basic Chemical and Chemical Product Manufacturing |
| C19 | C1 | Polymer Product and Rubber Product Manufacturing |
| C20 | C2 | Non-Metallic Mineral Product Manufacturing |
| C21 | C2 | Primary Metal and Metal Product Manufacturing |
| C22 | C2 | Fabricated Metal Product Manufacturing |
| C23 | C2 | Transport Equipment Manufacturing |
| C24 | C2 | Machinery and Equipment Manufacturing |
| C25 | C2 | Furniture and Other Manufacturing |
| D | OTHER | Electricity, Gas, Water and Waste Services |
| E | OTHER | Construction |
| F | F3 | Wholesale Trade (except for F34) |
| G | OSERV | Retail Trade |
| H | OSERV | Accommodation and Food Services |
| I | OSERV | Transport, Postal and Warehousing |
| J | J | Information Media and Telecommunications (incl. software & gaming) |
| K | FIRE | Financial and Insurance Services |
| L | FIRE | Rental, Hiring and Real Estate Services |
| M69 | M69 | Professional, Scientific and Technical Services |
| M70 | M7000 | Computer Systems Design and Related Services |
| N | OTHER | Administrative and Support Services |
| O | OTHER | Public Administration and Safety |
| P | OTHER | Education and Training |
| Q | OTHER | Health Care and Social Assistance |
| R | OTHER | Arts and Recreation Services |
| S | OTHER | Other Services |
| T | OTHER | Not Elsewhere Included |

*Notes: "J", "FIRE" and "OSERV" are consolidated to a single grouping in the causal analysis.*

## Appendix Table 3: Aggregate value of additional export sales

| Year | # firms | Firm avg. | t=0 | t=1 | t=2 | t=3 | t=4 | t=5 | t=6 | Total (real) | PV d=8% | PV d=2% | PV d=13% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | $0.4m | -$0.8m | $6.6m | $8.1m | $23.6m | $19.1m | $21.0m | $78.0m | | | |
| 2010 | 9 | | $3m | | | | | | | $3m | $10m | $4m | $19m |
| 2011 | 57 | | $20m | -$6m | | | | | | $14m | $42m | $19m | $79m |
| 2012 | 57 | | $21m | -$38m | $50m | | | | | $34m | $91m | $43m | $164m |
| 2013 | 39 | | $14m | -$39m | $325m | $62m | | | | $362m | $913m | $460m | $1,571m |
| 2014 | 42 | | $16m | -$27m | $337m | $403m | $181m | | | $910m | $2,123m | $1,132m | $3,493m |
| 2015 | 48 | | $17m | -$30m | $230m | $418m | $1,170m | $146m | | $1,951m | $4,211m | $2,378m | $6,622m |
| 2016 | 24 | | $8m | -$32m | $260m | $285m | $1,214m | $946m | $161m | $2,841m | $5,680m | $3,396m | $8,536m |
| 2017 | 21 | | $8m | -$16m | $273m | $322m | $826m | $981m | $1,041m | $3,435m | $6,358m | $4,025m | $9,131m |
| 2018 | 33 | | $12m | -$14m | $136m | $338m | $935m | $668m | $1,080m | $3,155m | $5,408m | $3,625m | $7,424m |
| 2019 | 27 | | $10m | -$23m | $122m | $169m | $982m | $756m | $735m | $2,752m | $4,366m | $3,099m | $5,729m |
| 2020 | 48 | | $17m | -$18m | $195m | $151m | $491m | $794m | $832m | $2,463m | $3,619m | $2,719m | $4,538m |
| 2021 | 39 | | $14m | -$32m | $156m | $242m | $439m | $397m | $874m | $2,090m | $2,844m | $2,263m | $3,408m |
| 2022 | 27 | | $9m | -$26m | $278m | $194m | $704m | $355m | $437m | $1,951m | $2,457m | $2,070m | $2,815m |
| 2023 | 6 | | $2m | -$17m | $224m | $345m | $562m | $569m | $391m | $2,075m | $2,420m | $2,159m | $2,650m |
| 2024 | | | | -$3m | $151m | $278m | $1,001m | $454m | $626m | $2,507m | $2,708m | $2,557m | $2,833m |
| 2025 | | | | | $29m | $187m | $808m | $809m | $500m | $2,333m | $2,333m | $2,333m | $2,333m |
| 2026 | | | | | | $36m | $543m | $653m | $891m | $2,122m | $1,965m | $2,081m | $1,878m |
| 2027 | | | | | | | $104m | $439m | $718m | $1,261m | $1,081m | $1,212m | $988m |
| 2028 | | | | | | | | $84m | $483m | $567m | $450m | $535m | $393m |
| 2029 | | | | | | | | | $92m | $92m | $68m | $85m | $57m |
| | | | | | | | | | Total | $32,920m | $49,148m | $36,194m | $64,660m |

*Notes: t = years since first support. PV = present (discounted) value. d = discount rate. Dollar values are adjusted to real June 2025 $-values. To meet Statistics NZ confidentiality requirements, firms beginning Expansion support in 2009 are assigned to the 2010 year. The aggregate impact for each annual cohort and support year comprises (a) the sum of estimated per-firm impacts for firms in the estimation sample in that cohort, plus (b) the sum of scale-adjusted impacts for remaining firms not in the estimation sample.*

## Appendix Table 4: Aggregate value of additional gross value added

| Year | # firms | Firm avg. | t=0 | t=1 | t=2 | t=3 | t=4 | t=5 | t=6 | Total (real) | PV d=8% | PV d=2% | PV d=13% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | $0.7m | $0.6m | $1.9m | $3.0m | $3.9m | $3.9m | $4.7m | $18.8m | | | |
| 2010 | 9 | | $5m | | | | | | | $5m | $17m | $7m | $33m |
| 2011 | 57 | | $34m | $4m | | | | | | $39m | $113m | $51m | $213m |
| 2012 | 57 | | $35m | $29m | $15m | | | | | $79m | $215m | $102m | $387m |
| 2013 | 39 | | $24m | $30m | $96m | $23m | | | | $173m | $435m | $219m | $749m |
| 2014 | 42 | | $27m | $20m | $99m | $151m | $30m | | | $328m | $764m | $407m | $1,257m |
| 2015 | 48 | | $29m | $23m | $68m | $156m | $195m | $30m | | $501m | $1,081m | $610m | $1,699m |
| 2016 | 24 | | $14m | $24m | $76m | $106m | $202m | $195m | $36m | $655m | $1,309m | $782m | $1,967m |
| 2017 | 21 | | $13m | $12m | $80m | $120m | $138m | $203m | $231m | $797m | $1,475m | $934m | $2,119m |
| 2018 | 33 | | $20m | $11m | $40m | $127m | $156m | $138m | $240m | $731m | $1,254m | $840m | $1,721m |
| 2019 | 27 | | $16m | $17m | $36m | $63m | $164m | $156m | $163m | $616m | $977m | $694m | $1,282m |
| 2020 | 48 | | $29m | $14m | $57m | $57m | $82m | $164m | $185m | $588m | $863m | $649m | $1,083m |
| 2021 | 39 | | $24m | $25m | $46m | $91m | $73m | $82m | $194m | $534m | $726m | $578m | $871m |
| 2022 | 27 | | $16m | $20m | $82m | $72m | $117m | $73m | $97m | $477m | $601m | $507m | $689m |
| 2023 | 6 | | $3m | $13m | $66m | $129m | $94m | $118m | $87m | $509m | $594m | $530m | $650m |
| 2024 | | | | $3m | $44m | $104m | $167m | $94m | $139m | $551m | $595m | $562m | $622m |
| 2025 | | | | | $8m | $70m | $134m | $167m | $111m | $491m | $491m | $491m | $491m |
| 2026 | | | | | | $13m | $90m | $135m | $198m | $436m | $404m | $428m | $386m |
| 2027 | | | | | | | $17m | $91m | $159m | $267m | $229m | $257m | $209m |
| 2028 | | | | | | | | $17m | $107m | $125m | $99m | $117m | $86m |
| 2029 | | | | | | | | | $21m | $21m | $15m | $19m | $13m |
| | | | | | | | | | Total | $7,922m | $12,258m | $8,784m | $16,527m |

*Notes: t = years since first support. PV = present (discounted) value. Dollar values are adjusted to June 2025 $-values (i.e., real terms). Due to Statistics NZ confidentiality requirements, firms beginning Expansion support in 2009 are assigned to the 2010 year. The aggregate impact for each annual cohort and support year comprises (a) the sum of estimated per-firm impacts for firms in the estimation sample in that cohort, plus (b) the sum of scale-adjusted impacts for remaining firms not in the estimation sample.*

## Appendix Table 5: Further breakdown of government costs

| Year | All IGF nom. | % closed Exp. | Closed Exp. nom. | $ real | + 20% dwt. | PV: d=8% | PV: d=2% | PV: d=13% |
|---|---|---|---|---|---|---|---|---|
| Grant funds drawn down | | | | | | | | |
| 2010 | $0.2m | 100% | $0.2m | $0.3m | $0.4m | $1.3m | $0.5m | $2.5m |
| 2011 | $4.0m | 100% | $4.0m | $6.0m | $7.1m | $21.0m | $9.4m | $39.5m |
| 2012 | $13.0m | 100% | $13.0m | $5.2m | $6.2m | $17.0m | $8.1m | $30.6m |
| 2013 | $15.9m | 100% | $15.9m | $22.5m | $27.0m | $68.0m | $34.3m | $117.1m |
| 2014 | $20.4m | 100% | $20.4m | $28.2m | $33.9m | $79.0m | $42.1m | $130.0m |
| 2015 | $20.5m | 100% | $20.4m | $28.7m | $34.5m | $74.4m | $42.0m | $117.0m |
| 2016 | $22.5m | 87% | $19.6m | $27.9m | $33.5m | $67.0m | $40.0m | $100.6m |
| 2017 | $22.5m | 84% | $18.9m | $26.5m | $31.8m | $58.8m | $37.2m | $84.5m |
| 2018 | $21.6m | 86% | $18.5m | $24.8m | $29.8m | $51.0m | $34.2m | $70.0m |
| 2019 | $22.8m | 86% | $19.5m | $25.2m | $30.3m | $48.0m | $34.1m | $63.0m |
| 2020 | $29.3m | 88% | $25.9m | $32.8m | $39.4m | $57.9m | $43.5m | $72.5m |
| 2021 | $39.0m | 79% | $30.3m | $38.4m | $46.1m | $62.7m | $49.9m | $75.1m |
| 2022 | $55.0m | 64% | $35.2m | $41.4m | $49.7m | $62.6m | $52.7m | $71.7m |
| 2023 | $45.8m | 53% | $24.3m | $26.6m | $31.9m | $37.2m | $33.2m | $40.7m |
| 2024 | $32.1m | 34% | $10.9m | $11.7m | $14.0m | $15.1m | $14.3m | $15.8m |
| 2025 | $16.2m | 1% | $0.1m | $0.1m | $0.1m | $0.1m | $0.1m | $0.1m |
| Subt. | $380.7m | | $277.1m | $346.3m | $415.6m | $721.0m | $475.6m | $1,030.8m |
| Administration | | | | | | | | |
| 2010 | $0.0m | 100% | $0.0m | $0.0m | $0.0m | $0.1m | $0.0m | $0.1m |
| 2011 | $0.2m | 100% | $0.2m | $0.3m | $0.4m | $1.0m | $0.5m | $1.9m |
| 2012 | $0.2m | 100% | $0.2m | $0.1m | $0.1m | $0.3m | $0.1m | $0.5m |
| 2013 | $0.3m | 100% | $0.3m | $0.4m | $0.4m | $1.1m | $0.5m | $1.8m |
| 2014 | $0.2m | 100% | $0.2m | $0.3m | $0.4m | $1.0m | $0.5m | $1.6m |
| 2015 | $0.3m | 100% | $0.3m | $0.4m | $0.4m | $0.9m | $0.5m | $1.5m |
| 2016 | $0.2m | 87% | $0.2m | $0.3m | $0.4m | $0.7m | $0.4m | $1.1m |
| 2017 | $0.4m | 84% | $0.3m | $0.4m | $0.5m | $1.0m | $0.6m | $1.4m |
| 2018 | $0.4m | 86% | $0.4m | $0.5m | $0.6m | $1.0m | $0.7m | $1.4m |
| 2019 | $0.5m | 86% | $0.4m | $0.5m | $0.6m | $1.0m | $0.7m | $1.3m |
| 2020 | $0.5m | 88% | $0.4m | $0.5m | $0.6m | $0.9m | $0.7m | $1.2m |
| 2021 | $0.8m | 79% | $0.6m | $0.8m | $1.0m | $1.3m | $1.0m | $1.6m |
| 2022 | $0.8m | 64% | $0.5m | $0.6m | $0.8m | $0.9m | $0.8m | $1.1m |
| 2023 | $1.1m | 53% | $0.6m | $0.6m | $0.7m | $0.9m | $0.8m | $0.9m |
| 2024 | $1.0m | 34% | $0.3m | $0.4m | $0.4m | $0.5m | $0.4m | $0.5m |
| 2025 | $1.0m | 1% | $0.0m | $0.0m | $0.0m | $0.0m | $0.0m | $0.0m |
| Subt. | $7.9m | | $4.9m | $6.1m | $7.3m | $12.5m | $8.4m | $17.8m |

Appendix Table 5 (continued): Further breakdown of government costs

| Year | All IGF nom. | % closed Exp. | Closed Exp. nom. | $ real | + 20% dwt. | PV: d=8% | PV: d=2% | PV: d=13% |
|---|---|---|---|---|---|---|---|---|
| Software development and maintenance | | | | | | | | |
| 2018 | $0.2m | 86% | $0.2m | $0.3m | $0.3m | $0.6m | $0.4m | $0.8m |
| 2019 | $0.1m | 86% | $0.1m | $0.1m | $0.1m | $0.2m | $0.2m | $0.3m |
| 2020 | $0.2m | 88% | $0.2m | $0.2m | $0.2m | $0.3m | $0.3m | $0.4m |
| 2021 | $0.4m | 79% | $0.3m | $0.4m | $0.4m | $0.6m | $0.5m | $0.7m |
| 2022 | $0.9m | 64% | $0.6m | $0.7m | $0.8m | $1.1m | $0.9m | $1.2m |
| 2023 | $0.6m | 53% | $0.3m | $0.4m | $0.4m | $0.5m | $0.5m | $0.6m |
| 2024 | $1.0m | 34% | $0.3m | $0.4m | $0.4m | $0.5m | $0.4m | $0.5m |
| 2025 | $0.6m | 1% | $0.0m | $0.0m | $0.0m | $0.0m | $0.0m | $0.0m |
| Subt. | $4.1m | | $2.0m | $2.4m | $2.9m | $3.8m | $3.1m | $4.5m |
| Total | $392.6m | | $284.1m | $354.9m | $425.8m | $737.4m | $487.1m | $1,053.2m |

*Notes: nom. = nominal terms. Exp = Expansion. "20% dwt." refers to the 20% deadweight cost of taxation applied. PV = present (discounted) value. d = discount rate. Subt. = Subtotal. Real dollar values are expressed in June 2025 $-values. Grant funds drawn down are sourced from the NZTE dataset uploaded to the LBD. Administration and software costs were provided by NZTE for the IGF as a whole. We attribute administration and software costs to Expansion support according to the proportion of total IGF funds that went towards closed Expansion grants. We have aligned government financial years (ending 30 June) with the most closely overlapping 31 March year, as required.*

# Appendix B Data and Methods

## B.1 Data background

Our analysis relies on de-identified linked longitudinal microdata from the Longitudinal Business Database (LBD). The LBD provides an established collection of large-scale sample surveys and a range of administrative data for firms operating in New Zealand. Data to enable this evaluation was collated by data specialists at NZTE and shared with Statistics NZ, covering most IGF grants dating back to IGF inception, as well as information on transitions into and out of NZTE's Focus segment over time. Respectively, these datasets are named as "[LBD_Clean_202512]·[nzte_co_funding_projects]" and "[LBD_Clean_202512]·[nzte_focus_segment_mvmnts]" in the LBD.

The IGF and Focus data could then be linked to a wide range of business microdata in the LBD, using correspondence among confidentialised versions of New Zealand Business Numbers (NZBNs), tax identifiers (IRD numbers), and "enterprise numbers", which refer to unique identifiers for firms in Statistics New Zealand's Business Register.[24] This allowed us to create a (de-identified) panel dataset of objective and consistently measured information for relevant characteristics and outcomes.

### B.1.1 IGF grant data

The dataset of IGF grants contained records for most, but not all, IGF grants awarded. Certain grants were excluded by NZTE, including, among others, (a) grants awarded to multi-business coalitions and sole traders; (b) projects with draft status (not yet active) as of 30 June 2024; and (c) closed Expansion projects with a draw down value of less than $100k. The total draw down value of excluded IGF grants was $17.9m, with $16.5m of the value relating to Expansion grants (both nominal values). This represents around 5.6% of total Expansion funding from grants closed or closing by 30 June 2024.

The raw IGF grant dataset included various internal inconsistencies, including duplicate grant records and cases where multiple identifiers appeared to refer to a single underlying grant. These issues created uncertainty about the true number of distinct grants, and in some cases the identity of the entity that received support and the extent of support.

Most duplicate and near-duplicate records in the IGF grants dataset occurred because NZTE holds multiple identifiers for the same firm over time, including NZBN and IRD numbers used by different legal entities that represent the same economic enterprise (Fabling, 2011). Additional duplication of grant records arose when firms under common ownership file GST returns as a group, creating non-unique links between IRD numbers and enterprise numbers in the Business Register. Many apparent duplicates were identified and resolved by repairing breaks in longitudinal firm identifiers, following Fabling (2011).

Resolving remaining duplicates relied on two assumptions, which were refined during consultation with NZTE data specialists:

[24] Unless specified, the firm entities studied in this report are based on permanent enterprise numbers (PENTs). These unique identifiers were developed by Fabling (2011) to maintain a consistent time series for firms even when administrative changes—such as restructuring as a limited liability company—create breaks in legal identifiers. PENTs draw on continuity of location and employees from Linked Employer-Employee Data (LEED) to confirm that firms are materially the same despite such changes.

Appendix Table 6: Repairing the raw IGF grants data

(a) Raw dataset

| | Grants | Distinct NZBNs | Distinct IRD identifiers | Approved ($m) | Drawn down ($m) |
|---|---|---|---|---|---|
| Expansion | 810 | 594 | 567 | $398.9 | $326.2 |
| Validation | 1,000 | 786 | 741 | $93.1 | $66.6 |
| Springboard | 920 | 720 | 672 | $6.1 | $4.1 |
| Total | 2,730 | | | $498.1 | $396.9 |

(b) After deduplication, linking and repairing

| | Grants | Distinct PENTs | Approved ($m) | Drawn down ($m) |
|---|---|---|---|---|
| Expansion | 760 | 573 | $382.1 | $312.8 |
| Validation | 960 | 756 | $88.6 | $63.9 |
| Springboard | 880 | 705 | $6.0 | $4.0 |
| Total | 2,600 | | $476.7 | $380.7 |

*Notes: The table includes Expansion grants started by 30 June 2024, as well as all observed Validation grants and Springboard grants. Grant drawdown and approved values are expressed in nominal terms (not inflation-adjusted). Values are aggregated and rounded/ suppressed (".s") in accordance with Statistics NZ confidentiality requirements. PENT: Permanent Enterprise Number. NZBN: New Zealand Business Number. IRD: Inland Revenue Department.*

- Expansion and Validation grants are rare and bespoke, so two records with identical start and end dates, support type, awarded value, and drawn-down value likely represent a single grant.[25]
- NZBNs provide a more reliable link to grant recipients than IRD numbers, given the possibility of a group-level GST filing.

The latter assumption allowed us to make use of IRD-based identifiers in cases where recorded NZBNs could not be linked to a firm on the Business Register. At the same time, we prioritised NZBN-based links for firms that had them. For the few cases where these rules still left multiple potential recipients for a single grant, we manually reviewed activity patterns around the grant start date and assigned the grant to the enterprise showing economic activity at that time.

Appendix Table 6 summarises the impact of linking and deduplicating IGF grant data. Panel "a" summarises the raw data; while panel "b" reports the deduplicated, linked and repaired dataset. Among Expansion recipients, our repair efforts consolidated unique recipient IDs from 594 NZBNs to 573 distinct firms with Expansion grants that had started by 30 June 2024. In some cases, two NZBNs pointed to the same firm during different time periods. This consolidation generated associated reductions in record count and grant value. (Fewer than six Expansion grant recipients could not be linked to the Business Register using NZBN or IRD numbers.)

[25] We adopted a lighter touch when repairing Springboard grants, which are more frequent and less distinctive in their characteristics. When Springboard grant records point to different recipients, both records are retained, unless there is clear evidence that identifiers refer to the same firm.

Appendix Table 7: Focus coverage in the LBD dataset

| Year | Focus firm counts NZTE Annual Reports | Focus firm counts from LBD dataset | + imputed Focus members |
|---|---|---|---|
| 2004 | unk. | 105 | .s |
| 2005 | unk. | 99 | .s |
| 2006 | unk. | 111 | .s |
| 2007 | unk. | 123 | .s |
| 2008 | unk. | 123 | .s |
| 2009 | 321 | 129 | 42 |
| 2010 | 444 | 129 | 75 |
| 2011 | 456 | 138 | 99 |
| 2012 | 442 | 144 | 111 |
| 2013 | 456 | 204 | 117 |
| 2014 | 525 | 288 | 114 |
| 2015 | 621 | 423 | 99 |
| 2016 | 705 | 531 | 96 |
| 2017 | 671 | 585 | 90 |
| 2018 | 670 | 627 | 78 |
| 2019 | 704 | 666 | 39 |
| 2020 | 732 | 735 | 33 |
| 2021 | 1,437 | 1,584 | 36 |
| 2022 | 1,386 | 1,593 | 57 |
| 2023 | 1,342 | 1,500 | 60 |
| 2024 | 1,029 | 1,410 | 48 |
| 2025 | 932 | 1,128 | 21 |

*Notes: Figures from NZTE Annual Reports are, in most cases, cross-sectional snapshots taken at the end of the June financial year. They should be less than the annual counts of active firms, depending on the level of churn in the Focus segment. Firm counts in the two rightmost columns are annual counts of firms active in the Focus segment at any point during the year, and are aggregated to years ending 31 March. These counts are rounded/ suppressed (".s") in accordance with Statistics NZ requirements. In years prior to the creation of the Focus segment, NZTE's referred to its intensely engaged customers as 'Key Account' and 'Pipeline' customers, as well as 'High Growth Potential' clients. "unk." denotes years where we have not been able to access the relevant NZTE annual report, nor use other sources to ascertain the Focus customer count.*

### B.1.2 Focus segment data

Within the Focus segment dataset, the extent of internal inconsistencies was not as severe. We followed a comparable approach, prioritising NZBN links to repair (rare) instances where records in the Focus dataset pointed to different firms. Of the 2,181 distinct Focus customers recorded by NZTE, just 6 (0.3%) are not linkable to the Business Register. The remainder can be attributed to 2,127 distinct firms. In arriving at this count, it was necessary to resolve 24 cases where multiple identifiers for the same record in the raw dataset pointed to different firms.

The biggest challenge with the Focus segment data related to missing records. Up to 2016, a nontrivial number of firms in the Focus segment are absent from the dataset uploaded to the LBD.

Appendix Table 7 compares the number of Focus firms reported by NZTE in their Annual Report (where available), against the counts of Focus members active in that year in the LBD.

As the Focus segment undergoes regular entry and exit of firms, we would expect the total count of Focus firms active in a year according to the LBD to be greater than the cross-sectional snapshot of Focus members reported in NZTE's Annual Report. The pattern in Appendix Table 7, where the LBD count is sometimes considerably less than the corresponding NZTE Annual Report figure, is suggestive of some rather large gaps in coverage within the LBD. In 2012, for example, less than a third of Focus firms counted in NZTE's Annual Report (New Zealand Trade and Enterprise, 2012) are contained in the Focus dataset uploaded to the LBD.

Dialogue with NZTE suggests that these gaps are due to historical data quality challenges associated with the Focus segment (and predecessor segments). We were able to fill some gaps in the Focus dataset by imputing Focus membership based on the IGF grants data. Focus membership is a pre-requisite for IGF grant support, including Validation and Springboard grants. We therefore assume that firms holding IGF grants are Focus members for the duration of their IGF grant. Where Expansion firms are entirely missing from the Focus segment during their Expansion grant, we also assume that they were Focus members in the two years prior to the Expansion grant to account for a lead-in period (median of two years) while Focus firms proceed through the Discovery phase of NZTE's Customer Way. The rightmost column of Appendix Table 7 reports the number of additional imputed Focus firms that we added to the Focus segment based on IGF grant data.

In more recent years, the raw dataset, and the imputation method, provide reasonably complete coverage of Focus membership. The number of firms active in the Focus segment peaked at 1,650 in 2022, decreasing to 1,149 in 2025.

## B.2 Estimation approach

Following the approach of Hirano & Imbens (2001), we adopt a 'doubly-robust' approach to estimate the effect of Expansion support (the treatment) on supported firms. The first component of this approach is a selection equation, which captures the relationship between observed characteristics ($X_j^S$ for firm *j* in equation (1)) and the probability of being supported.

### B.2.1 Selection (propensity) equation

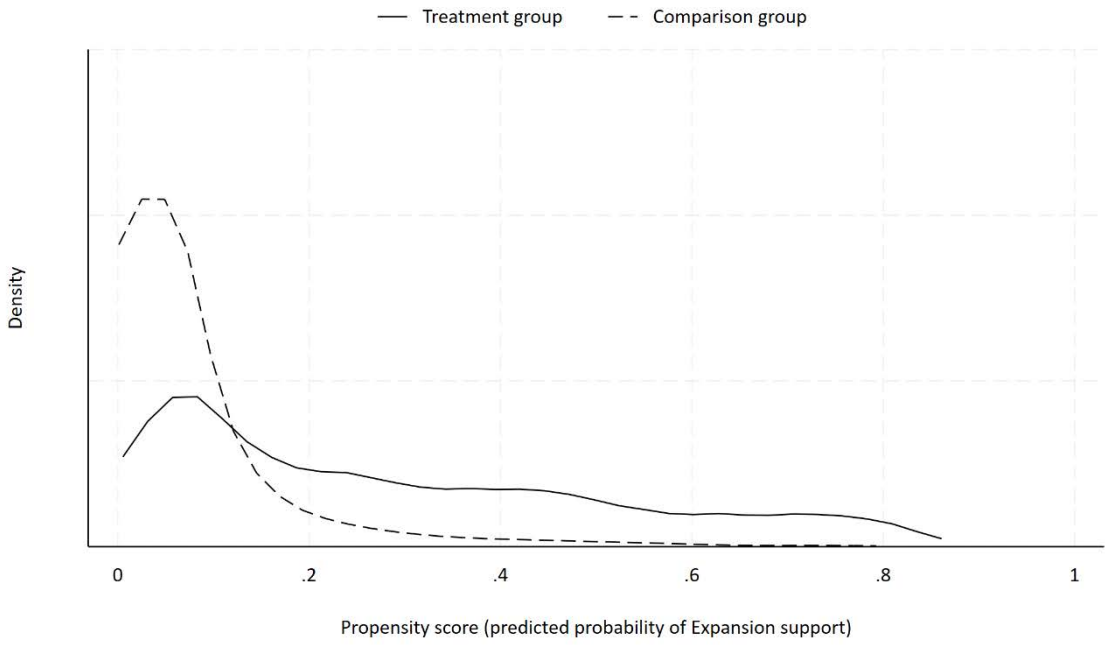
$$P[Firm\ j\ is\ supported] = P\left[T_j\right] = f(X_j^S) \quad (1)$$

Equation (1) summarises the selection into treatment, which we estimated using a logit regression model. The estimated model is used to derive each firm's predicted probability of receiving treatment, which is referred to as the 'propensity score', denoted $\hat{p}$.

The propensity score is then used to construct a sample of comparison firms that more closely resembles the treated firms based on their underlying characteristics. There are two main ways of achieving this – matching and weighting. Matching involves choosing, for each treated firm, one (or more) comparison firms that have the same, or similar, propensity score. Matching could also be restricted to comparison firms that share a particular characteristic, such as being in the same industry (Jaffe & Le, 2015). Matching can result in good balance on relevant covariates but at a cost of substantially reducing the effective sample size, with implications for precision and representativeness. We adopt the alternative approach of relying on weighting.

Appendix Figure 1 plots kernel density measures of propensity scores ($\hat{p}$: predicted probability of receiving Expansion support) for treated and comparison firms. As the figure illustrates, the comparison group distribution (dashed line) is concentrated at very low predicted probabilities, peaking close to zero and declining rapidly beyond about 0.10. The median propensity score for

## Appendix Figure 1: Predicted probability of receiving Expansion support




*Notes: The figure shows kernel density measures with bandwidth of 0.04 and 35 evaluation points. Some values have been supressed due to small firm counts, in line with Statistics NZ confidentiality requirements.*

comparison firms is 0.03, with a maximum value around 0.82 (the upper tail is suppressed due to small firm counts). The treated group distribution (solid line) maintains its density further to the right, with a median propensity score of 0.22. The upper tail of the distribution among treated firms reaches 0.89. Overall, Appendix Figure 1 shows separation between the two groups with good overlap at moderate propensity scores, up to approximately 0.30.

The overlap in propensity scores is important for the weighting approach used to construct the counterfactual distribution for treated firms. The weighting approach uses all untreated firms, but places greater weight on comparison firms with high propensity scores and less weight on comparison firms with low propensity scores. This is achieved by using a weight of $\hat{p}/(1-\hat{p})$ for each comparison firm, while each treated firm has a weight of 1. The effect is to ensure that the distribution of propensity scores, and therefore the distribution of characteristics, is the same for treatment and comparison groups.

An advantage of propensity score weighting, relative to matching estimators, is that it allows all comparison firms to contribute to the estimation of counterfactual outcomes. This can make better use of modest samples of treated and potential comparison firms, provided there is good covariate overlap and resulting weights are not overly concentrated among a small group of untreated firms. To support this, we impose a common support condition and exclude the small number of observations with propensity scores that fall outside the range where treated and comparison firms overlap (Imbens, 2004).

A key assumption of the weighting approach is conditional independence, meaning that, conditional on the propensity score, the treatment assignment is exogenous (or random). Accounting for the propensity score (probability of receiving treatment given observable characteristics), the actual treatment status should not provide any additional information about the

potential outcome. This implies that observable characteristics (matching variables) used to estimate the propensity score should be those that influence both the likelihood of receiving treatment and the outcome of interest (Caliendo & Kopeinig, 2008).

### B.2.2 Outcome equation

The second component of this approach is an outcome equation, which captures how differences in firm characteristics are associated with differences in outcomes. We use a linear regression of outcomes ($Y_j$ for firm $j$ in equation (2)) on observed characteristics ($X_j^O$). In addition to the outcome equation (equation (2)) for the treatment group of supported firms, a separate outcome equation is estimated for the group of comparison firms. The outcome regression for the comparison firms is estimated as a weighted regression, using the propensity-based weights described above.

$$Y_j = g_T(X_j^O) \tag{2}$$

Using the outcome regression for treated firms, we obtain the predicted outcome with Expansion support. Additionally, using the estimated relationship (based on the weighted regression) between observed characteristics and outcomes for the comparison firms, we can estimate the outcome that each treated firm would have experienced based on their own characteristics. This is the treated firm's estimated 'counterfactual outcome' in the absence of Expansion support. The difference between the predicted outcomes with and without support is referred to as the 'treatment effect' associated with receiving Expansion support. Averaging the treatment effect across treated firms generates our main measure of policy impacts.

### B.2.3 Specification of gross value added

Alongside export sales, impacts on gross value added were a primary focus of our analysis. "GVA" refers to the value of a firm's output minus the value of intermediate inputs used in production. There are two ways to measure GVA using available data (Fabling, 2024). The first approach is to use GST returns and calculate net GST sales (sales minus purchases) as a proxy for value added. An advantage of this approach is coverage: GST returns are close to universal because filing is mandatory above a threshold, so GVA is consistently measured. This allows measurement across a much broader set of firms, particularly smaller and newer businesses (Fabling & Sanderson, 2016). The second approach is to use the productivity tables in the LBD (Fabling, 2024; Fabling & Maré, 2015, 2019), which prioritise Annual Enterprise Survey (AES) and IR10 data to estimate production-function components such as gross output and intermediate consumption. An advantage of using the productivity tables is conceptual clarity: the measures of output and intermediate consumption are separated from other sales and purchases (e.g., capital), making them more consistent with production-based measures of value added.

As outlined in the main body, we follow prior studies and use net GST sales (GST sales minus GST purchases) as the primary measure of GVA (Grimes et al., 2012; Maré & Timmins, 2006). We do so for two reasons. First, this offers the possibility to capture GVA based on a consistent measurement source. For most firms in our estimation sample, the productivity tables use data from multiple sources across different years in the series, resulting in some cases of implausibly large annual increases or decreases. Second, as the two primary outcomes are derived from the same measurement source, constructing GVA from GST returns enables us to more cleanly interpret the relative magnitude of effects between export sales and GVA.

Our primary GVA specification uses the logarithm of GVA. We use log values because GVA is highly skewed across firms. Modelling outcomes in logs reduces the influence of extreme values and makes it easier for estimated effects to be interpreted in proportional terms. However, firms with zero or negative GVA cannot be included, as the log is undefined for non-positive values. The sample

used to estimate GVA is therefore restricted to firms that are value adding (i.e., positive gross value added) before and after treatment. We estimate the impact of support on the log of GVA within this group. [26]

In effect, we are estimating whether supported firms expand more rapidly than comparable unsupported firms, conditional on already adding value. As Appendix Table 8 highlights, the emphasis on (pre- and post-treatment) value adding firms excludes around 25% of supported firms and 30% of comparison firms. Similar rates of exclusion, and similar median GVA changes (clustered around zero) among excluded firms in the treated and comparison groups, do not suggest that our treatment effects would be significantly different if there was a way to include non-value adding firms.

We also estimated the effect of Expansion support on the probability of being value adding using all firms with GVA data. This extensive-margin analysis tests whether support increases the likelihood that firms are value-adding at all. We find little evidence of an effect on this margin. This suggests that the programme is not operating primarily by moving firms from negative or zero GVA into positive GVA, and that the economically meaningful margin of adjustment occurs primarily through scale changes among value-adding firms.

A manual inspection of the data suggests that the excluded totals are rather "lumpy", meaning a few firms with outlier years are having a big influence on excluded aggregates. As illustrated in Appendix Table 8 the median change in GVA among excluded firms is close to zero. Moreover, in both the treated and comparison groups, non-value adding firms represent a smaller share of total sales than value adding firms. This is important because, when we get to aggregating up to the total programme impact in Section 5.1, we must account for the fact that firms included in estimation may be larger in scale than excluded firms, resulting in the risk of overstating the impacts if we take a blanket approach to rating up estimated averages to firms outside the estimation.

### B.2.4 Other outcomes

In addition to the two primary outcomes, we examine several additional indicators of firms' internationalisation and performance. Export sales of goods are measured using administrative merchandise trade data collected by the New Zealand Customs Service. This data records the "free on board" value of goods exported from New Zealand at the point they are loaded onto an international carrier. It therefore captures the value of physical goods shipments leaving the country. Over time, the rate with which the Customs Client Codes allocated by the NZ Customs Service can be linked to PENTS has deteriorated (see Fabling & Sanderson, 2016, p. 22). When we analysed the association of the Customs data to other sources, we found it exhibited limited alignment with Business Operations Survey (BOS) self-report data overall, even among firms expected to export physical goods. When we restricted attention to IGF recipients, there are strong correlations in certain goods industries. Correlations remain reasonably strong for goods industries when we consider within-firm changes in export value.

[26] We considered a dual-hurdle type approach, which would separately model (i) whether a firm is value adding; and (ii) the level of GVA among firms that are value adding. This framework is typically useful when there is a substantial mass of non-positive outcomes and when the value adding 'hurdle' is meaningfully distinct from the scale `hurdle'. In our data, however, non-positive GVA is an uncommon outcome among both supported firms and potential comparison firms (non-positive GVA is more common as a pre-treatment covariate). As a result, there is limited variation on the participation margin, which would result in unstable estimates and complexity without materially improving identification.

Appendix Table 8: Treated and comparison groups by value adding firms status

| (a) Treated | Firms not value adding pre- and post-treatment | | | Value adding firms pre- and post-treatment | | |
|---|---|---|---|---|---|---|
| Year | % firms | % recent sales | med. GVA change | % firms | % recent sales | med. GVA change |
| 0 | 23.0% | 16.9% | -$0.1m | 77.0% | 83.1% | $0.8m |
| 1 | 25.2% | 18.0% | -$0.1m | 74.8% | 82.0% | $1.2m |
| 2 | 23.9% | 11.6% | -$0.1m | 76.1% | 88.4% | $1.4m |
| 3 | 24.1% | 16.5% | $0.0m | 75.9% | 83.5% | $1.4m |
| 4 | 26.6% | 17.8% | -$0.3m | 73.4% | 82.2% | $2.0m |
| 5 | 25.5% | 12.2% | $0.0m | 74.5% | 87.8% | $1.7m |
| 6 | 26.0% | 13.4% | $0.0m | 74.0% | 86.6% | $2.3m |
| (b) Comparison | Firms not value adding pre- and post-treatment | | | Value adding firms pre- and post-treatment | | |
| Year | % firms | % recent sales | med. GVA change | % firms | % recent sales | med. GVA change |
| 0 | 30.2% | 8.7% | $0.0m | 69.8% | 91.3% | $0.2m |
| 1 | 30.9% | 10.1% | $0.0m | 69.1% | 89.9% | $0.3m |
| 2 | 31.0% | 11.7% | $0.0m | 69.0% | 88.3% | $0.3m |
| 3 | 30.9% | 13.8% | $0.0m | 69.1% | 86.2% | $0.4m |
| 4 | 30.0% | 15.9% | $0.0m | 70.0% | 84.1% | $0.5m |
| 5 | 28.9% | 19.1% | $0.0m | 71.1% | 80.9% | $0.8m |
| 6 | 28.5% | 22.9% | $0.0m | 71.5% | 77.1% | $1.0m |

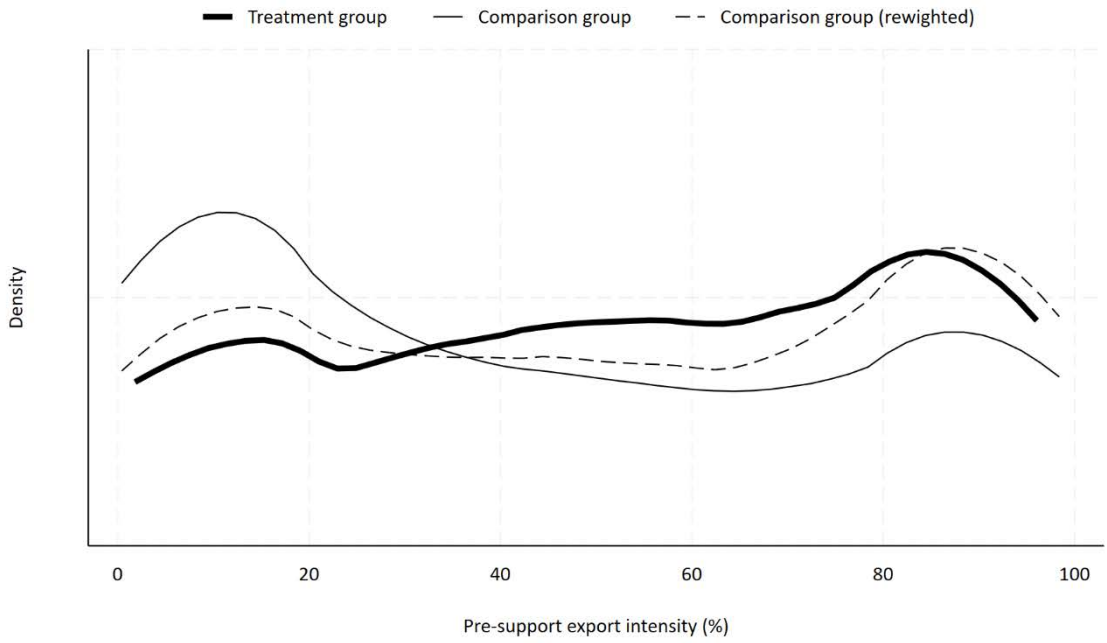
*Notes: GVA change is calculated relative to pre-treatment GVA. med.=median. Percentages are based on values that have been rounded in accordance with Statistics NZ requirements.*

Export intensity measures the percentage of a firm's total sales that come from exports. We use self-reported data from the BOS where available. The Business Operations Survey covers a smaller fraction of supported firms but, where available, it's self-reported nature appears to offer a more valid measure. Where BOS data are unavailable, we use GST return data to approximate export intensity.

Total sales (GST-exclusive) are measured using GST returns data. Employment is measured as the number of full-time equivalent (FTE) workers plus working proprietors, capturing the total labour input used by the firm. Wage outcomes are measured using average gross earnings per FTE employee.

We estimate multifactor productivity (mfp) using the firm-level production data available in the LBD as part of user-generated productivity tables, which includes the necessary capital input data not available from GST data. Mfp is a measure of the relative difference among firm sales that are not explained by inputs. Multifactor productivity is indexed relative to mean productivity within each

Appendix Figure 2: Raw and reweighted density of export intensity




*Notes: The figure shows kernel density measures with bandwidth of 9 and 50 evaluation points.*

industry and is essentially an index of how efficiently a firm turns inputs into outputs, after accounting for other factors. [27]

### B.2.5 Covariates

Variables included ($X_j^S$ or $X_j^O$) in the selection equation (1) and outcome equation (2) are reported above in Table 5, along with mean values for the treated and comparison groups. The selection equation is specified in a semi-flexible way and allows certain characteristics, such as scale and firm experience, to vary between policy phases. This reflects the fact that the Expansion selection process has changed across phases, both formally through changes to eligibility rules and informally through programme implementation. In particular, several policy changes introduced scale-related eligibility thresholds that altered the types of firms able to receive support. To account for this, we allow scale and experience variables to affect treatment differently across policy phases. We also allow the number of recent years of Focus membership to vary by phase, reflecting changes in the availability and quality of Focus segment data over time. This structure allows both the determinants of participation and the broader macroeconomic context to vary over time, while estimating the core selection relationship in a pooled framework.

Propensity score weighting is used to improve the comparability of treated and comparison firms when constructing counterfactual outcomes. The reweighting procedure adjusts the contribution of each comparison observation so that the distribution of observed characteristics more closely aligns with that of the treated firms. In practice, comparison firms that resemble treated firms on observable attributes receive greater weight, while those that are less comparable receive less

[27] We estimate mfp based on industry-level (Cobb-Douglas, gross-revenue, double deflated) production functions for each of 36 industry groups, controlling for inputs of labour, capital, and intermediate goods. These data are restricted to private, for-profit firms in industries that produce for market (the 'measured sector').

weight. This approach helps ensure that estimated treatment effects reflect differences in outcomes rather than systematic differences in observed firm characteristics. By way of illustration, Appendix Figure 2 illustrates how this reweighting affects the distribution of pre-treatment export intensity. It shows how the reweighting procedure reduces weight on comparison firms with low export intensity and increases weight on comparison firms with high export intensity.

We also assess the effectiveness of the propensity score weighting using statistical balancing tests. The results of these tests, which compare the characteristics of treated and comparison firms before and after weighting, are presented in Appendix Table 9. Standardised differences in mean characteristics, expressed in units of standard deviations, show how different the treated and comparison groups are on a given characteristic. After weighting, these differences should be close to zero if the procedure has successfully aligned the characteristics of the two groups. The ratio of the variance of each characteristic between treated and comparison firms is also reported. Ratios close to one indicate that the spread of characteristics is similar across the two groups. Together, these tests provide a summary of how well the weighting procedure balances observable characteristics between treated and comparison firms.

Although the weighted treated and comparison firms have similar means, the dispersion of the recent mfp (in phase 1) and leverage (in phase 3) covariates remains somewhat larger in one group than the other. This suggests some differences in the spread of the distribution rather than systematic mean imbalance. Such patterns are not uncommon in large administrative datasets. Given that the standardised difference is small, these covariates are not a strong predictor of treatment or outcome, common support appears adequate, and the estimated treatment effects are robust to excluding the variables from the model, this variance imbalance is unlikely to materially affect the results.

## Appendix Table 9: Balancing tests

| | Std. Diff | | Var. ratio | | | Std. Diff | | Var. ratio | |
|---|---|---|---|---|---|---|---|---|---|
| Covariate | Raw | Wtd | Raw | Wtd | Covariate | Raw | Wtd | Raw | Wtd |
| Recent ln(total sales) # Ph.1 | 0.94 | -0.01 | 2.05 | 0.99 | Recent mfp # Ph.1 | 0.00 | 0.04 | 5.00 | 1.56 |
| Recent ln(total sales) # Ph.2 | -0.25 | 0.01 | 0.85 | 1.00 | Recent mfp # Ph.2 | -0.01 | 0.01 | 0.90 | 0.98 |
| Recent ln(total sales) # Ph.3 | -0.71 | 0.00 | 0.44 | 0.99 | Recent mfp # Ph.3 | 0.05 | 0.01 | 0.36 | 0.69 |
| Recent sales growth | 0.12 | -0.04 | 1.09 | 0.98 | Recent ln(employment) # Ph.1 | 0.79 | 0.00 | 2.06 | 0.96 |
| Recent export sales growth | 0.12 | -0.05 | 1.04 | 0.99 | Recent ln(employment) # Ph.2 | -0.24 | 0.00 | 0.70 | 0.93 |
| Recent employment growth | 0.30 | -0.03 | 1.48 | 0.97 | Recent ln(employment) # Ph.3 | -0.60 | 0.00 | 0.38 | 0.95 |
| Recent export intensity # Ph.1 | 0.84 | 0.00 | 3.22 | 0.97 | Recent Focus years # Ph.1 | 0.90 | -0.04 | 2.59 | 0.81 |
| Recent export intensity # Ph.2 | -0.11 | 0.00 | 0.85 | 0.93 | Recent Focus years # Ph.2 | -0.11 | 0.00 | 0.97 | 0.96 |
| Recent export intensity # Ph.3 | -0.52 | 0.00 | 0.32 | 0.96 | Recent Focus years # Ph.3 | -0.52 | -0.01 | 0.48 | 0.93 |
| Recent ln(export sales) # Ph.1 | 0.94 | 0.00 | 2.15 | 0.99 | Recent ln(value added) # Ph.1 | 0.94 | -0.01 | 2.08 | 0.99 |
| Recent ln(export sales) # Ph.2 | -0.23 | 0.01 | 0.87 | 1.00 | Recent ln(value added) # Ph.2 | -0.25 | 0.01 | 0.84 | 1.01 |
| Recent ln(export sales) # Ph.3 | -0.70 | 0.00 | 0.44 | 1.00 | Recent ln(value added) # Ph.3 | -0.70 | 0.00 | 0.45 | 0.99 |
| Age # Ph.1 | 0.86 | -0.01 | 2.30 | 1.06 | Recent value added growth | 0.10 | -0.03 | 1.06 | 0.99 |
| Age # Ph.2 | -0.25 | 0.00 | 0.77 | 0.96 | <$500k recent R&D Exp. | -0.07 | 0.06 | 0.99 | 1.02 |
| Age # Ph.3 | -0.70 | 0.00 | 0.35 | 1.00 | >=$500k recent R&D Exp. | 0.32 | -0.10 | 1.30 | 0.96 |
| Recent ln(capital) # Ph.1 | 0.94 | 0.00 | 2.05 | 1.00 | Leverage # Ph.1 | 0.70 | -0.05 | 2.70 | 0.81 |
| Recent ln(capital) # Ph.2 | -0.25 | 0.00 | 0.84 | 1.00 | Leverage # Ph.2 | -0.10 | 0.00 | 0.85 | 0.91 |
| Recent ln(capital) # Ph.3 | -0.70 | 0.00 | 0.44 | 0.99 | Leverage # Ph.3 | -0.33 | 0.00 | 0.43 | 1.31 |
| Enterprise group member | 0.21 | 0.01 | 1.03 | 1.00 | Foreign ownership | -0.13 | -0.01 | 0.75 | 0.97 |

*Notes: Industry and time covariates are also included. Weighted standardised differences range from -0.05 to 0.04, and variance ratios from 0.89 to 1.08 for industry covariates. Weighted standardised differences (Std. Diff) range from -0.05 to 0.02, and variance ratios ( Var. ratio) from 0.89 to 1.08 for time covariates. ln = log. mfp = multifactor productivity. Ph. = Phase.*