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From spending to capability

Can New Zealand's defence industry strategy capture economic value while building sovereign capability?

"Freedom is the sure possession of those alone who have the courage to defend it."

Pericles (c.430 BC)

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1. INTRODUCTION

This report examines how New Zealand can convert rising defence expenditure into sovereign industrial capability and measurable economic value. It is prompted by the Defence Capability Plan's commitment to lift spending towards 2% of GDP at a time when almost all major procurement flows offshore, returning no direct GDP benefit.

When this study was conceived, the funding of defence start-ups and small and medium enterprises was largely absent from New Zealand's policy conversation. Its original intent was therefore to establish the economic case for such funding and to propose mechanisms for getting it started. During the writing of this report, however, that position shifted. The Government released its Defence Industry Strategy and has begun trialling several of the early-stage funding mechanisms examined here.

This movement is welcome and marks genuine progress against a long-standing deficit. It does not, however, complete the task. The analysis that follows identifies structural gaps, particularly in follow-on capital, procurement, and durable institutional design, that remain unaddressed and must be resolved if a nascent domestic defence industry is to be crystallised rather than merely seeded.

Drawing on the defence economics literature, comparative analysis of international funding models, case studies and interviews with industry, investment and policy participants, the report diagnoses why the current approach fails to capture full economic value and recommends a three-stage response: an accelerator for early-stage innovation, a follow-on capital fund to close the Series A–C gap, and structural reforms to procurement and long-term planning.

Section 1 sets out the strategic context and the core problem; Section 2 the methodology; Sections 3–5 the economic framework, New Zealand's current state, and the capital and structural gaps; Section 6 the international funding models; and Section 7 the recommendations.

1.1 The Strategic Context

Colin S. Gray warned for over three decades that old wars will remain new wars. Gray's work on world order identifies four enduring interests for any small state: national security, regional stability, a robust partner network, and an effective rules-based order.¹

Multipolar systems compel smaller actors to hedge, align or be coerced. To address this multipolarity proactively New Zealand (and Australia) will have to behave differently than at any time in their histories.

New Zealand cannot rely on the geographic isolation argument any longer. Chinese naval forces have conducted live firing exercises in the Tasman Sea² and have been developing 6th Generation technology such as hypersonic missiles and fighter aircraft,³ as well as bolstering forces such as ICBMs and aircraft

¹ Colin Gray, *Another Bloody Century: Future Warfare* (London: Phoenix, 2005).

² <https://www.rnz.co.nz/news/political/543112/chinese-navy-live-fire-drills-saga-marks-failure-in-china-nz-relationship-peters>

³ <https://techtracker.aspi.org.au/>

carriers⁴ to exert force well beyond the Second Island Chain;⁵ growth noted as a concern in the Defence Industry Strategy.⁶

New Zealand is acutely vulnerable on both sides of its trade ledger. On the import side, approximately 60% of total energy needs are supplied by fossil fuels, almost entirely as refined product from Singapore and South Korea via sea lanes that run through contested maritime chokepoints. The Covid Level 4 lockdown demonstrated what demand-side disruption alone can do: an annualised 37% drop in GDP⁷. The ongoing uncertainty in the Persian Gulf is highlighting New Zealand's supply-side vulnerabilities.

China, a state actor whose growing blue-water naval capacity was on display in the Tasman Sea, could replicate that disruption deliberately and at scale. New Zealand's geographic isolation, long treated as a strategic buffer, is more accurately understood as a supply chain liability once the assumption of benign sea lanes is removed, additionally New Zealand cannot shield cyber links⁸, or growing threats from space and other emerging technologies⁹.

Government agencies warn of numerous emerging threats¹⁰ and of shifts from rules-based to power-based order, economics to security and efficiency to resilience.¹¹

1.2 The Core Problem

Publicly, the New Zealand government has growing rhetoric that we cannot have economic security without national security^{12 13} and that New Zealand needs to build credible deterrence and greater lethality.¹⁴ This rhetoric indicates a pivot towards more overt posturing and balancing rather than hedging in a multipolar order where New Zealand faces three overlapping considerations: economic coercion by China due to alignment with US-led security blocs; entrapment in allied campaigns without adequate self-defence contribution; and abandonment if allies perceive New Zealand as a free rider unwilling to invest in its own security.

However, after approximately 30 years of under-spending, defence spending needs to be not just increased but spent on the right things, leveraging domestic markets while communicating economic value to taxpayers. The Defence Capability Plan ("DCP")¹⁵ indicates a rise in spending on defence to 2% of GDP over the next four years. However, the backdrop is a poor economy and the focus to replace and reinstate

⁴ <https://www.bbc.com/news/articles/c62e0yx39g5o>

⁵ Kosuke, T. "A Chinese Aircraft Carrier Crossed the Second Island Chain for the First Time." *The Diplomat*, June 10, 2025.

⁶ Defence Industry Strategy, NZ Ministry of Defence, October 2025.

⁷ <https://www.rbnz.govt.nz/-/media/ReserveBank/Files/Publications/Analytical%2520notes/2020/AN2020-04.pdf>

⁸ Burton, Joe. "Small States and Cyber Security: The Case of New Zealand." *Political Science* 65, no. 2 (2013): 216–38. <https://doi.org/10.1177/0032318713508491>

⁹ Steff, R. "New Zealand's Material Hand: Physical Geography, Economics, Soft Power, the Foreign Policy System, Defence Force, Memberships, and Alliances." In *New Zealand's Geopolitics and the US-China Competition*. Palgrave Macmillan, Singapore, 2024. https://doi.org/10.1007/978-981-96-0282-7_3

¹⁰ New Zealand Security Threat Environment. NZSIS Assessment 2025.

¹¹ Ministry of Foreign Affairs and Trade, "Navigating a shifting world," June 2023.

¹² cf. Pericles c.430BC: "prosperity and true happiness can only be for the free, and that freedom is the possession of those alone who have the courage to defend it."

¹³ New Zealand Ministry of Defence. *Defence Capability Plan 2025*. Wellington: Ministry of Defence, April 2025. <https://www.defence.govt.nz/assets/publications/publications/Defence-Capability-Plan-25.pdf>

¹⁴ https://issuu.com/nzija/docs/new_zealand_international_review_july_august_2025/s/102335621

¹⁵ Defence Capability Plan 2025. *ibid*.

dilapidated resources (software and buildings) and aged materiel (Boeing 757s, Sea Sprite Helicopters and Frigates) rather than equip the NZDF to face new challenges of modern warfare.

New Zealand, and to a lesser degree Australia, does not have a significant domestic defence industry¹⁶ and due to limited involvement of domestic industry, is reliant on imports which have no effect on growing GDP. The purchase and import of large predominantly US or European¹⁷ manufactured machinery such as helicopters and frigates has no direct GDP benefit as the import is effectively cancelled by the government spending, although capital assets increase. Creating value directly for New Zealand in all defence contracts has been identified in the Defence Industry Strategy¹⁸ but more can be done.

In a tightening global fiscal environment with a suppressed economy, spending on defence will be highly scrutinised and must be prioritised amongst other equally important areas such as education and healthcare.¹⁹

1.3 Research Questions and Thesis

This thesis addresses three questions: how should New Zealand frame the economic case for domestic defence spending; why does the current approach fail; and what mechanisms could best catalyse a domestic defence industry.

One area requires explanation upfront. This thesis does not attempt to quantify deterrence value, and that is a deliberate analytical choice rather than a gap. Deterrence exists in the mind of a potential adversary and cannot be read off a balance sheet. Attempts to assign it a monetary value, including the most rigorous yet undertaken for New Zealand²⁰, produce figures that shift by 20% or more with a one percentage point change in the discount rate, furthermore, owning a capability is different to willingly deploying one.

These are not problems better methodology solves at this level of analysis. Game-theoretic modelling and probabilistic simulation capable of producing reliable deterrence valuations would require a separate programme of research. What this thesis examines instead is the tractable side of the question: the direct economic value domestic defence production creates versus solely import dependency; the structural capital market failure in follow-on funding that prevents that value from being captured; and the resilience of a domestic industrial base, understood as a measurable structural property distinct from deterrence. The strategic case for deterrence is retained where context demands it, but it is not the object of analysis.

The thesis argues that while funding accelerators are necessary to catalyse early-stage defence innovation, they are insufficient on their own to capture the full economic value of defence spending. New Zealand needs a comprehensive approach comprising three stages:

¹⁶ <https://www.aspistrategist.org.au/you-call-that-a-defence-industry/>

¹⁷ <https://www.iiss.org/online-analysis/military-balance/2024/10/europes-defence-procurement-since-2022-a-reassessment>

¹⁸ p22, Defence Industry Strategy. *ibid.*

¹⁹ Guns v Butter was first espoused by Nobel prize-winning economist Paul Samuelson in 1948 to demonstrate the trade-off between productive and non-productive spending.

²⁰ NZIER. Valuing the Indeterminable.

- an accelerator for early-stage technology development (which the DIS addresses)²¹.
- a follow-on capital fund to bridge the critical gap at Series A-C stage, and
- structural reforms including procurement changes, long-term strategic planning, and hub development to ensure sovereign capability.

The direct economic value proposition is straightforward: domestic defence production creates direct, measurable GDP contribution. Beyond this, indirect economic value is created through research and development spillovers, skill development, and industrial resilience, the capacity to produce, sustain, and adapt military systems without external dependency.

²¹ New Zealand Ministry of Defence. New Zealand Defence Industry Strategy: Delivering Capability Faster. Wellington: Ministry of Defence, October 2025. <https://www.defence.govt.nz/publications/new-zealand-defence-industry-strategy-delivering-capability-faster>

2. METHODOLOGY

2.1 Research Design

This report employs a qualitative design supported by a systematic review of defence economics and capital markets literature and original qualitative empirical research. The literature review draws on peer-reviewed scholarship in defence economics, strategic studies, and public finance, supplemented by grey literature from international defence agencies, government policy documents, and think-tank publications.

The conceptual framework, centring on the direct/indirect value differential, the Macmillan Gap analogy, and the insurance/deterrence framing, was developed inductively from this literature before being tested against the empirical findings.

2.2 Interviews

Several semi-structured interviews were conducted in Q2 2026 with practitioners drawn from New Zealand's defence-industrial ecosystem. Interviewees were selected purposively to capture perspectives across three groups: (i) active technology companies with existing or potential defence applications; (ii) former New Zealand Defence Force officers with procurement and capability experience; and (iii) private-sector advisers with knowledge of capital markets and defence funding structures. This range was designed to triangulate supply-side, demand-side, and financial perspectives on the core research questions.

Five interviews were fully recorded and transcribed; two recording failures meant detailed contemporaneous notes were taken for those sessions. All participants were informed of the research purpose and consented to participation. Interview questions are reproduced in Appendix B; a full thematic analysis is provided in Appendix C. This study received ethics approval #4000032239.

Where interview findings are cited in the text, proportional attribution is used where possible rather than anonymous singular attribution, to convey the weight of evidence without compromising participant confidentiality.

2.3 Scope

Two areas are explicitly outside the scope of this study. First, quantitative deterrence valuation and formal modelling of security outcomes. As Section 3.3 demonstrates, the NZIER work commissioned by the NZDF illustrates precisely why: small changes in input assumptions produce large variation in output values.

Second, this thesis does not attempt a full economic multiplier analysis of defence spending. RUSI has cautioned against treating defence investment as an unqualified economic catalyst, and governments frequently overestimate procurement multipliers.^{22 23} The economic case advanced here is deliberately narrower and more defensible: New Zealand has identifiable structural market failures in follow-on capital, IP retention and procurement design, and targeted intervention to correct those failures is economically justifiable on its own terms. That is a materially different claim from a general defence-spending dividend.

²² Sylvia, N. and Rogaly, K. "The False Promise of Defence as Prosperity." Royal United Services Institute. <https://www.rusi.org/explore-our-research/publications/commentary/false-promise-defence-prosperity>

²³ RUSI notes the EU Commission states a 0.5% GDP uplift for a 1.5% increase in defence spending but the Netherlands conclude independently a near-zero uplift.

2.4 Limitations

The principal limitation of this study is the small interview sample, which reflects the early-stage nature of New Zealand's defence industry and the limited pool of practitioners with direct experience of both defence procurement and private capital.

3. THE ECONOMIC VALUE OF DEFENCE SPENDING

3.1 Theoretical Foundations

This report operates within three intersecting bodies of theory. The first is the strategic studies associated with Colin S. Gray, whose account of enduring geopolitical competition among great powers and its implications for small states frames the threat environment to which New Zealand's defence-industrial policy must respond. Gray's insistence that geography, culture, and history produce durable national security interests, and his scepticism of technological substitutes for strategic commitment, underpin this report's emphasis on sovereign capability over imported hardware.²⁴

The second is Schelling's bargaining framework, in which deterrence operates through the credible threat of force rather than its kinetic application; the intent being to convince a potential aggressor it will be denied its objectives. As Schelling argues, "the art of commitment"²⁵ requires a potential aggressor to believe that the defending state is genuinely committed to the values at stake. For a small state such as New Zealand, this has direct implications for how defence spending is structured: capability that exists on paper but cannot be sustained, scaled, or credibly deployed does not constitute deterrence in Schelling's sense. Domestic industrial capacity, the ability to produce, maintain, and adapt military systems without external dependency, is therefore a component of deterrence, not merely an economic policy choice.

The third is the defence economics literature, particularly Emile Benoit's foundational work on defence spending and economic growth²⁶. Benoit's argument that moderate, well-directed defence investment can act as a development catalyst through infrastructure, skills, and technological spillovers provides the theoretical grounding for this report's distinction between productive and unproductive defence expenditure. Hartley's subsequent elaboration of defence economics methodology, including his call for more sophisticated output valuation approaches analogous to QALYs in healthcare, informs the direct/indirect value framework developed in Section 3.2.

Together, these theoretical strands support the central analytical claim: the question is not how much New Zealand spends on defence but how it structures that spending to generate domestic economic value, retain intellectual property, and build the industrial resilience credible capability requires.

3.2 Why Traditional Valuation Fails

The typical approach to measuring the value of Government spending is solely to consider the output as the cost of inputs: a practical convention within the national accounts, and one that economists themselves frequently criticise for obscuring productivity and secondary benefits.²⁷ Nobel prize-winning economist Joel Mokyr notes economic outputs are also determined by "beliefs, values, hopes and aspirations"²⁸ and thus resist straightforward quantification.

²⁴ Gray noted in *Modern Strategy* the tendency to mistake changes in the tools and tactics of war for changes in the nature of war or strategy itself.

²⁵ Schelling, *Arms and Influence* (1966).

²⁶ Benoit, Emile. "Growth and Defence in Developing Countries." *Economic Development and Cultural Change* 26, no. 2 (1978): 271–80. <https://doi.org/10.1086/451015>

²⁷ Wooton, D. "Joel Mokyr's Economy of Ideas." <https://engelsbergideas.com/essays/joel-mokyr-economy-of-ideas/>

²⁸ *ibid*, Wooton.

Hartley identifies the same problem in defence, specifically the input-output approach, that ignores the actual value of security, deterrence, and peace that are only truly appreciated in their absence.²⁹ The RBNZ's 37% annualised GDP fall during the Level 4 Covid lockdown illustrates the scale of disruption that loss of normal operating conditions can produce, though it stops short of a deterrence valuation.³⁰

The direct component is straightforward to quantify. The indirect component, encompassing capability, protection, and resilience, is considerably harder to measure and is where defence spending diverges most sharply from other forms of public expenditure.

3.3 A Framework for Defence Economic Value

A simple matrix illustrates how defence economic value can be assessed:

	Direct Economic Value	Indirect Economic Value
Domestic production and export	GDP plus innovation, employment, skill development, capital productivity, export earnings	Determined through output valuation methodology: trade route protection, R&D spillovers, resilience, sovereignty
Importing	None (Government spending is cancelled out by import amount)	Hard to measure directly; protects broader economy and way of life but forgoes direct returns

As RAND notes,³¹ “peace and stability” is hard to define and measure but important in quantifying to the public.

Why domestic production creates direct economic value: Producing defence equipment domestically generates measurable GDP through manufacturing output, employment, and business revenue. The government spending flows into the domestic economy rather than being cancelled out by imports.

The Economist notes that for an additional 1% of an industry’s value-added in defence R&D, its annual productivity growth rises by 8.3%.³² RUSI has reported that the European Commission’s Spring 2025 study estimates that defence spending reaching 1.5% of GDP could raise real GDP by 0.5% above baseline.³³

Additionally, through-life support and maintenance must be conducted offshore; the recently purchased RNZAF Poseidon airframes (P-8s) are serviced in Australia,³⁴ and the ANZAC frigate replacement will most likely be built in Western Australia.³⁵ Where NZ has purchased in-country maintenance the unit costs are considerably higher than comparative allies purchasing the same equipment.³⁶ While the imported

²⁹ Keith Hartley, *Defence Economics Achievements and Challenges*, Cambridge Elements, 2020.

³⁰ <https://www.rbnz.govt.nz/-/media/ReserveBank/Files/Publications/Analytical%2520notes/2020/AN2020-04.pdf>

³¹ RAND Europe. *Understanding the Value of Defence*.

³² <https://www.economist.com/leaders/2025/06/26/how-the-defence-bonanza-will-reshape-the-global-economy>. N.b the article relates to US spending with Primes.

³³ Gyimesi, Balazs. “Who Will Pay the Cost of Freedom in Europe?” RUSI Commentary, 13 March 2026. <https://www.rusi.org/explore-our-research/publications/commentary/who-will-pay-the-cost-of-freedom-in-europe>

³⁴ <https://www.rnz.co.nz/news/national/556423/defence-force-can-t-service-poseidon-planes-sends-them-to-australia-instead>

³⁵ It is worth highlighting the Australian intent to purchase replacements for the ANZAC frigates with the Japanese Mogami-class vessels with 70% of the order to be built in WA.

³⁶ This relates to the recent MH-60 purchase that cost \$400m per unit whereas Australia paid \$82m each. <https://www.rnz.co.nz/news/political/572387/why-nz-s-new-seahawk-maritime-helicopters-cost-400-million-each>

equipment still provides benefits through deterrence capability, New Zealand forgoes all the direct economic benefits and many of the indirect innovation spillovers.

Quantifying indirect value: The indirect economic value of defence is real but resists reliable quantification. The most rigorous attempt in the New Zealand context, a NZIER study commissioned by the NZDF, valued the Naval Combat Force using three complementary approaches: Cabinet spending decisions (\$5.8 billion over 30 years), expert scenario analysis (\$3.7 billion) and public stated preferences (\$3.9 billion for delivered outputs, \$9.8 billion for capability retention).³⁷ The spread of results is instructive, the public valued capability at nearly twice what Cabinet revealed preferences implied, a one percentage point change in the discount rate shifted assessed value by approximately 20%, and respondents demonstrably conflated the value of possessing a capability with the value of deploying it.³⁸

3.4 Evidence: The Development Catalyst Effect

Benoit suggested that in developing countries, moderate defence spending could stimulate growth by providing infrastructure, training, and organisational spillovers and that defence could act as a development catalyst in the right setting and managed correctly.^{39 40 41} New Zealand faces an analogous challenge: building industrial capability in a sector dormant for decades.

Recent studies note a “Goldilocks Zone” of not too much or too little spending is necessary, finding that excessive spending harmed the wider economy as it diverted spending from education and health, but too little spending, once a baseline is established, damages growth and stability.⁴² The effectiveness of the spend was identified as most important.⁴³ This research reinforces that New Zealand needs to move beyond just spending as a function of GDP but focus on effectiveness and efficiency.

Defence spending as a percentage of GDP is a crude measure. Countries with high labour costs, poor procurement practices, or defence industries at different established stages will differ irrespective of percentage of GDP and untargeted defence spending rarely directly lifts standards of living nor increases overall prosperity; it needs to be framed as an insurance policy^{44 45}. On a simplistic analysis, one week of disrupted dairy exports⁴⁶ would equate to the annual interest on a NZ\$7 billion defence bond issued at 6%⁴⁷, illustrating the economic stakes of maritime insecurity without requiring a formal deterrence valuation.

³⁷ NZIER. “Valuing the Indeterminable? Summary for NZDF of the Key Research Findings on the Value Proposition of the New Zealand Naval Combat Force.” Wellington: New Zealand Institute of Economic Research, February 2023.

³⁸ p4 NZIER *ibid*.

³⁹ m

⁴⁰ Benoit, Emile. “Growth and Defense in Developing Countries.” *Economic Development and Cultural Change* 26, no. 2 (1978): 271–80. <https://doi.org/10.1086/451015>

⁴¹ Grobar, Lisa Morris, and Richard C. Porter. “Benoit Revisited: Defense Spending and Economic Growth in LDCs.” *Journal of Conflict Resolution* 33, no. 2 (1989): 318–45.

⁴² Akume, Michael Aondohemba, and Seyi Saint Akadiri. “Unpacking the Impact of Military Spending on Economic Growth in Resource-Rich Nations.” *International Journal of Economic Policy Studies* 19, no. 2 (2025): 275–98. <https://doi.org/10.1007/s42495-025-00151-9>

⁴³ *ibid* pp296.

⁴⁴ Sylvia, N. and Rogaly, K. *ibid*.

⁴⁵ Sylvia and Rogaly, “The False Promise of Defence as Prosperity.”

⁴⁶ Approximately NZ\$24bn in 2025 equating to approximately NZ\$450 million per week.

⁴⁷ At the point of writing this is assumed to be a realistic and attractive long-term rate

Further evidence for defence as an economic catalyst comes from Israel's experience. The Talpiot Program,⁴⁸ which has existed since the 1970s, has led to the country's significant technology-led national security system⁴⁹ and substantial economic growth where the combined aerospace, defence, and cybersecurity industries accounted for roughly 15% of Israel's annual exports in 2024.⁵⁰ The program has also produced value in other sectors⁵¹ and world-class research organisations, even more remarkable given only 2,000 people have graduated from the program since its inception. A focused, relatively small investment in human capital and defence innovation generated outsized economic returns, and the lesson is directly applicable to New Zealand's situation.

3.5 The Productivity Imperative⁵²

In creating solutions there needs to be awareness that the New Zealand economy faces strained decision-making on spending on health, education and infrastructure but is also facing an evolving external threat environment,⁵³ echoed by the New Zealand Treasury.^{54 55}

The government needs to foster the growth of a domestic defence industry, and this means funding and other enablers to technologies that meet emerging threats before they occur and to provide the best value for the broader New Zealand economy. Defence's customer is primarily the country as well as New Zealand's allies, and there is no substitute or replacement product for defence. Whilst the sector will never be a large employment creator the focus should be on capital productivity and innovation that generates spillovers into the broader economy where value can be captured and quantified.

The value of defence spending to a sceptical public is best framed as economic insurance: the spending protects the conditions within which normal economic activity is possible. That framing is honest about what deterrence does without claiming to quantify it precisely. The productivity argument is analytically distinct and addresses a different audience: well-structured domestic investment generates R&D spillovers, human capital, and export capability, all of which produce measurable returns rather than simply reducing risk. Both framings are valid and non-contradictory.

The balance requires acknowledging fiscal constraints while ensuring spending targets identifiable structural failures rather than relying on a general defence dividend. Outcomes from defence-led industrial policy are mixed and governments frequently overestimate procurement multipliers.^{56 57}

⁴⁸ <https://catalog.huji.ac.il/pages/WebChugInfoNew.aspx?year=2020&faculty=2&entityId=520°reeCode=71&language=en>

⁴⁹ <https://www.palladiummag.com/2024/01/26/the-u-s-can-learn-from-israels-cognitive-meritocracy/>

⁵⁰ *ibid.*

⁵¹ In 2023 with a population not even double that of NZ, Israel had 89 unicorn startups (valued at over \$1bn).

⁵² Productivity is an economic measure of how much output is produced from a given quantity of inputs.

⁵³ New Zealand's Productivity Challenge. IMF, June 2025. *ibid.*

⁵⁴ Long-Term Financial Statement 2025. NZ Government Treasury. *ibid.*

⁵⁵ New Zealand needs to lift its capital productivity and defence-related labour productivity; overall NZ is one of the most undercapitalised economies in the OECD and has been attributed to slow adoption of new technology, geographic location and declining quality in education. Australia's capital per hour worked is roughly 40% higher.

⁵⁶ Sylvia, N. and Rogaly, K. *ibid.*

⁵⁷ New Zealand's economic case rests on something narrower: a demonstrated follow-on capital gap, IP leakage, and procurement bias toward overseas primes constitute identifiable market failures. Targeted intervention to correct those failures is justifiable on its own terms, independent of any broader growth claim.

New Zealand's fiscal position is tightening rather than easing; Fitch⁵⁸ projects gross government debt rising towards 56% of GDP by FY27 and has revised the sovereign outlook to negative. Scope for defence investment exists but is narrowing, which sharpens rather than weakens the case for spending that generates measurable domestic returns. History dictates a successful total national effort requires forethought, legislative authority and a sustained, coordinated investment long before crisis breaks.⁵⁹

The exact capabilities and readiness of New Zealand businesses in defence remain poorly defined. This lack of visibility is a significant barrier to aligning national needs with industry capacity. The DIS identifies insufficient knowledge about New Zealand's industry capability, not even knowing the number of companies able to deliver for defence⁶⁰. This is of great concern; how can companies, especially small ones with limited breadth and experience, know what products are needed if the participants, let alone the capability, is not known?

The evidence examined here suggests that the window for building capability, while still open, is narrowing. The literature on defence industrial development consistently identifies lead times of a decade or more to establish a functioning supply chain; given New Zealand's current baseline, the timing of any intervention is therefore analytically significant.

⁵⁸ <https://www.fitchratings.com/research/sovereigns/fitch-revises-outlook-on-new-zealand-to-negative-affirms-at-aa-20-03-2026>

⁵⁹ Ablong, M. "Industrial Mobilisation is Defence's True Test." <https://www.aspistrategist.org.au/industrial-mobilisation-is-defences-true-test/>

⁶⁰ p14, Defence Industry Strategy.

4. NEW ZEALAND'S CURRENT STATE

4.1 Strategic Shift: Hedging to Balancing

Historically, New Zealand and many others have relied upon the de facto “world policeman” role of the USA, which is now openly declaring that it will enter conflicts that suit its interests first and foremost.^{61 62} At the very least, US behaviour has become erratic and unpredictable enough that reliance on its commitments is being questioned by traditional allies across NATO, the EU, South Korea and Japan.⁶³ Trump’s second-term National Security Strategy⁶⁴ is candid about the underlying logic: American primacy is the goal, not collective security.

New Zealand needs a realistic assessment of its current hedging posture, balancing trade with China against its alignment with Western defence and intelligence, which functions well while threats remain grey and sub-kinetic.⁶⁵ If rivalry intensifies, New Zealand must decide to pick a side, as it is too logistically vulnerable to remain neutral⁶⁶ and once the decision is made, New Zealand will need to be demonstrably useful.⁶⁷

This signals a pivot towards balancing rather than hedging. Diversifying trading options across the UAE, India, the EU and the UK is a hedging strategy, but if unsuccessful it risks loss of strategic autonomy, economic insecurity, entrapment and ultimately loss of sovereignty.^{68 69}

Balancing, by contrast, involves blocking the ambitions of the other side and taking actions to prevent dominance.⁷⁰ It is the more proactive posture and the one the evidence suggests New Zealand is moving toward. Kuik considers hedging contentious and even dangerous, a source of instability, but notes it is predictable behaviour for small states until the chips are down.^{71 72}

⁶¹ Robert Looney, Market Effects of Naval Presence in a Globalized World, Naval Postgraduate School, 2002.

⁶² White, H. Hard New World: Our Post American Future. Quarterly Essay, 2025.

⁶³ Recent examples include stating NATO Article 5 was open to interpretation and 24 hours later saying “all in” and turning Ukraine military supply flights around mid-flight.

⁶⁴<https://www.whitehouse.gov/wp-content/uploads/2025/12/2025-National-Security-Strategy.pdf>

⁶⁵ Korolov, A. “Between Scylla and Charybdis: Hedging and Australia’s Foreign Policy Amid Intensifying US-China Rivalry.” *Journal of Indo-Pacific Affairs*, September-October 2024.

⁶⁶ Both Switzerland and Sweden were neutral during WWII but geographically located as to maintain supply for domestic population. Playing both sides is not without cost: Sweden openly allowed transit of Nazi troops whereas Switzerland actively enabled financial transactions.

⁶⁷ The NZSIS in its Threat Assessment labels China, Russia and Iran as undertaking political interference, pointing clearly as to which side the Government intends to come down on.

⁶⁸ The issue with India is that dairy exports, the predominant NZ export product, will most likely be carved out of any trade deal. India’s recent pivot towards China-Russia in light of public disagreements with President Trump over India buying Russian oil do not help NZ’s diversification.

⁶⁹ Korolov *ibid*.

⁷⁰ Korolov *ibid*.

⁷¹ Kuik, C-C. “Getting Hedging Right: A Small-State Perspective.” *China International Strategy Review* (2021) 3:300–315.

⁷² Of note and relevance to the core theme of this thesis, in economic parlance, a hedge (an option) only works if there is time value in keeping it until it expires.

Economic implications of the strategic shift: The three overlapping risks identified in Section 1.2, coercion, entrapment and abandonment, sharpen considerably once hedging gives way to balancing. Each is amplified by the absence of credible domestic industrial contribution to collective security.

Australia, New Zealand's only defence ally, faces the identical trade dependency dilemma in the Indo-Pacific and has responded by substantially increasing defence spending.⁷³ Both economies face a Hobson's Choice: demonstrating credible contribution to allied security while managing a trading relationship with China that accounts for 25% of New Zealand's exports by value and 30% of Australia's.⁷⁴

A transition from hedging to balancing raises the threshold of credibility New Zealand's defence posture must meet. Hedging tolerates ambiguity and dependence on imported capability. Balancing demands a demonstrable, self-sustaining contribution to collective security.⁷⁵ Without domestic industrial capacity, that credibility cannot be sustained. The capability gap and the capital gap analysed in the following sections are therefore not merely economic problems: they are the material expression of a strategic choice that has not yet been matched by a corresponding industrial policy.

4.2 The Capability Gap

New Zealand's Defence Capability Plan commits spending to 2% of GDP over four years, but a contracting economy, depreciating currency and a DCP heavily weighted toward replacing dilapidated resources, software, buildings and aged helicopters, means the trajectory is toward baseline restoration rather than modern capability. To be genuinely more resilient and self-reliant requires spending on a sector where New Zealand has never meaningfully done so.

Critics acknowledge the spending growth but note insufficient focus on the evolving shape of modern conflict, with targets such as sustaining land combat operations for 24 months described as commendable but unrealistic.⁷⁶ New Zealand should leverage initially on what it demonstrably does well: maritime, small force, special forces and leadership domains.⁷⁷

A structural feature of New Zealand's position, usually framed as a weakness, warrants reappraisal here. Economic historian Alexander Gerschenkron observed that late industrialisers can adopt best-practice technology directly rather than bearing the iterative cost of transitioning through obsolete stages. The store of foreign technology available to a lagging country offers an advantage that allows the latecomer to grow fast and avoid some of the costs its predecessors incurred starting from scratch⁷⁸.

⁷³ Australia has increased its defence spending substantially and is a member of the AUKUS tripartite agreement; it recently signed the Geelong Treaty, a 50-year agreement to co-operate with the UK on developing nuclear powered submarines. The US has not categorically confirmed basing Virginia class SSNs in Australia due to poor fabrication rates and cost overruns in the new Columbia-class submarines, now estimated at \$16 billion each. See: Bloomberg, July 22, 2025; Nuclear-Powered Submarine Partnership and Collaboration Agreement, Geelong, 26 July 2025.

⁷⁴ NZ Stats; China accounts for 25% of NZ exports by value in 2025.

⁷⁵ One need look no further than France where its nuclear and naval strike capability can be seen as autonomy in decision-making but it is still part of NATO.

⁷⁶ <https://www.thepost.co.nz/politics/360611574/how-spend-billions-defence-force>

⁷⁷ Anglim, S. "Little Spartans: How Small State Militaries Use Special Forces to Punch Above Their Weight." *Military Strategy Magazine*, November 2025. <https://www.militarystrategymagazine.com/exclusives/little-spartans-how-small-state-militaries-use-special-forces-to-punch-above-their-weight/>

⁷⁸ Gerschenkron, Alexander. *Economic Backwardness in Historical Perspective: A Book of Essays*. Cambridge: pp.472-475. Gerschenkron's second thesis holds that the store of foreign technology available to a lagging country offers an "advantage" that

New Zealand has no entrenched defence manufacturing that will resist change, and Ukraine has demonstrated what current best practice looks like: innovation cycles of approximately three months, drone swarms, AI-enabled ISR, autonomous maritime systems and low-cost precision munitions.⁷⁹

With the right capital structures and procurement pathways, it can orient directly toward current-generation capability in the domains that suit its geography and strategic interests. The constraint is not the absence of industrial history it is the absence of the capital and structural frameworks to acquire and develop that capability domestically, which is precisely what Sections 5 and 7 address.

Maintaining open and free trade requires acknowledging the status quo no longer holds. At minimum, a credible deterrent is needed to ensure freedom of navigation for critical imports and protection of vital subsea cables. To paraphrase Schelling, deterrent effect is only secured if a would-be aggressor genuinely believes New Zealand is committed to the protection of the values at issue.⁸⁰

Whilst quietly upgrading defence and alliances while maintaining cooperative ties with competing powers is now the default strategy for Southeast Asian and Australasian middle powers,^{81 82 83} Australia and New Zealand both face the same credibility gap.⁸⁴ The latecomer, properly resourced, is not a disadvantage. It is a strategic opportunity not yet taken but must be recognised and acted upon.

References and interviews reinforce the view that New Zealand's private sector currently lacks both the capital and the institutional structures to help deliver it. Defence businesses grow differently to traditional growth companies by the very nature of what they do and who the customer is, as Section 5 examines.

allows the latecomer to grow fast, perhaps faster than its predecessors, and avoid the misery the latter went through when they started *ab ovo*.

⁷⁹ Ukraine Ambassador to NZ and Australia, speech at NZIIA conference, June 2025.

⁸⁰ Thomas C. Schelling. *Arms and Influence* (New Haven: Yale University Press, 1966) Ch 2-3.

⁸¹ <https://www.airuniversity.af.edu/JIPA/Display/Article/3900102/between-scylla-and-charybdis-hedging-and-australias-foreign-policy-amid-intensi/>

⁸² <https://www.9dashline.com/article/southeast-asian-maritime-states-are-hedging-to-stay-afloat-amidst-us-china-rivalry>

⁸³ <https://eastasiaforum.org/2025/06/18/southeast-asia-deepens-hedging-amid-trump-2-0-turbulence/>

⁸⁴ Rahman, C. and Gopal, P. "The Role of Deterrence in Australian Strategic Thought." *Journal of Indo-Pacific Affairs*, Sept-Oct 2024.

5. THE CAPITAL AND STRUCTURAL GAPS

5.1 Why Defence Doesn't Fit Standard PE/VC Models

An immediate challenge for defence growth is a limited pool of initial and follow-on capital as many business incubators, mid-market New Zealand funds and banks have operational remits that prevent them investing in defence technologies.^{85 86}

Market mechanisms will determine the capacity and willingness to invest in defence provided there is free choice to do so and returns realisable, but the minimum viable product concept in defence represents a paradox that fundamentally challenges conventional startup innovation logic.

Security and operational secrecy prevent the iterative customer feedback loops; defence procurement timelines and resource limitations restrain capacity to test multiple early-stage products while VCs demand faster validation than defence adoption cycles permit. Defence applications require reliability thresholds that far exceed commercial standards, as the typical usage environments tolerate limited appetite for failure. This creates an irreconcilable tension: VCs require customer validation before investing, but achieving defence-grade robustness demands capital that only proven adoption can unlock, while security imperatives simultaneously prevent the transparent market testing.

Furthermore, many investors expect the prospect of global scale meaning uncapped revenues, borderless expansion, and free movement of capital. Defence poses acute foreign ownership restrictions, strict controls on strategic technology transfer, and exposure to geopolitical risk.

Shareholder value creation in the defence context diverges markedly from standard high-growth narratives. Realisation of value through revenue and profit growth are dependent on complex procurement cycles, significant end-use restrictions, and regulatory issues that might result in market delays. For this reason, defence technologies face lengthy growth periods, which deters them from following the typical growth company playbook.

Successful sale, partnership, or market listing may be prohibited or tightly constrained not by commercial logic but by domestic security considerations. Profitable dual-use applications could be sidelined if they threaten to dilute core defence capabilities or concede critical intellectual property offshore (see the Starboard Maritime Intelligence case study in Appendix A).

Regulatory barriers: Dual-purpose terminology can be used to ensure pure Defence triggers are not engaged including Export Control legislation (Customs and Excise Act 2018) and security accreditation under the Defence Industry Security Programme (DISP) and items on the New Zealand Strategic Goods List.

Whilst not insurmountable, they create non-tariff barriers for domestic business to export and thus direct GDP growth. An independent review in 2019 concluded the New Zealand regime for export of defence and dual-purpose goods fell “short of contemporary best practice”.^{87 88}

⁸⁵ <https://www.kiwibank.co.nz/about-us/who-we-are/our-purpose/responsible-business-policy/>

⁸⁶ <https://www.anz.com.au/about-us/esg/policies-practices/social-and-environmental-risk-management/>

⁸⁷ <https://www.beehive.govt.nz/release/report-aotearoa-new-zealand%E2%80%99s-export-controls-system-released>

⁸⁸ In addition, the National Security and Public Order (NSPO) regime covers any size of investment in any company that is determined a Strategically Important Business (SIB) (defined under the Overseas Investment Act 2005). The order does not

The monopsony problem: Defence procurement creates a monopsony, a market with a single buyer, which fundamentally distorts normal market mechanisms. For private industry to create a product there needs to be a very good idea of the required product from the customer for risk capital to be deployed. This monopsony risk in defence procurement means the competitive market mechanism fails, reducing incentives to innovate and lengthening delivery timelines.

This creates a structural capital gap particularly at the outset and technologies of national importance remain underfunded domestically or never even get off the ground, as the commercial ecosystem lacks incentives for long-term patient capital in an industry that has been shunned for many decades.⁸⁹ Additionally, attempts to insulate spending for pure defence purposes often end up cross-subsidising wider business lines, raising questions of efficiency, accountability, and control over strategic resources.

5.2 The Macmillan Gap Parallel

This creates a trade-off in defence economics. Ring-fencing funding to isolate national-security products gives tighter control over sensitive technologies and strategic autonomy, but at the expense of efficiency, innovation spillovers, and access to global supply chains. Conversely, integrating defence R&D into the broader innovation ecosystem may unlock efficiency and technological gains but risks dependency on global markets, diffusion of sensitive knowledge, and shareholder-driven priorities that conflict with national security. In both cases, the logic of maximising shareholder value sits uneasily alongside the state's long-term goal of sustaining sovereign capability.

The Macmillan Committee, reporting in the UK in 1931, recognised the shortage of longer-term capital in smaller businesses. Its focus was on long-dated capital where capital and advice were offered together to support growth and build British industrial capability against the backdrop of German industrialisation and militarisation. The gap it identified proved enduring: it recurred under official examination in the Radcliffe Committee (1959), the Bolton Committee (1971) and the Wilson Committee (1979), each concluding that the British financial system was structurally unwilling to finance smaller, innovative firms on commercially viable terms.⁹⁰

Carnevali and Scott's archival research on the Development Areas Treasury Advisory Committee (DATAC), established in 1945 to address the gap directly, is particularly instructive for New Zealand. DATAC demonstrated that viable firms were being turned away by the conventional banking system: its annual default rate remained below one percent prior to the 1955 credit squeeze, confirming these were creditworthy enterprises the market was simply not serving.⁹¹ Critically, DATAC found that clients' difficulties stemmed largely from what its members called imperfect knowledge of sound industrial,

necessarily help New Zealand defence businesses grow or branch out into dual-use/defence technologies as the funding will not be available domestically and if there are barriers to international capital entry and exit then capital will go to easier options.

⁸⁹ Ablong, M. *ibid*.

⁹⁰ The Macmillan Committee findings led to the development of what is now 3i Group. Capitalised with £15 million in 1945 as the Industrial and Commercial Finance Corporation, it focused on long-term finance for UK SMEs. Now known as 3i Group, it manages a global portfolio with £35 billion under management. This historical precedent demonstrates that patient, government-catalysed capital can evolve into sustainable, commercially viable investment vehicles while addressing strategic national needs.

⁹¹ Carnevali, Francesca, and Peter Scott. "The Treasury as a Venture Capitalist: DATAC Industrial Finance and the Macmillan Gap, 1945-60." *Financial History Review* 6 (1999): 47-65. Key findings: default rate below 1% pre-credit squeeze (p.54); after-care rationale citing "imperfect knowledge of sound industrial, commercial, and accountancy practice" (p.57); political curtailment despite high demand (pp.61-63).

commercial and accountancy practice, not from fundamental non-viability. Its most effective interventions combined capital provision with active after-care: monitoring, management advice and hands-on support that reduced ex-post risk even where ex-ante risk had deterred conventional lenders.

At its heart the Macmillan Gap is a cost-of-capital problem: depositors and investors maximise returns while industry minimises costs, and the gap opens where strategic value and commercial return diverge. Government underwriting addresses this because its cost of capital is structurally lower than private alternatives.^{92 93} This risk-reward asymmetry mirrors New Zealand's current defence situation: a financial system unable or unwilling to finance strategically essential but commercially uncertain enterprise.^{94 95}

However, the capital supply problem is only one side of the equation. Mason and Harrison's research on SME equity gaps identifies a second structural barrier that is equally important: investment readiness of the company.⁹⁶ Their work distinguishes three dimensions of readiness: a firm's willingness to accept equity and relinquish some control; its presentational capability in making a credible case to investors; and fundamentally its investability, meaning the overall credibility and capability of the team, the market position, and the ability to execute. Investors surveyed by Mason and Harrison reported not a shortage of capital but a shortage of sufficiently investable opportunities: over 90% were actively seeking more investments but could not find deals that met basic criteria⁹⁷.

For New Zealand defence SMEs this problem is particularly acute. The MVP paradox identified in Section 5.1 means firms cannot demonstrate market validation through the iterative customer feedback loops that investors use to assess investability. Security requirements prevent transparent market testing and foreign ownership restrictions can constrain exit pathways. The result is that even where capital is theoretically available, the pipeline of investment-ready firms is thin.

A follow-on capital fund that addresses supply without also addressing demand-side readiness risks replicating the DATAC experience: adequate capital, insufficient deal flow, and political vulnerability when results are slower than expected.

⁹² A government's cost of capital is only lower than the private investment cost of capital when it has a free-floating (or at least its own stable) currency because monetary sovereignty allows the government to borrow in its own currency without exchange rate risk.

⁹³ This is particularly relevant for New Zealand's defence procurement because when purchasing USD-denominated military equipment, the NZ government faces foreign exchange risk that can substantially increase costs in NZD terms.

⁹⁴ Even more revealing, the Macmillan Committee noted information and statistics were vital; the fact the DIS notes the Government does not know the number of companies in defence is therefore of concern.

⁹⁵ It is not unique to defence and is seen across biosecurity, diagnostics, climate and manufacturing businesses with real revenue and real customers that sit in a structural gap: too slow for venture, too early for PE or growth equity, too capital-intensive for bootstrapping, too commercially viable for philanthropy. Gamick, Anastasia. "Companies That Should Exist." Substack, 11 March 2026.

⁹⁶ Mason, Colin M., and Richard T. Harrison. "Investment Readiness: A Critique of Government Proposals to Increase the Demand for Venture Capital." *Regional Studies* 35, no. 7 (2001): 663-668. Three dimensions of investment readiness identified (p.664); over 90% of business angels seeking more investments but unable to find sufficient investable opportunities (p.663).

⁹⁷ This is also an anecdotal finding of the author where NZ companies are not ready for funding and not prepared to change once they have it to fully deliver returns in a timely manner.

5.3 The Accelerator Trap

Historical reliance on agencies such as NZTE, TechNZ, and Callaghan Innovation produced limited success for dual-purpose projects due to misalignment between needs and innovation funding criteria.⁹⁸ These funding programmes prioritised bleeding-edge technology over lower-risk, high-usability applications, discouraging incremental or dual-use developments suited for small firms⁹⁹.

Whilst tax credits and R&D rebates were appreciated they are widely considered administratively heavy and strategically directionless. Many firms found them fragmented and difficult to access without consultants who charged commissions, diminishing perceived fairness and efficiency, and a perverse use of taxpayer money.¹⁰⁰ Callaghan was moved into MBIE; grant schemes remain application-heavy and bureaucratic.

The DIS acknowledges a number of these shortcomings and flagged a Technology Accelerator with indicative funding of \$100-300 million. Budget 2026 began implementation, but at pilot scale: \$1.5 million capital and \$16 million operating funding to commence the programme¹⁰¹. The gap between the indicative commitment and the funded pilot illustrates precisely the political and fiscal fragility this thesis identifies; whether the accelerator scales to its indicative range will be a test of the long-term commitment the DIS itself recognises as essential.

The critical requirement is long-term certainty of direction, without which private companies will not deploy capital. There is no shortage of start-up funding in New Zealand that can be directed towards defence; what is critical is the next stage funding.

NZ companies typically, but not always, seek overseas funding at Series A and later stages,^{102 103} leading to companies leaving promising technologies offshore due to lack of follow-on funding; extended to defence this leads to loss of domestic capability and deterrence potential.

This reinforces the need for follow-on capital beyond initial acceleration. Acceleration is not the problem, but maintaining momentum is; it is about scale and IP retention and, consequently, resilience and deterrence. Longer-term funding availability to address the capital gap has been identified in UK and Canadian defence accelerators.^{104 105}

Even established medium sized enterprises, as interviews revealed, must act conservatively with their own balance sheets, prioritising stable cash flow over speculative R&D. All of the company interviewees emphasised that most innovation has been sustained through bootstrapped or internally funded R&D, rather than institutional support. Smaller, Tier 2-4 firms often cannot self-fund at-risk prototypes and face

⁹⁸ Interviews.

⁹⁹ Interviews

¹⁰⁰ Interviews.

¹⁰¹ Budget 2026: NZ Treasury

¹⁰² <https://www.nbr.co.nz/business/wave-power-startup-seeks-25m-in-project-funding/>

¹⁰³ <https://rogerpartridge.substack.com/p/new-zealands-real-economic-problem>

¹⁰⁴ Refer to Appendix C and the UK's NSSIF experience.

¹⁰⁵ Rocket Lab, undoubtedly the dual-purpose NZ success story of recent years, is now essentially a US funded and owned company retaining some manufacturing and launch facilities in NZ.

exclusion from defence supply chains and also suffer from poor business setup and limited experience of wider procurement and supply practices due to capital and labour constraints.

While government accelerator programmes have been used previously across other sectors, participants express scepticism fearing repetition of past inefficiencies where state co-funding either arrived too late, did not look broadly enough, or was allocated to the same distribution channels.¹⁰⁶

One interview noted several failed industrial-cluster efforts in aviation were attributed to poor governance and execution of government funding, describing a culture of free-money chasing rather than sustainable capability building.

This demand-side readiness failure is not simply a matter of financial literacy, though that matters. It reflects the structural incompatibility between defence development timelines and conventional investor expectations identified throughout this section. An effective accelerator must therefore do more than de-risk early-stage technology. It must prepare firms to receive follow-on capital: building governance structures, financial reporting capability, and management credibility to the point where a Series A investor can assess the opportunity on normal commercial terms, adjusted for the specific constraints of the defence context.

The evidence strongly supports that a government-initiated accelerator fund is required to enable other market participants, but it needs to catalyse the wider sector. It is accepted that early-stage companies iterate substantially and in terms of workable design there will be many false starts, but in defence there will be iteration from the customer at TRL 1-4 stages.¹⁰⁷

Any funding venture must have experienced people knowing what is needed to ensure products are fit for purpose but equally, defence needs to have, as much as is possible, clear expectations over the type of product required. As part of the broader effort this expert monitoring, especially at early stage, is essential in what is essentially a nascent industry and will require a genuine all-of-government approach, at the very least Treasury, MBIE, and Defence, to ensure coherence and minimisation of overlapping interventions.

5.4 Procurement Dysfunction

Capital is just one barrier; regulation and legislation need to change around defence. Procurement processes are complex and expensive, immediately disadvantaging smaller, capitally constrained businesses.

A third of interviewees described procurement as administratively costly, favouring firms that can absorb bid costs and sustain operations while awaiting government decisions. This model leads to an unbalanced distribution of risk where the capital at risk sits primarily with suppliers rather than the state, who is the main beneficiary.¹⁰⁸

¹⁰⁶ Interviews.

¹⁰⁷ Technology Readiness Level (TRL) is a 1-9 scale developed by NASA and later the EU to estimate the maturity of technology from 1 (basic principles/observation) to 9 (commercial operation).

¹⁰⁸ This is where a shift in the input-equals-output economic model needs to shift to communicate to stakeholders and demonstrate value.

Roughly two thirds of interviewees viewed current procurement as biasing overseas primes such as Babcock, BAE, RTX, Boeing, and Lockheed at the expense of domestic industry participation, as domestic firms are locked out by existing supply agreements. Examples include through-life support and maintenance for aircraft being based offshore, which reduces sovereign capability and local skill development (see the NZAero case study in Appendix A).

The DIS requirement for local content is recognised by all interviewees as important: if the NZDF acted as an anchor buyer, it could catalyse domestic production and export growth. A blend of government policy, tailored investment vehicles, and clarified regulatory settings is required; the default growth company journey and shareholder value framework will rarely deliver the sustainable, domestically anchored capability required for national defence resilience.

6. FUNDING MECHANISMS: LESSONS FROM INTERNATIONAL MODELS

6.1 Overview and Comparison

A national defence industry is a strategic choice made by governments, influenced by a nation's demand for defence equipment and technology capabilities but also creating a deterrent and resilience; it is a means to an end.

As discussed, government, often the sole buyer, in the first instance needs to finance the initial stages of rekindling a domestic defence industry, since private industry is unlikely to take on such commercial and financial risk without external incentives. There are several schemas around the world encouraging, financing and supporting defence.

International approaches to defence innovation funding vary significantly in structure, scale, and objectives. The key distinction lies between non-dilutive funding mechanisms (grants and contracts) typically used for early-stage acceleration, and equity-based investment models designed to provide follow-on capital and scale. The scale of these initiatives ranges from approximately \$100 million to over \$1 billion, reflecting different national priorities and economic capacities.

A critical differentiator is the extent to which these mechanisms link directly to procurement pathways. Some programmes, such as Australia's ASCA and the US IQT, explicitly connect innovation funding to defence acquisition processes, creating clear routes to adoption. Others, like NATO's DIANA and the EU's Defence Equity Facility, focus primarily on ecosystem development and de-risking technologies, with more indirect pathways to procurement.

6.2 Comparative Table

The following table summarises key global defence accelerators and funding mechanisms across NATO and Five Eyes nations (a more detailed analysis of each scheme is provided in Appendix D):

Scheme	Country/Org	Funding Mechanism	Equity or Non-Dilutive	Scale/Budget	Procurement Link
DIANA	NATO	Challenge-based grants + mentoring	Non-dilutive	Multi-million annual calls	De-risking dual-use tech; not direct procurement
NIF	NATO Allies (24)	VC fund (direct + fund-of-funds)	Equity	>€1B pooled	Strategic tech adoption through NATO nations
DEF	EU (EIF/EDF)	Equity LP co-investment via VC/PE funds	Equity (LP)	€175M (aiming €500M)	No direct procurement; ecosystem development
DASA/UKDI	UK MOD	Open calls, consolidated innovation agency	Non-dilutive	≥£400m/year ring-fenced	Explicit procurement link at wartime pace
NSSIF	UK (British Business Bank)	Corporate venturing via accredited fund managers	Equity	£220m deployed; £330m expansion to 2030	Aligned with NatSec tech priorities

Scheme	Country/Org	Funding Mechanism	Equity or Non-Dilutive	Scale/Budget	Procurement Link
IDEaS	Canada DND	5-element programme: projects, networks, contests	Non-dilutive	CAD 1B over 20 years	No procurement guarantee
IQT	USA (CIA/IC)	Not-for-profit VC firm	Equity	~\$200m+ annually; >\$1bn AUM	Very strong: direct pathway into IC contracts
ASCA	Australia DoD	Mission-based capability accelerator	Non-dilutive	AUD 3.4B over 10 years	Explicitly linked to ADF procurement
Defence 10x	Australia (UNSW)	University-led accelerator, SAFE notes + grants	Mixed	~6 startups per cohort	Indirect: builds pipeline into ASCA

However, these models have inherent limitations that New Zealand must recognise. A technology successfully demonstrated through an accelerator programme may still fail to transition into actual defence capability acquisition, and accelerator programmes provide no guarantee of follow-on capital provision.

The Canadian experience is particularly instructive. Despite the success of the IDEaS programme in catalysing early-stage innovation, Canadian defence experts are now calling for a PE-style investor to fill the follow-on capital gap. This recognition that acceleration alone is insufficient has emerged even in a country with substantially larger capital markets than New Zealand.

The most successful international models demonstrate explicit linkages between innovation funding and defence procurement. Australia's ASCA operates on project-based missions with a declared goal of accelerating adoption at wartime pace. Similarly, IQT's effectiveness derives substantially from its direct pathway into Intelligence Community contracts.

The international evidence points to several clear conclusions. First, accelerators are necessary but insufficient. Second, follow-on capital at Series A-C stage represents the critical gap. Third, IP protection requires structural mechanisms built into investment terms from the outset. Fourth, scale matters for both credibility and leverage. Fifth, long-term commitment exceeding 10 years is essential. Finally, expert governance combining defence and commercial expertise is non-negotiable.

7. RECOMMENDATIONS FOR NEW ZEALAND

7.1 Guiding Principles

Government intervention in defence capital markets is justified precisely because market mechanisms fail here in ways they do not in other sectors. The goal is not to substitute for private capital but to crowd it in through blended finance structures that require co-financing and risk sharing.¹⁰⁹ Four principles must guide any New Zealand defence funding mechanism.

Patient capital with strategic purpose: Defence development timelines are inherently long. Funding mechanisms must provide capital with appropriate time horizons (10+ years) while maintaining clear strategic objectives aligned with national security requirements rather than purely commercial returns.¹¹⁰

Transparent governance with operational independence: All-of-government coordination (Treasury, MBIE, Defence) ensures coherence and minimises overlapping interventions, but operational decision-making must be insulated from short-term political cycles. Transparent reporting builds public accountability while operational independence enables nimble response to emerging technologies and threats.

Private sector leverage: Government capital should catalyse rather than replace private investment. Co-investment requirements ensure private sector discipline while sharing both risk and returns; this will mean substantial structural change in private capital, or new entrants, where defence is not a dirty word.

IP protection built-in from inception: Sovereign capability depends on retaining critical intellectual property domestically. Licensing agreements, board oversight, and strategic veto rights must be standard conditions, not afterthoughts.

The evidence points to a three-stage approach that should run concurrently:

7.2 Stage 1: The Defence Accelerator (TRL 2-5)

The accelerator requires experienced governance from people who understand both defence requirements and commercial technology development, not bureaucrats administering grant criteria. Clear capability priorities must flow from the NZDF to potential suppliers; early-stage companies iterate substantially and without a reasonably defined product requirement, capital is wasted on false starts. Non-dilutive funding through grants and contracts rather than equity is appropriate at this stage, allowing founders to prove concepts without premature dilution. Competition-based allocation with clear milestones ensures accountability.

Critically, the accelerator's role extends beyond de-risking technology. It must also build the investment readiness of firms: governance structures, financial reporting capability, and management credibility that make them viable candidates for follow-on capital. As Mason and Harrison demonstrate, a shortage of

¹⁰⁹<https://www.lse.ac.uk/granthaminstitute/news/investing-in-our-future-how-government-and-private-investors-can-work-better-together-for-the-public-good/>

¹¹⁰ Gamick notes other sectors face similar funding and patient capital challenges where 80% of investments succeeding at lower return thresholds can deliver results similar to VC on an aggregate basis.

investable opportunities is as significant a barrier as a shortage of capital.¹¹¹ An accelerator that produces technically proven but commercially unprepared firms simply transfers the problem downstream.

7.3 Stage 2: Follow-on Capital Fund (TRL 5+) – The Critical (Macmillan) Gap

The Problem Accelerators get technologies to proof-of-concept (TRL 4-5) but for sustainability, companies need Series A and B capital (TRL 5-8) to scale from prototype to production. As established in Section 5.3, the follow-on capital gap at Series A-C stage is where economic value is lost and deterrence capability fails to materialise.

As noted Canadian defence experts are now calling for a PE-style investor to fill the follow-on capital gap and the establishment of the NSSIF in the UK was specific to combatting this loss of IP in larger follow-on funding rounds. This recognition that acceleration alone is insufficient has emerged even in countries with substantially larger capital markets than New Zealand, suggesting that New Zealand faces a comparable, if not more acute, structural risk.

Therefore, to accompany the accelerator, and designed to address the structural gap the Macmillan Committee identified and structurally analogous to the ICFC (later 3i) created to physically solve it, a blueprint for such an entity would initially require approximately \$600 million to \$1 billion in government funds, with focus on Series A-C investment (TRL 5+) that would help cement a hub, retain IP, bolster exports for the longer term and vastly improve economic returns.

Structure and Scale: As defence matures as an industry within New Zealand, this fund would enable private capital to invest alongside and further establish critical mass and build resilience and economic benefit.

The fund should be established as an independent entity with semi-autonomous governance, structured similarly to the Infrastructure Commission with a multi-decadal mandate extending beyond electoral cycles (see the NZGIF case study in Appendix A). Legal structure as a Crown entity with operational independence ensures strategic alignment while enabling commercial discipline.

Governance and Investment Readiness: The fund requires board leadership combining defence domain knowledge, commercial investment experience, and strategic foresight, with an apolitical mandate insulated from electoral cycles. Transparent reporting builds public accountability while operational independence ensures commercial discipline.

A supply-side fund is necessary but not sufficient. The Carnevali and Scott analysis of DATAC shows that capital alone is insufficient when firms lack the commercial and financial literacy to use the capital productively.¹¹² Investment in a company is “Other People’s Money” firms must be prepared to accept it, account for it, and deploy it credibly. The follow-on fund should therefore require portfolio companies to meet defined investment readiness thresholds, governance, financial reporting, management depth, and exit visibility, before receiving Series A capital. This is not a bureaucratic hurdle; it is the condition under which private co-investors will participate, and without their participation the fund cannot achieve the leverage ratios that make it fiscally sustainable.

¹¹¹ Mason and Harrison, *ibid*.

¹¹² Carnevali and Scott, *ibid*.

7.4 Stage 3: Structural Reforms

Defence Commission. Interviewees, without exception, noted the need for long-term commitment to any defence initiatives. The discussions supported establishing a semi-autonomous Defence Commission akin to the Infrastructure Commission, apolitical and multi-decadal, to deliver sustained capability investment regardless of government change. Participants agreed that New Zealand needs a 10-year-plus defence-industrial strategy, rather than reactive 3-year election cycles that disrupt continuity and institutional memory.

The Commission would provide regular DCP reviews with long-term continuity, maintaining institutional memory across government changes. It would coordinate funding mechanisms, accelerator and follow-on fund, ensuring coherent strategy. The DIS notes uncertainty over government changes undermines investment; a Commission structure addresses this fundamental barrier to private capital deployment.

Procurement Reform. Procurement processes are complex and expensive, immediately disadvantaging smaller, capially constrained businesses. Several reforms are essential.

Contract timelines must extend beyond the current two-year horizon, providing certainty that justifies private capital deployment. RFP costs for established domestic suppliers should be reduced, recognising that repeated expensive bid processes favour large international primes over emerging domestic capability.

NZDF as anchor buyer represents a critical reform. Interviews noted that on the international defence market the NZDF is seen as very professional. Pull-through from accelerator to procurement creates clear line-of-sight from innovation to capability acquisition. Local content requirements (which DIS acknowledges need strengthening) ensure domestic economic benefit. Through-life support preference for domestic capability retains skills and sovereign capability. Streamlined security clearances for vetted firms reduce barriers to participation. Export control reform, a 2019 review concluded New Zealand's regime fell "short of best practice,"¹¹³ is essential. AUKUS Pillar II could offer opportunity for regulatory alignment and technology transfer facilitation with existing members if NZ were to join.

Hub Model. Ultimately New Zealand would benefit from a defence hub/precinct model (physical and virtual) to capture defence IP and build a proper industrial defence base and supply chain to ensure long-term deterrence and resilience. Without sufficient domestic scale, valuable innovations will inevitably migrate overseas for funding and manufacturing capacity; whilst exporting is essential for economic growth and value, the base for that growth needs to remain in New Zealand for defence purposes. A right-sized full value chain, hi-tech manufacturing, IT systems, support, and logistics will provide a basis for IP retention to be meaningful, create scale in production, and foster industry participation within New Zealand¹¹⁴.

AUKUS Pillar II, if New Zealand participates, offers the additional benefit of Trans-Tasman supply chain integration and regulatory alignment without requiring New Zealand to develop every capability domestically.¹¹⁵

¹¹³ <https://www.beehive.govt.nz/release/report-aotearoa-new-zealand%E2%80%99s-export-controls-system-released>

¹¹⁴ There are numerous examples of successful hubs globally. The Warwick Innovation Park in the UK, a purpose-built facility for start-ups and growing tech firms with strong links to Warwick University, is estimated to add nearly £4 billion (\$10 billion) annually to the UK economy.¹¹⁴ New Zealand has precedent with the Waikato Innovation Park focusing on Agtech and Biotech.

¹¹⁵ Space has been highlighted as one of the key areas in both the Defence Capability Plan and the Defence Industry Strategy.

7.5 Human Capital and Social License

Human Capital Pipeline A sustainable human capital pipeline is as important as capital. New Zealand should expand STEM scholarship bonds with structured secondments across NZDF, universities, and private sector, destigmatising defence careers in the technology sector and building cross-ecosystem understanding. Australia's full sponsorship of STEM graduates for its nuclear submarine programme is the relevant benchmark.^{116 117} The BENS model in the US, integrating business executives into national security decision-making, offers a complementary mechanism for private-sector engagement¹¹⁸ and the benefit of the Talpott programme has been previously highlighted.

Communication for Social License are foundational for success. While public support for defence spending is generally robust,¹¹⁹ achieving enduring legitimacy depends on transparent, proactive engagement about the real-world economic benefits defence brings. Interviews suggested that building broad public support depends on linking defence investments to visible benefits, be they job creation, technology spillovers, or disaster response capabilities. Of note, surveys in the EU indicate two-thirds of the population feeling threatened currently but only 34% thinking further defence investment is needed.¹²⁰

It is essential to communicate the diffuse, long-term value of defence, moving beyond purely measurable returns to recognise its critical role in safeguarding prosperity and sovereignty. As the DIS recognises, both government and industry must evolve to deliver faster capability while actively demonstrating the social and economic value of investments, moving beyond the simple input-equals-output model.

Communication with industry is just as necessary. The DIS acknowledges that insufficient visibility of domestic industry capability remains one of the most significant barriers to growth. Industry must communicate capabilities to government and government must communicate means and ends, coordinate with partners, and make the invisible visible, especially by linking defence projects to tangible long-term benefits and opportunities for New Zealand society.

¹¹⁶ <https://www.defencecareers.mil.nz/air-force/how-do-i-join/entry-options/scholarships>

¹¹⁷ <https://business.gov.au/grants-and-programs/nuclear-powered-submarines-technical-scholarships>

¹¹⁸ Business Executives for National Security (BENS) is a nonpartisan nonprofit comprised of accomplished business and industry executives who apply their experience and best business practices to help address pressing national security challenges.

¹¹⁹ <https://www.rnz.co.nz/news/poll/556896/new-rnz-reid-research-poll-half-of-kiwis-want-defence-spending-to-increase>

¹²⁰ Gyimesi, Balazs. "Who Will Pay the Cost of Freedom in Europe?" RUSI Commentary, 13 March 2026. *ibid*.

8. CONCLUSION

New Zealand is not facing a spending problem. It is facing a structural problem. The DCP's commitment to 2% of GDP matters, but it will not build sovereign capability or capture economic value if money keeps flowing offshore into imported platforms, foreign primes, and unretained IP. The question is not how much to spend. It is how.

Three bodies of evidence converge on the same conclusion. The defence economics literature, from Benoit's development catalyst argument through Hartley's call for output valuation, establishes that well-structured domestic production generates direct GDP contribution and indirect spillovers that imported capability cannot. This thesis does not claim to quantify deterrence value, for reasons already set out. The economic case rests on something narrower and more defensible: domestic production generates measurable returns; imports do not.

The Macmillan Gap analysis, enriched by Carnevali and Scott's archival evidence on DATAC and by Mason and Harrison's investment readiness research, establishes that the capital supply problem has two sides. Government-backed patient capital is necessary to address the structural mismatch between domestic capital preferences and strategically essential sectors. But firms must also be prepared to receive that capital. The DATAC experience demonstrated that viable businesses were turned away not because they were unworthy but because no institution was willing to combine capital provision with the active after-care that reduced ex-post risk. The follow-on fund proposed here must learn from that history.

The empirical interview findings are unambiguous: without a domestic follow-on capital fund, companies that survive the accelerator stage will exit offshore through necessity. This is not prediction but evidence: the UK's NSSIF was established to prevent exactly this, and Canadian experts have called for a PE-style investor to fill the same gap.

RUSI cautions against defence spending as an unquestioned economic catalyst, and that caution is warranted. The case advanced here is deliberately conditional. New Zealand's specific structural failures, a follow-on capital gap, IP leakage, procurement bias toward overseas primes, and a government that openly acknowledges it does not know how many domestic companies can contribute to defence, constitute identifiable market failures. Targeted intervention to correct those failures is economically justifiable on its own terms, independent of any broader defence dividend.

The three-stage model, accelerator, follow-on capital fund and structural reform, is designed as a coherent response to those failures. The stages are not alternatives or even sequential but concurrent.

The accelerator corrects the early-stage funding gap but leaves the follow-on capital gap, and with it the IP leakage problem, entirely unresolved; without that second stage, it risks becoming, as the Canadian and British experience warns, a de-risking service for international investors. The follow-on fund is where sovereign capability is either retained or lost and without structural reform in the form of a Defence Commission, procurement reform, hub development and a human capital pipeline, neither capital fund will compound into a sustainable industrial base.

Gerschenkron's latecomer advantage is real, but it does not activate itself. Realising it requires the institutional architecture this thesis proposes. Without it, the advantage dissipates.

New Zealand's current position is time limited. The DIS exists and there are signs there is public support for defence spending, for now. The strategic environment, while deteriorating, has not yet foreclosed the hedging-to-balancing transition.

The time to build the industry is before the capability is needed, and the time to build the capability is before it is required. New Zealand is not yet late, but it is starting from a very low base. The conditions that make action possible, political will, fiscal headroom, allied alignment, do not hold indefinitely.

Delay is itself a strategic choice, with consequences.

ABBREVIATIONS AND ACRONYMS

ASCA - Advanced Strategic Capabilities Accelerator (Australia)

AUKUS - Australia-United Kingdom-United States (trilateral security partnership)

BENS - Business Executives for National Security (US nonprofit)

C4ISR - Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

CBRN - Chemical, Biological, Radiological, and Nuclear

CFIUS - Committee on Foreign Investment in the United States

DASA - Defence and Security Accelerator (UK MOD)

DCP - Defence Capability Plan (New Zealand)

DEF - Defence Equity Facility (EU)

DEFIS - Defence Industry and Space (European Commission directorate-general)

DE&S - Defence Equipment and Support (UK)

DIANA - Defence Innovation Accelerator for the North Atlantic (NATO)

DIS - Defence Industry Strategy (New Zealand)

DISP - Defence Industry Security Programme (New Zealand)

DIU - Defence Innovation Unit (UK, formerly separate, now part of UKDI)

DND - Department of National Defence (Canada)

DoD - Department of Defense (Australia/US)

EDF - European Defence Fund

EIF - European Investment Fund

ESG - Environmental, Social, and Governance

EU - European Union

FCI - Future Capability Innovation (UK)

FVEY - Five Eyes (intelligence alliance: US, UK, Canada, Australia, New Zealand)

FX - Foreign Exchange

GDP - Gross Domestic Product

GETS - Government Electronic Tenders Service (New Zealand)

HO - Home Office (UK)

IC - Intelligence Community (US)

ICBM - Intercontinental Ballistic Missile

IDEaS - Innovation for Defence Excellence and Security (Canada)

IMF - International Monetary Fund

IQT - In-Q-Tel (CIA venture capital firm)

ITAR - International Traffic in Arms Regulations (US export control)

LP - Limited Partner (investment structure)

MBIE - Ministry of Business, Innovation and Employment (New Zealand)

ML - Machine Learning

MOD - Ministry of Defence (UK)

NATO - North Atlantic Treaty Organisation

NIF - NATO Innovation Fund

NSPO - National Security and Public Order (New Zealand investment regime)

NSSIF - National Security Strategic Investment Fund (UK)

NZTE - New Zealand Trade and Enterprise

NZDF - New Zealand Defence Force

NZSIS - New Zealand Security Intelligence Service

OECD - Organisation for Economic Co-operation and Development

PE - Private Equity

QALY - Quality-Adjusted Life Year (healthcare metric)

R&D - Research and Development

RAND - Research and Development Corporation (US nonprofit think tank)

RFP - Request for Proposal

RBNZ - Reserve Bank of New Zealand

SAFE - Simple Agreement for Future Equity (investment instrument)

SIB - Strategically Important Business (New Zealand)

SME - Small and Medium-sized Enterprise

SSN - Nuclear-powered attack submarine

STEM - Science, Technology, Engineering, and Mathematics

TRL - Technology Readiness Level (1-9 scale for technology maturity)

UCDP - Uppsala Conflict Data Program

UK - United Kingdom

UKDI - UK Defence Innovation

UAS - Uncrewed Aerial Systems (drones)

UNSW - University of New South Wales (Australia)

US/USA - United States of America

VC - Venture Capital

WWII - World War Two

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Personal and AI Disclosure:

The author was involved in the liquidation of Pacific Aerospace and is aware first-hand of the conversations with prospective funders and the lack of engagement by the Government.

This report was originated, researched, structured and written by the author. Generative AI (Anthropic's Claude Opus 4.8) was used as a drafting-support tool for the following: refining structure and flow, editorial copy-editing, de-duplicating repeated argument, reviewing interview material and checking internal consistency of footnotes and the bibliography against one another.

All substantive analysis, argument, source selection and conclusions are the author's own. All AI-suggested edits were reviewed, verified and accepted or rejected individually by the author, and all references were independently checked against their original sources. No AI tool was used to generate data, invent sources, or produce interview findings.

Appendix A: Case Studies

Case Study: The Structural Case for Domestic Sovereign Capability

The NZAero (previously Pacific Aerospace) CT-4 designed and manufactured in Hamilton represents a cautionary tale of domestic capability not fully utilised despite proven export success.

Over 50 years, more than 150 units have operated with air forces in Australia, Thailand, and Singapore, with 280,000 flying hours logged and training nearly 2,300 pilots. Yet New Zealand's own defence force replaced its CT-4E fleet with imported Beechcraft T-6C Texan II aircraft in 2015, abandoning domestically produced capability entirely.

The missed opportunity becomes stark when examining recent US military procurement. In August 2022, US Special Operations Command awarded a \$3 billion contract for up to 62 OA-1K Sky Warden aircraft, a militarised version of the Air Tractor AT-802 crop duster for armed ISR, close air support, and counter-insurgency missions.

NZAero manufactures an almost identical airframe, the Cresco, a rugged single-engine turboprop crop duster. Like the Air Tractor AT-802, the Cresco is designed for low-level operations, can carry significant payload, features robust construction for demanding conditions, and has proven reliability in agricultural operations. Both aircraft represent exactly the same civilian-to-military conversion pathway: proven agricultural platforms adapted for military ISR and light attack roles.

While the United States has invested \$3 billion in the crop-duster-to-military-ISR concept, the New Zealand government has provided no funding to develop military variants of its own functionally equivalent platforms. The true strategic failure here was the absence of domestic follow-on capital historically that forced a sovereign capability into foreign ownership, which in turn rendered it security-compromised and unprocurable and ultimately into liquidation in 2021. This is the Macmillan Gap in direct action.

The NZDF abandoned its trainer aircraft capability; it ignores proven technology directly comparable to a \$3 billion US programme. This is a pertinent example of New Zealand being able to retain a sovereign capability, and capture export markets through targeted domestic procurement and development support.^{121 122}

¹²¹ asiapacificdefencereporter.com/australian-aviation-industry-honours-nz-built-air-force-trainer/;

¹²² www.l3harris.com/all-capabilities/skywarden.

Case Study: Starboard Maritime Intelligence – Potential IP leakage in action

Starboard Maritime Intelligence exemplifies both the potential and the peril of New Zealand's current approach to defence and dual-use technology development. The Wellington-based maritime surveillance company demonstrates how government-catalysed innovation can successfully create world-class technology yet could perfectly illustrate future IP leakage.

Starboard's origins trace to the Xerra Earth Observation Institute in Cromwell, established with \$14.7m in 2016 from MBIE's Regional Research Institutes Initiative. Between July 2021 and June 2023, Xerra received \$7m in government grant funding to develop maritime surveillance capabilities, with a clear dual-use technology with significant defence and policing applications.

Starboard was formally incorporated in January 2023, and by early 2024 had raised its first significant private capital round on a \$5m valuation. This initial round diluted Xerra's ownership from 100% to 40%. Subsequent funding rounds, including a \$23m capital raise in September 2025, have further diluted Xerra ownership (now held in a Trust) to approximately 10%, with 75% of the company now held by offshore interests, creating the hypothesis that NZ funds were either unwilling or unable to follow their money.

From an investment capital perspective, this represents a success story. Early government investment catalysed technology development, attracted substantial private capital, and generated (as yet unrealised) returns for remaining New Zealand stakeholders. However, from a sovereign capability and economic value perspective, the trajectory is deeply problematic. A technology developed with New Zealand taxpayer funding for a strategically important capability is now predominantly financially controlled, and by association the IP, increasingly held by offshore capital.

Case Study: NZGIF Lesson

The establishment and closure of the New Zealand Green Investment Finance (NZGIF) demonstrates how arms-length institutions created to fill market gaps can be undone by successor governments, with profound implications for strategic sectors like defence that require stability across political cycles.

NZGIF was launched in 2019 to accelerate investment into low-emissions projects that traditional lenders were unwilling to fund, and invested nearly \$400 million. Reviews criticised value for money and governance after high-profile failures such as SolarZero, and following the 2023 change of government the fund was directed in April 2025 to stop new investments, citing “duplicative government funds, poor cost-effectiveness, and changing priorities”. The abrupt closure left innovative SMEs that had invested substantial resources in due diligence and legal preparation without access to funding.

For defence economics, such instability would be unacceptable. National security, preparedness, and capability require enduring frameworks shielded from partisan swings. The lesson for defence is not that publicly funded entities should be shielded from accountability regardless of performance, but that strict performance accountability and multi-decadal political insulation must be built in from inception: one without the other is insufficient.

Appendix B: Interview Questions

1. Background and Current Funding Journey

- Can you briefly describe your/your company's core offerings and role within the defence sector?
- How was your company initially funded? (Self-funded, friends and family, angel investors, bank loans, venture capital, government grants, etc.)
- Can you outline any subsequent funding rounds or significant capital injections?
- What have been the main challenges accessing capital at different growth stages?

2. Venture Capital, Private Equity, and the Investment Landscape

- Have you actively sought investment from NZ-based venture capital (VC) or private equity (PE) firms? Why or why not?
- What has been your experience with the NZ venture/PE ecosystem in relation to defence-oriented companies?
- If you have received VC/PE investment, what value did it bring beyond capital?
- If you sought but did not receive VC/PE funding, what do you perceive as the key barriers?

3. Government Support

- Have you accessed any government grants, contracts, or advisory support for funding?
- How well do existing government funding/support mechanisms align with defence sector requirements?
- What challenges have you encountered navigating these public funding options?

4. Views on a Larger NZ Venture/PE Ecosystem or Government "Fund"

- Do you think a significantly larger NZ-based fund targeting defence and strategic technologies would have made a difference to your company's journey?
- What features would make a fund most helpful for companies like yours?
- Should such a fund be private-sector led, government-backed, or a hybrid? Why?
- Are there international models you believe New Zealand should learn from or replicate?

5. Desired Improvements and Open Feedback

- What single change to the NZ innovation and investment ecosystem would have the biggest impact for defence SMEs?
- What non-financial support would be most valuable in addition to capital?
- How could public dialogue be encouraged to help value defence spending?
- Is there anything else you would like policymakers, investors, or other stakeholders to understand about funding defence innovation in New Zealand?

Appendix C: Interview Analysis

The interviews were conducted as per Massey University guidelines and ethics approval. They are anonymous and were recorded either using online meeting software or digital recording in person. Speech to text software was used to create transcripts and summaries.

Table C.1: Interview Analysis

Interviewee	1. Initial Funding and Capital Journey	2. Follow-on Capital and Series A-C Gap	3. Government Support Experience	4. Procurement System Challenges	5. Defence-Specific Barriers	6. Strategic and Long-term Needs	7. Desired Fund Features and Solutions	8. Economic Value Articulation
Interviewee 1 (Defence Tech Company)	Bootstrapped/self-funded; seed funding with some government grants	Sought overseas funding at Series A+ due to domestic gap; risk of IP leakage	Callaghan R&D rebates administratively heavy, strategically directionless	Must repeatedly bid for short-term projects; expensive RFPs with no long-term guarantee	MVP paradox; security prevents iterative feedback loops	Need 10-year+ defence-industrial strategy vs reactive 3-year election cycles	Patient capital (10+ years); specialist defence sector knowledge	Domestic production creates direct GDP vs imports (zero GDP value)
Interviewee 2 (Defence Tech Company, Ex-Defence Officer)	Self-funded R&D; conservative balance sheet approach	Critical gap at Series A-C for scaling to production	Past NZTE/TechNZ support had limited success; misalignment with needs	Processes robust but administratively costly; too slow for current global landscape	Defence adoption cycles too long for VC	Support what we are good at: special forces, leadership, tech adoption	Government-backed hybrid model; milestone-based tranches; IP protection built-in	Need to retain IP domestically for sovereign capability
Interviewee 3 (Medium Dual-Purpose Enterprise, Ex-Defence Officer)	Internally funded R&D; avoided speculative external investment	Limited domestic follow-on capital; banks have remits preventing defence investment	Government co-funding arrived too late or allocated to same distribution channels	Unbalanced risk; capital risk sits with suppliers, not the state	Foreign ownership restrictions and tech transfer controls limit exit options	Uncertainty over government changes undermines investment; need	Follow-on capital fund for Series A onwards	Without domestic scale, innovations inevitably migrate overseas

Interviewee	1. Initial Funding and Capital Journey	2. Follow-on Capital and Series A-C Gap	3. Government Support Experience	4. Procurement System Challenges	5. Defence-Specific Barriers	6. Strategic and Long-term Needs	7. Desired Fund Features and Solutions	8. Economic Value Articulation
Interviewee 4 (Dual Defence/Aerospace Tech)	Friends and family plus bootstrapping; angel investors; grant applications heavy	NZ VC/PE ecosystem lacks understanding of defence sector; risk appetite too low	Failed aviation cluster efforts; “free-money chasing” culture vs capability building	Procurement biased toward overseas primes; domestic locked out by agreements	Export controls significant barrier; defence remains stigmatised	apolitical framework NZDF should act as anchor buyer; internationally seen as serious buyer	Learn from international models: equity plus procurement link	Defence investment as insurance policy; social licence will come with jobs and growth
Interviewee 5 (SME/Tier 3 Firm)	Cannot self-fund at-risk prototypes; excluded from supply chains	Tier 3 firms face complete exclusion; cannot access growth capital without proven contracts	Fragmented access; small firms cannot navigate without expensive consultants	Systemic fragmentation and lack of continuity; small firms excluded by high participation costs	Defence does not fit standard PE/VC models; no uncapped revenue potential	Multi-decadal planning essential; institutional memory must survive government changes	Non-financial support: mentorship, export assistance, regulatory navigation	R&D spillovers to civilian economy; upskilling; resilience; hard to quantify
CROSS-CUTTING THEMES	Most innovation sustained through bootstrapped/internal funding	Critical gap at Series A-C stage where companies exit offshore	Historical government programmes produced limited success; administratively heavy and fragmented	All interviewees noted procurement dysfunction	Defence fundamentally incompatible with standard VC/PE models	UNIVERSAL THEME: All interviewees stressed need for long-term commitment	Strong support for government-backed hybrid fund with patient capital	Value framework needed: Direct GDP plus Indirect (capability, spillovers, resilience)

Table C.2: Interview Themes

Theme Category	Key Finding	Supporting Evidence
Capital Access	Critical gap at Series A-C; bootstrapped R&D; offshore exit inevitable	"Most innovation sustained through bootstrapped/internal R&D"; "Companies seek overseas funding at Series A+"
Government Support	Administratively heavy, fragmented, strategically directionless	"Callaghan administratively heavy"; "Free-money chasing culture"; "Failed clusters"
Procurement	Short-term, expensive RFPs; bias to overseas primes; no continuity	"Must repeatedly bid for short-term projects"; "Locked out by overseas primes"
Defence-Specific	Incompatible with VC/PE models; MVP paradox; export controls	"Security prevents iterative feedback"; "VCs demand faster validation"
Strategic Needs	UNIVERSAL: Need 10+ year strategy; Defence Commission; focused hub	"Without exception, noted need for long-term commitment"
Economic Value	Direct GDP from domestic production; need to retain IP	"Domestic production = direct GDP"; "Innovations migrate overseas"

Table C.3: Interview to Report Mapping

Question Domain	Interview Response Theme	Thesis Conclusion/Recommendation
Initial Funding and Capital Access	Most companies bootstrapped/self-funded	Stage 1: Accelerator addresses early-stage (TRL 2-5) but insufficient alone
VC/PE Investment Landscape	Critical gap at Series A-C stage	Stage 2: Follow-on Capital Fund (\$600M-1B) for Series A-C is the critical missing piece
Government Support Programs	Callaghan/NZTE administratively heavy	New accelerator (DIS \$100-300M) must avoid past mistakes: experienced governance, clear priorities
Procurement System	Bias to overseas primes; domestic firms locked out	Procurement Reform: Contract timelines beyond 2 years; NZDF as anchor buyer
Defence-Specific Challenges	MVP paradox: security prevents iterative feedback	Defence funding requires different model: non-dilutive early grants, equity with IP protection later
Strategic and Structural Needs	UNIVERSAL: All interviewees stressed need for long-term commitment	Stage 3: Defence Commission for multi-decadal planning insulated from electoral cycles
Desired Fund Features	Patient capital; government-backed hybrid; IP protection	Follow-on fund: semi-autonomous governance, 10+ year horizon, co-investment
Economic Value	Domestic production = direct GDP vs imports	Economic Value Framework: Direct GDP plus Indirect (capability, R&D spillovers, resilience)

Appendix D: Comparative Schemes

NATO DIANA (Defence Innovation Accelerator for the North Atlantic)

A concept developed by NATO nations in mid-2021 with HQ in London and regional hubs in Estonia and Canada. It runs on a competition basis with funding support for dual-use emerging and disruptive technologies, such as AI, autonomy, quantum, biotechnologies, energy/propulsion, novel materials, advanced manufacturing, aerospace, Big Data, and human enhancement.

It comprises two phases following the call for proposals requiring TRL 4 level concepts. Phase One (“Bootcamp”) is a 6-month incubator programme with a €100,000 upfront contracted payment and access to 17 accelerator sites and 180 test centres. After successful completion, Phase Two awards additional funding of €300,000. It is open to NATO-domiciled companies only. The first cohort in 2023 selected 44 companies from 1,300 applicants.

NATO Innovation Fund

A stand-alone fund from 24 NATO nations (excluding the USA) totalling over €1bn. It acts as a lead investor with initial investments up to €15m (with follow-on capital) and co-invests and directly invests. It has been criticised for favouritism and high turnover of senior staff and transparency and governance failures, including its only defence expertise, the managing partners, all departing in quick succession. This demonstrates that scale alone does not guarantee success; expert governance and clear strategic direction are essential.

EU Defence Equity Facility

The EU’s Defence Equity Facility (DEF) takes yet another approach, functioning as a Limited Partner co-investment model similar in structure to New Zealand Growth Capital Partners. Launched in January 2024, managed by the European Investment Fund on behalf of the European Commission’s DG Defence Industry and Space (DEFIS). Funded by a €100 million commitment from the European Defence Fund (EDF) and an additional €75 million from the EIF, totalling €175 million over 2024-2027. It is a co-investment vehicle that works in concert with private investment into dual-use and military tech, investing as a limited partner. Funds must invest 2x the facility’s contribution to avoid crowding-out. It made its maiden investment in May 2025.

UK Defence Innovation Organisation (UKDI)

On 1 July 2025 the UK formally launched UK Defence Innovation (UKDI), integrating DASA (Defence and Security Accelerator), DIU (Defence Innovation Unit), Command Innovation Hubs, and DE&S Future Capability Innovation (FCI) into a single organisation. It has a budget of £400m and is meant to “strike a balance between commercial agility and national security, particularly in areas such as data governance, cybersecurity, and supply chain integrity.”

UK NSSIF

The UK’s National Security Strategic Investment Fund (NSSIF) offers a different but complementary model. Managed by the British Business Bank and established in 2018 with £85m of capital, it operates similarly to

the European fund by co-investing alongside vetted investment funds and managers. As of June 2023 the fund had committed £220m with £718m co-invested from partner funds. The UK government recently announced a further £330m investment. NSSIF operates as a co-investment vehicle working alongside vetted fund managers with expertise in priority technology sectors. The founders of the fund openly acknowledge the need for self-interest. One advisor noted: “At least I know that the UK will have the ability to manufacture x, because the capital investment is being made here and the skills are growing up here.”

Canada: IDEaS (Innovation for Defence Excellence and Security)

The current system is a non-dilutive funding mechanism to support development in identified areas through competitions. Established in 2017, it plans to invest CAD1bn over 20 years. The structure of IDEaS has led to calls from the Canadian Global Affairs Institute for a not-for-profit publicly funded “private equity style” investor to work alongside defence tech incubators. In February 2026, Prime Minister Mark Carney announced a formal “Buy Canada” defence-industrial strategy with the explicit goal of awarding 70% of defence acquisitions to Canadian firms, targeting more than tripling Canadian defence industry revenue and creating 125,000 jobs over a decade.

USA IQT (In-Q-Tel)

Founded in 1999, IQT is a not-for-profit VC firm operated under charter from the CIA. It actively scouts and invests in commercially developed technologies that have defence and dual-use application. In-Q-Tel represents the gold standard for equity-based defence innovation funding. What distinguishes IQT is not merely its investment scale but its sophisticated approach to IP protection and strategic alignment

A proactive investor, it takes equity stakes and board roles from initial seed investments through to Series B. It states it has transitioned 500+ technologies into government partners and made over 800 investments, of which over 50 have attained unicorn status including Palantir and Anduril.

IQT reduces IP leakage risk by: embedding licensing and government-purpose rights into contracts; maintaining board observer oversight to monitor M&A; leveraging regulatory tools like CFIUS and ITAR; using escrow/licensing structures to preserve operational access; and diversifying its portfolio so no single acquisition undermines capability.

Australia’s Advanced Strategic Capabilities Accelerator (ASCA)

ASCA was launched in July 2023 and operates on project-based “missions.” With A\$748m allocated over four years (with \$3.4bn over the next decade) it supports defence and dual-use tech through targeted projects such as counter-drone tech and munitions initiatives. Like DIANA, awards are non-equity non-dilutive contracts. It prevents IP leakage through licensing agreements although it is not clear once out of the programme how companies continue to fund themselves.

Key Lessons for New Zealand

The international evidence consistently demonstrates that successful defence innovation funding requires: scale sufficient for credibility and private co-investment; commitment extending beyond electoral cycles (ideally 10+ years); and expert governance combining defence domain knowledge with commercial investment expertise.

For New Zealand, the lesson is clear: an accelerator addresses one part of the challenge, but capturing full economic value and retaining sovereign capability requires a comprehensive approach spanning early-stage acceleration, follow-on capital, procurement reform, and sustained strategic commitment. Without procurement pathways, even well-funded innovation remains trapped in demonstration mode. Technologies prove feasible but never scale to operational deployment, representing a fundamental failure to capture the full economic and strategic value of innovation investment.