NZIER PUBLIC GOOD PROGRAMME

THINKING ABOUT AOTEAROA NEW ZEALAND'S FUTURE

New Zealand's productivity prognosis

Determinants, dynamics and diffusion

NZIER public discussion paper

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Abbreviations used in this working paper

AI	Artificial intelligence
BERD	Business Expenditure on Research and Development
CRM	Customer Relationship Management
ERP	Enterprise Resource Planning
GDP	Gross domestic product
LP	Labour Productivity
ICT	Information and Communication Technology
IDI	Integrated Data Infrastructure
IoT	Internet of Things
LBD	Longitudinal Business Database
LP	Labour productivity
MBIE	Ministry of Business, Innovation and Employment
MFP	Multifactor productivity
NCEA	National Certificate of Educational Achievement
NZPC	New Zealand Productivity Commission
NZQA	New Zealand Qualification Authority
OECD	Organisation for Economic Co-operation and Development
PPE	Personal Protective Equipment
R&D	Research and development
RBNZ	Reserve Bank of New Zealand
SAEs	Small advanced economies
SMC	Small market comparator
SMEs	Small and medium-sized enterprises
TFP	Total factor productivity

Key points

New Zealand's productivity challenge is often framed as a problem of distance, small scale or weak innovation. The evidence in this review suggests the reality is more complex – and, importantly, more domestic.

New Zealand faces structural disadvantages that are difficult to overcome, particularly its geographic remoteness and limited market size. Yet these factors alone do not explain why productivity growth continues to lag behind that of comparable advanced economies.

The deeper challenge is that too little capital, technology, and capability are flowing into the parts of the economy that drive long-term productivity growth.

Our review of the evidence points to several consistent themes:

- Productivity growth has relied increasingly on incremental efficiency gains rather than strong capital deepening or broad-based innovation.
- Investment remains heavily concentrated in housing and asset-backed sectors, while many knowledge-intensive and high-growth firms face persistent financing barriers.
- New Zealand has a diffusion problem as much as an innovation problem. Leading firms continue to adopt technology, management practices and digital systems faster than the wider business sector.
- Skill mismatches, weak digital capability and uneven management quality limit firms' ability to absorb new technologies and lift productivity.
- Supply chain exposure, remoteness and small scale continue to raise costs and weaken international spillovers, but domestic policy and institutional settings can either mitigate or magnify these pressures.

The evidence, therefore, points toward a productivity agenda focused less on any single reform and more on improving the way capital, skills, technology, and innovation spread through the economy.

In practice, this means that many of the most important productivity constraints are not purely structural. They are shaped by investment incentives, regulatory settings, competition, workforce capability and firms' ability to scale and adapt.

Table 1 Prioritisation of productivity constraints for policy action

Prioritise: Actionable constraints	Strengthen: Complementary constraints	Manage: Structural constraints
• Capital is flowing to housing rather than productive investment • Weak business investment in R&D, ICT and digital capability • Slow diffusion of technology and management practices beyond frontier firms • Limited growth of knowledge-intensive, high-productivity firms	• Skills and education gaps limit technology adoption and innovation • Brain drain and migration dynamics affect the supply of skilled workers • Regulatory, institutional and cultural frictions can discourage investment and scaling • Workforce wellbeing and trust influence firm performance and adaptation	• Geographic remoteness raises trade and transaction costs • Exposure to global supply chain disruptions

Source: NZIER

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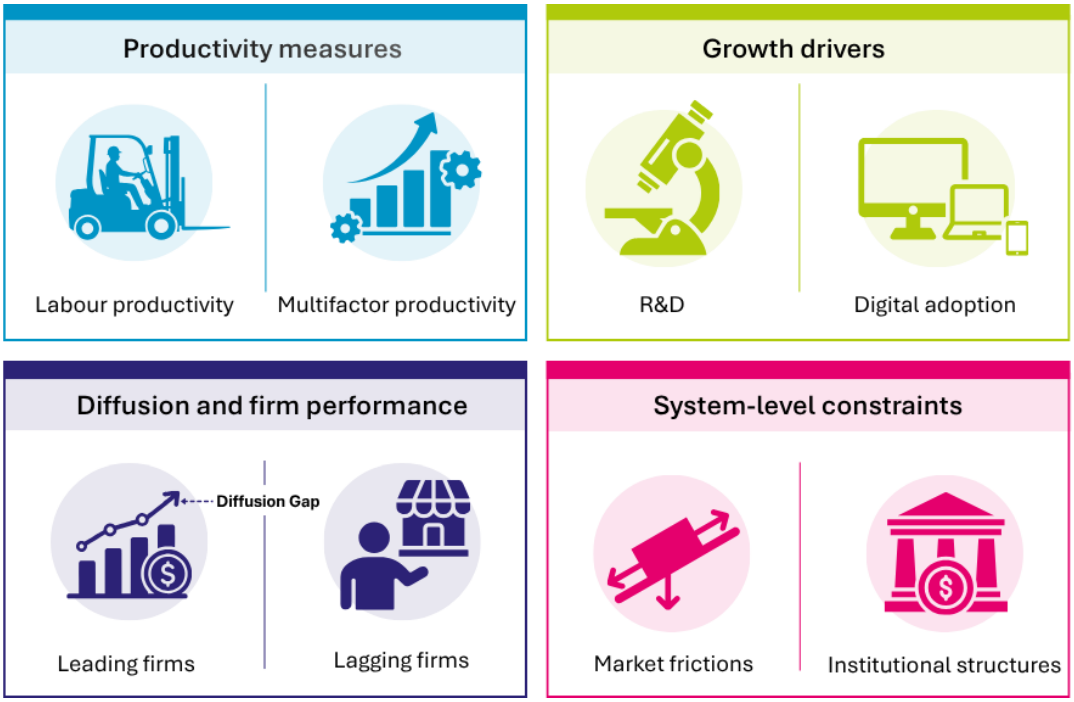
1 Key concepts and summary

Productivity is the foundation of long-term prosperity. It determines how much value an economy can generate from its workers, skills, technology and capital, making it the key driver of higher incomes, stronger businesses, better public services and rising living standards. For New Zealand, productivity matters because it has lagged behind other advanced economies for decades. This gap affects not only wages and competitiveness but also the country's ability to adapt to technological change, population ageing, supply chain disruptions, and the transition to a more knowledge-intensive economy.

This review focuses on the core productivity concepts used in the New Zealand literature, including:

- ***Productivity measures*:** The two main measures used in this review are labour productivity (LP) and multifactor productivity (MFP). Labour productivity refers to the amount of output (GDP) produced per hour worked. MFP refers to the share of output growth that cannot be explained by measured increases in labour and capital inputs and is often interpreted as reflecting factors such as efficiency, innovation, technology and management capability. Two related concepts are capital deepening, which refers to an increase in the amount of capital available per worker or per hour worked (capital intensity), and capital shallowness, which refers to relatively low capital intensity compared with that of peer economies.
- ***Growth drivers*:** A second set of concepts concerns the sources of productivity growth. Research and development (R&D) refers to investment in generating new knowledge, technologies, products and processes. Digital adoption refers to firms' uptake and effective use of digital tools and systems, including software, data infrastructure, automation, and online platforms, to improve the way work is organised and delivered. These processes matter because productivity growth depends not only on the creation of new ideas, but also on firms' ability to use them effectively.
- ***Diffusion and firm performance*:** A third group of concepts relates to how innovation spreads across the economy. Diffusion refers to the spread of new ideas, technologies and better business practices across firms and sectors over time. A diffusion gap arises when leading firms adopt and apply these advances more quickly than others. This can produce a long tail of lagging firms: a large group of businesses that persistently perform below the productivity frontier. The review also refers to skill mismatch, where workers' qualifications and capabilities do not align well with labour market needs, reducing the efficient use of labour and limiting firms' ability to adopt technology and improve productivity.
- ***System-level constraints*:** Finally, the review considers broader features of the economic environment that shape firm behaviour. Market frictions are barriers or inefficiencies that make it harder for labour, capital and ideas to move to their most productive uses. Institutional structures refer to the rules, policies and organisational arrangements that shape incentives for investment, innovation and competition.

Figure 1 Core productivity concepts



Source: NZIER

This review examines the main channels through which productivity performance is shaped in New Zealand. It begins by establishing a baseline picture of productivity levels, trends and measurement. It then considers the evidence on macroeconomic and structural drivers, including capital shallowness, remoteness, supply chain disruption and migration dynamics. The discussion next turns to innovation, investment and resource allocation, before examining human capital, skill mismatch and labour-market factors. The final substantive section reviews firm-level diffusion, market structure and the regulatory and institutional frictions that affect the spread of technology and best practice. Across each area, the approach is to synthesise the most relevant New Zealand evidence first, use international comparisons to sharpen interpretation, and identify the main gaps that future empirical work should address.

2 Background

Productivity growth is shaped by interrelated factors, including:

- Investment in knowledge and innovation
- Education quality and workplace support for people
- Firms' ability to absorb and diffuse new technologies
- Regulatory and cultural settings shaping competition and dynamism.

These dimensions raise key questions about what is driving low productivity in New Zealand:

Is New Zealand's productivity challenge primarily a story of underinvestment in R&D and digital adoption?

Or is it driven by mismatches between education, skills and labour market needs?

Perhaps the real bottleneck lies in the diffusion gap between a small cohort of high-performing firms and a long tail of laggards, or in the market frictions and institutional structures that shape incentives for investment and competition?

To ground these debates, this section establishes a baseline by defining key measures of productivity, tracing long-run trends, and placing New Zealand's performance in an international perspective before the following sections turn to the wider questions of innovation, human capital, diffusion, and market frictions.

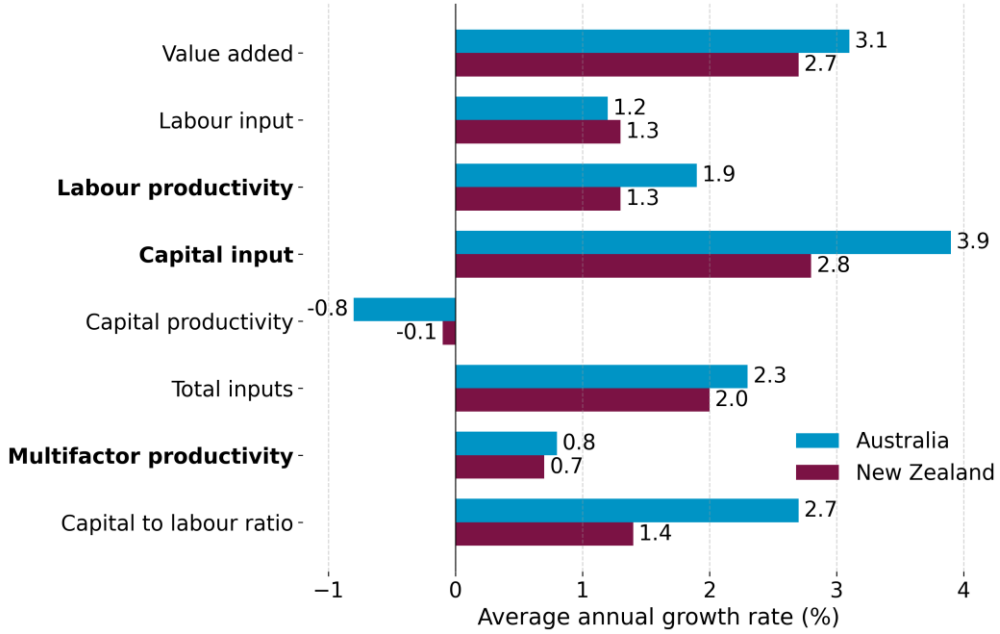
New Zealand's productivity challenge is most striking when viewed against its peers. Cross-country studies by the OECD[1] and IMF[2] show that New Zealand's labour productivity and MFP remain well below the OECD frontier, with persistent structural challenges including underinvestment, industry composition, and the costs of remoteness. Comparative data with Australia reinforce the importance of underinvestment in this story (see Figure 2). Although both economies recorded similar labour input growth between 1996 and 2022 (1.2 percent vs 1.3 percent), Australia achieved materially stronger labour productivity growth (1.9 percent vs 1.3 percent). However, the difference in MFP growth between the two countries was comparatively small (0.8 percent vs 0.7 percent). Therefore, the more important contrast is in capital accumulation: Australia recorded substantially stronger

1 *Organisation for Economic Co-operation and Development*: An intergovernmental organisation of mostly advanced economies that produces comparative data, policy analysis, and research on issues such as productivity, education, trade, and economic performance.

2 *International Monetary Fund*: An international organisation that monitors the global economy and provides economic analysis, policy advice, and financial support to member countries.

growth in capital inputs (3.9 percent vs 2.8 percent), indicating heavier investment per worker and helping to explain its stronger productivity performance. Taken together, these patterns suggest that New Zealand's lag reflects not just weaker efficiency growth, but also persistently shallower capital investment.

Figure 2 Average annual growth rates (1996–2022): Australia vs New Zealand

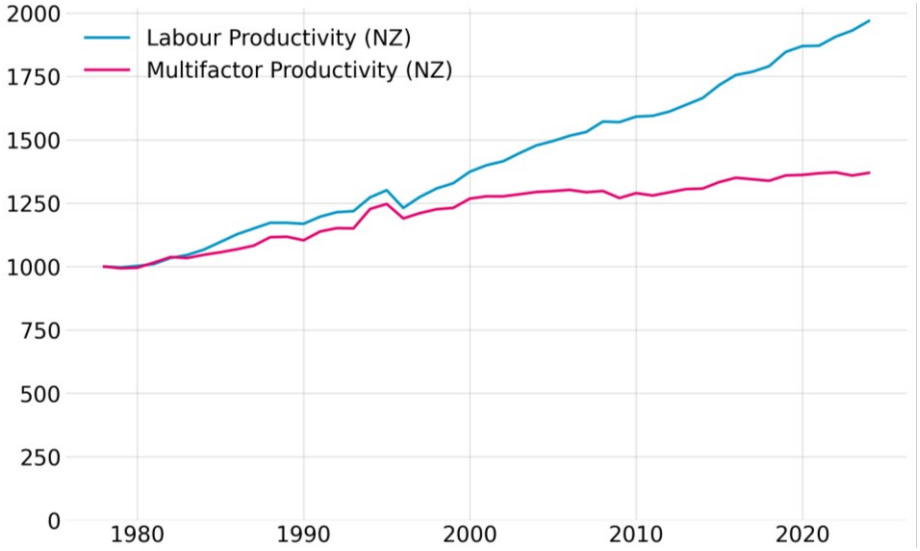


Source: Stats NZ (2023)

Behind these international gaps lie domestic trends that have unfolded over several decades. Since the late 1970s, New Zealand has recorded steady improvements in labour productivity, with output per hour worked nearly doubling. Yet MFP growth has been much more modest, remaining largely flat since the mid-2000s. Figure 3 provides a visual reference for the key productivity concepts used throughout this review, focusing on labour productivity and MFP as measured in New Zealand.

Figure 3 New Zealand labour and multifactor productivity trends

Index (1000 as at 1978), 1978–2024



Source: Stats NZ (2025b)

This widening divergence shows that the most recent productivity gains have stemmed from adding more capital per worker rather than from improvements in efficiency, innovation or technological diffusion. The weakness of MFP growth helps explain why New Zealand has struggled to converge to the OECD frontier, despite steady labour productivity gains. MFP growth typically reflects technological progress, improved management and more efficient use of resources.

To assist readers, Table 2 provides definitions, data sources, and coverage of the productivity measures used in this review, grounding the discussion of long-run trends in consistent, comparable indicators.

Table 2 Definitions, units, sources and data vintages of productivity measures

Measure	Definition	Units	Data source(s)	Vintage/ Coverage
Labour productivity	• Output (real GDP or value added) per hour worked • Reflects efficiency of labour use, but influenced by capital deepening and MFP	Index (1978=100) and % annual growth	Stats NZ Productivity Statistics (Stats NZ, 2025b); OECD Productivity Database (OECD, 2025c); Petrescu (2025)	Stats NZ: 1978–2024; OECD: 1970s–2023; IMF: 1996–2022
Capital input	• Flow of productive services from physical and intangible assets (e.g. plant, equipment, IP, ICT capital)	Index and % annual growth	Stats NZ *Productivity Statistics*; OECD STAN (OECD, 2025e); Petrescu (2025)	Stats NZ: 1978–2024; IMF: 1996–2022
Capital intensity	• Ratio of capital services to hours worked • Indicates intensity of capital use per worker	Ratio (Index, % growth)	Stats NZ *Productivity Statistics*; Petrescu (2025)	Stats NZ: 1978–2024; IMF: 1996–2022
Capital productivity	• Output per unit of capital input • Indicates efficiency of capital use	Index (1978=100) and % growth	Stats NZ *Productivity Statistics*; Petrescu (2025)	Stats NZ: 1978–2024; IMF: 1996–2022
Total Inputs	• Weighted index of labour and capital inputs, used in MFP calculations	Index and % growth	Stats NZ *Productivity Statistics*	Stats NZ: 1978-2024
Multifactor productivity (MFP/TFP)	• Output growth not explained by labour or capital inputs • Proxy for innovation, efficiency and technology	Index (1978=100) and % growth	Stats NZ *Productivity Statistics*; OECD Productivity Database; Petrescu (2025)	Stats NZ: 1978–2024; OECD: 1970s–2023; IMF: 1996–2022
Value added (Output)	• The inflation-adjusted value created by industries after deducting the value of inputs bought from other producers • Measured as real GDP for the economy as a whole	NZD (constant prices) or Index (1978=100)	Stats NZ National Accounts (Stats NZ, 2022); OECD Productivity Database	Stats NZ: 1978–2024; OECD: 1970s–2023

Source: As per table

3 Macroeconomic productivity and structural dynamics

3.1 Capital shallowness and under-investment

As outlined in the previous section, most labour productivity gains have come from adding more capital per worker. However, Petrescu (2025) shows that much of this investment has been concentrated in lower-return areas, with weak contributions from intangible and ICT capital, helping explain persistently low MFP growth. Additionally, NZIER (2024) highlights capital shallowness as a persistent constraint, with low investment in tangible and intangible assets limiting productivity growth. Compared with other small advanced economies[3] (SAEs) such as the Nordics, Ireland and Singapore, New Zealand's lower capital intensity underscores its reliance on labour rather than on sustained investment-led growth. Cook et al. (2024) and Devine et al. (2024) echo these findings, warning that under-investment in both physical infrastructure and knowledge assets constrains long-term growth potential.

Devine et al. (2024) even provide several benchmark groups for New Zealand comparison because no single comparator captures all dimensions of New Zealand's productivity challenge. The G7[4] serves as a benchmark for the productivity frontier among large advanced economies; the small market comparator (SMC) group compares New Zealand with economies that are more similar in scale and openness; and the broader OECD group provides a wider advanced-economy reference point. These groups therefore serve different analytical purposes: frontier comparison, structural comparability, and broad international context.

Wilkinson (2024) stresses that the problem is not only low investment volumes but also the allocation of capital, with a disproportionate share directed toward asset-backed sectors such as housing rather than knowledge-intensive industries. Empirical modelling by Deloitte (2025) reinforces this point, estimating that raising R&D spending toward the OECD median and accelerating ICT adoption could deliver substantial productivity gains, yet New Zealand continues to lag behind comparable economies in both measures.

Over the long run, New Zealand's labour productivity has risen steadily, but the sources of that growth have changed over time. Earlier gains from the late 1970s to 1996 were supported to a greater extent by capital deepening. By contrast, the decomposition for the more recent period, 1996–2022 (see Figure 4), shows a different pattern: capital deepening made a small negative contribution on average, while MFP made the main positive contribution to labour-productivity growth. In other words, labour productivity still increased, but less because workers had more capital to work with and more because efficiency and technology improvements offset weak capital deepening. This shift helps explain why New Zealand's productivity performance has become more fragile over time.

[3] Small advanced economies are developed, high-income nations with populations typically between 1 and 20 million (often 5–10 million) (Skilling, 2020). They are characterised by high levels of innovation, strong international trade integration, and specialised, competitive, export-oriented sectors, such as Denmark, Finland, Ireland, Israel, New Zealand, Singapore, and Switzerland.

[4] An intergovernmental political and economic forum consisting of Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

Analogy

Think of a worker trying to achieve more each hour. Productivity can rise in several ways, but the most important are not about asking people to work harder, faster, or longer. A worker may produce more because:

- they become better organised or find smarter ways of working
- they are given better tools, machines, software, infrastructure, or systems
- unnecessary delays, duplication, or bottlenecks are removed.

MFP is closest to the first and third ideas: getting more output from better organisation, processes, know-how, management, technology use, or efficiency. Capital deepening is the second idea: giving each worker more or better equipment and systems to work with.

This is different from simply intensifying work effort. Higher productivity means workers can produce more value with the same or less strain.

New Zealand appears to have lifted productivity during this period more through efficiency and know-how than through rising capital per worker. This does not mean MFP gains are unimportant or unsustainable, but it does indicate that capital deepening played a weaker role in supporting productivity growth.

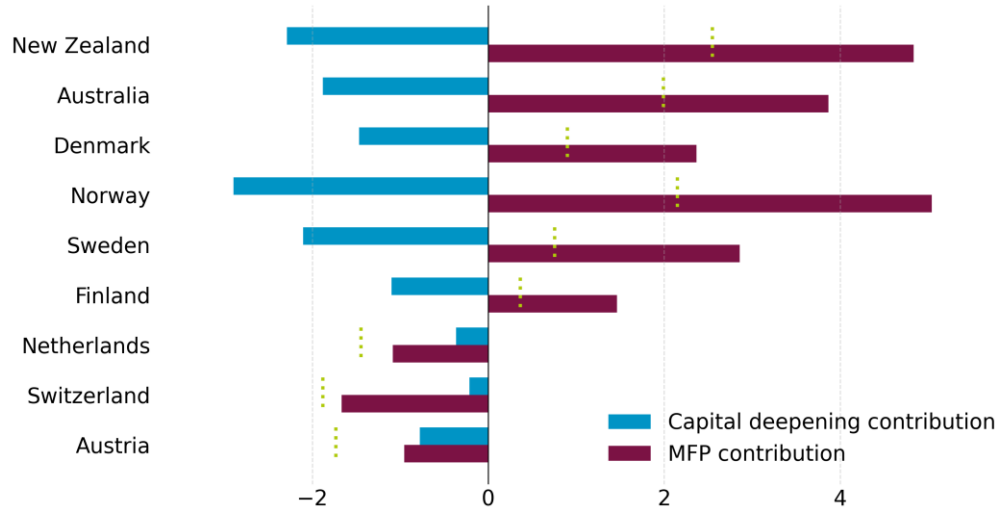
Figure 4 (below) suggests that recent New Zealand productivity growth was weakly supported by capital deepening. Over 1996–2022, the small amount of positive labour-productivity growth came mainly from MFP, while capital deepening made a negative contribution. This indicates that the capital available per worker did not increase in a way that supported stronger productivity growth. In that sense, the decomposition is consistent with broader concerns about 'capital shallowness'.[5] New Zealand is not alone in showing growth that relied more on MFP than on capital deepening, but it stands out because the negative contribution from capital deepening was the second-largest in the comparison group, after Norway.

Note that the MFP values in Figure 2 and Figure 4 are not directly comparable because they show different things. Figure 2 shows how fast MFP and capital input grew on average in Australia and New Zealand. Figure 4 shows how much MFP and capital deepening contributed to labour productivity growth over that period. In other words, Figure 2 reports growth rates of the underlying variables, while Figure 4 breaks labour-productivity growth into its main sources.

[5] The status of being relatively low capital intensity compared with peer economies – *Refer to section 1 for other definitions.*

Figure 4 Labour productivity growth decomposition: contributions from capital deepening and MFP

Average annual growth (%), 1996–2022



Source: OECD (2025d)

To complement the descriptive decomposition of capital deepening and multifactor productivity in Figure 4, Table 3 synthesises quantitative evidence from major studies examining the drivers of New Zealand's productivity performance. These studies use a mix of methodologies, ranging from macroeconomic growth accounting and time-series decomposition to firm-level modelling and scenario analysis, to estimate the share of New Zealand's labour productivity growth attributable to capital deepening versus underlying MFP improvements. Together, they illustrate both the consistency of views across institutions (IMF, Treasury, NZIER, Deloitte and NZ Initiative) and the limitations of the current evidence base: while most studies emphasise the influence of weak capital deepening in driving productivity, only a few quantify the extent of these influences.

Table 3 Summary of analyses on the influence of capital deepening and MFP on productivity in New Zealand

Source	Methodology	Key findings, effect sizes and timeframes
Petrescu (2025)	Growth decomposition (capital, MFP, quality)	Capital deepening contribution small or even negative. The study focuses on NZ from 1970 to 2022.
NZIER (2024)	Sector / aggregate empirical comparison	Capital deepening supported LP growth, but New Zealand remains considerably behind high-productivity small economies. Core productivity data in the study spans from 1996 to 2022.
Devine et al. (2024)	Cross-country comparison & decomposition	NZ's weak MFP and capital growth are central to its productivity gap vs G7/OECD peers.[1] They compare, for each country, the contribution to growth in real net national income per capita[2] between the 1995–2002 average and 2019.
Cook et al. (2024)	Macro forecasts & decomposition	Diminished capital input and MFP are driving the recent slowdown; both are lagging historic trend

Source	Methodology	Key findings, effect sizes and timeframes
		levels. This uses the OECD productivity database 1970–2022.
Deloitte (2025)	Economic modelling & forecasting	No explicit elasticities reported; forecast models suggest substantial productivity gains (e.g. US$46 b by 2035) from increasing R&D and tech adoption. Multiple time windows: 1989–2021 (R&D), 2001–2029 (GDP per capita incl. forecasts) and 2010–2028 (labour productivity forecasts).
Hartwich (2024)	Policy commentary	Highlights that weak capital accumulation and poor MFP underpin the structural productivity crisis. This is an opinion informed by evidence from sources such as the RBNZ and Treasury forecasts.

1 These groups serve different purposes: the G7 approximates the large advanced-economy frontier, while the SMC group provides a more structurally comparable benchmark for NZ as a small open economy. These groups serve different analytical purposes (frontier comparison and structural comparability) to capture various dimensions of NZ's productivity challenge.

2 Net national income is a measure of income accruing to residents after allowing for depreciation of capital; in real per capita terms, it provides a broader indicator of living standards than GDP per capita alone.

Source: As per table

3.2 Remoteness, scale and industry structure

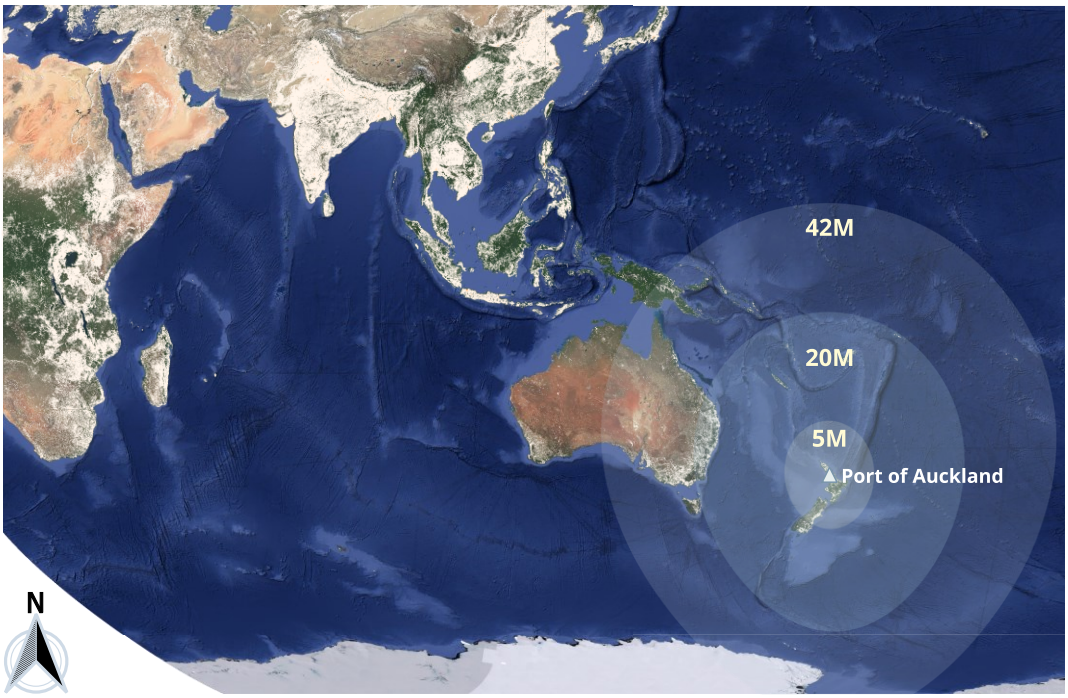
Geographic remoteness and market size are structural drivers of New Zealand's persistent productivity gap relative to other countries. Conway (2017) argues that New Zealand *is not a typical OECD economy* because of its small population scale, low density, and extreme geographic isolation. These factors limit access to international markets and make it more difficult to implement productivity-enhancing policies than in larger or better-connected economies. These constraints raise trade and transaction costs, limit scale economies and weaken international linkages in New Zealand compared with other SAEs. They also interact with New Zealand's industry mix, favouring resource-based and lower-productivity sectors while restricting the growth of knowledge-intensive industries.

Long shipping times, limited connectivity to global value chains and small market size are barriers that reduce competitive pressures and slow innovation diffusion (Petrescu, 2025). Evidence from the NZ Productivity Commission (2021b) shows that New Zealand's frontier firms remain disproportionately domestically focused, lacking the international exposure of peers in Ireland, Denmark or the Netherlands.

Figure 5 illustrates New Zealand's limited access to large population centres by showing the population potentially reachable within 1,000 km, 3,000 km and 5,000 km of the Port of Auckland. The distance bands highlight New Zealand's relative remoteness: within 1,000 km, the accessible population is mostly confined to New Zealand itself, and much larger catchments are needed before reaching the major population centres of Australia and the wider Asia-Pacific region. Also, New Zealand is geographically remote from the world's major population concentrations, which appear on the map as dense yellow clusters.

An MBIE consultation identifies demographics, including ageing populations and migration patterns, as a key theme in the context of New Zealand's future productivity, and notes the importance of workforce development, skills, and immigration settings (MBIE 2024). These factors are discussed further in sections 3.4 and 5.

Figure 5 Population within 1,000 km, 3,000 km and 5,000 km of the Port of Auckland, New Zealand



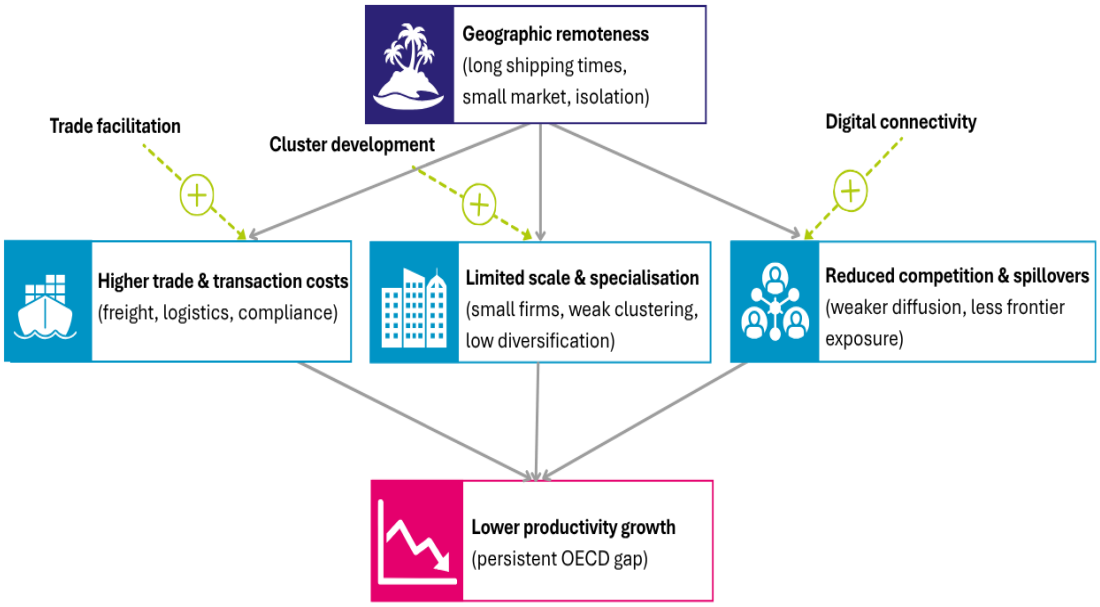
Note: 5 million within 1,000 km (NZ only); 20 million within 3,000 km (plus Eastern Australia); and 42 million within 5,000 km (plus Southern Australia and Papua New Guinea).

Data source: Bondarenko et al. (2025); Mapping: NZIER

Australia provides a useful counterpoint, showing that policy and institutions can partly offset the costs of distance. Despite similar geographic distance, it has mitigated these costs through higher capital investment, stronger resource reallocation (i.e. shifting its people and money to where they are most productive) and more open institutional settings. In New Zealand, by contrast, under-investment and regulatory barriers may have magnified these effects. Later sections examine this proposition in more detail, with reference to the New Zealand case.

Figure 6 below illustrates how remoteness translates into higher costs, smaller firm size, weaker clustering, and reduced spillovers, which together constrain diffusion and convergence with the OECD frontier. Table 4 below anchors these channels with evidence from the IMF, OECD, Treasury and NZPC, showing the tangible ways in which distance and scale limitations translate into underperformance.

Figure 6 Channels linking geographic remoteness to productivity performance



Source: NZIER

Table 4 Evidence of remoteness-productivity channels

Source(s)	Channel	Evidence
Bondarenko et al. (2025)	Geographic remoteness	From Port of Auckland, population within the radius of: • 1,000 km is 5 million • 3,000 km is 20 million • 5,000 km is 42 million (see Figure 5)
Falvey & Gemmell (2014); NZ Productivity Commission (2021b)	Trade & transaction costs	• Prices for tradable goods in NZ are around 18% higher than the OECD average • Remoteness reduces integration into global value chains
NZ Productivity Commission (2021b)	Scale & specialisation	• Singapore invests in global talent and knowledge • Denmark builds international innovation linkages • NZ firms are less exposed to international trade
OECD (2024b); Devine et al. (2024)	Competition & spillovers	• Limited scaling into frontier firms • Slower diffusion of innovation practices • International connections exist, but diffusion to domestic firms is not strong

Source: As per table

3.3 Supply chain disruptions and forecasting under uncertainty

Supply chain vulnerabilities have become a critical determinant of New Zealand's productivity performance, especially since COVID-19. Geographic remoteness, reliance on imported inputs, and dependence on long shipping routes mean that disruptions quickly

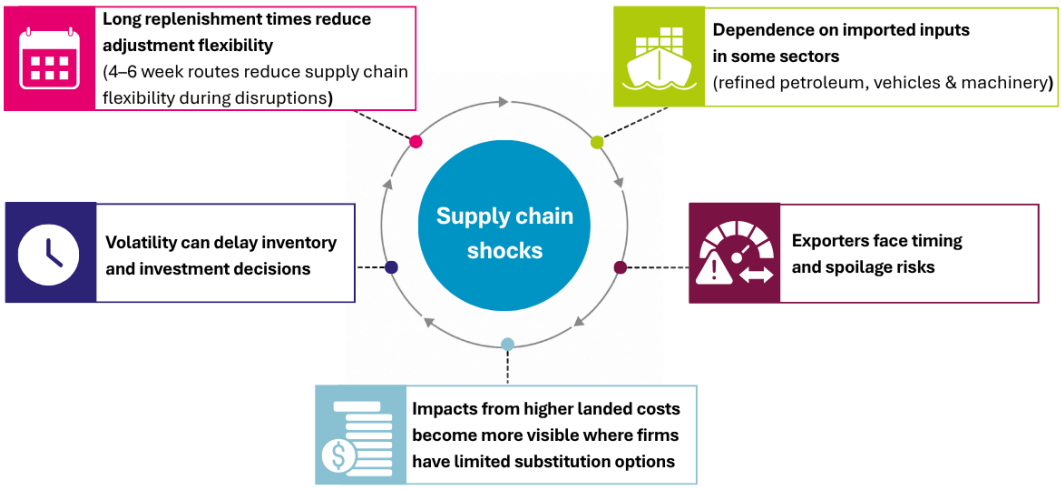
cause production bottlenecks, higher costs, and lost output. Small and open economies like New Zealand are particularly exposed, with limited domestic substitutes.

Studies reinforce this diagnosis. Fehrer et al. (2024) highlight systemic risks from reliance on overseas suppliers, with distance magnifying shipping delays across sectors such as food processing, manufacturing and healthcare. The persistence of shocks compounds this vulnerability: Mollenkopf (2024) shows that pandemic-era disruptions had long-lasting effects, underscoring the need for resilience planning rather than ad hoc responses. In turn, Taj et al. (2023) recommend mitigation measures such as digital traceability and IoT[6]-based monitoring to improve visibility across supply chains, alongside diversification, inventory resilience and contingency planning. These measures matter because, as the Treasury (2021) noted, freight surges and bottlenecks contributed to inflationary pressures and productivity slowdowns, with smaller exporters particularly exposed.

Current indicators from the NZIER QSBO (2025b) show that business confidence and investment intentions remain sensitive to supply chain reliability. This raises the question of whether such disruptions continue to influence firms' investment behaviour in ways that may constrain long-run productivity growth.

Figure 7 below illustrates the main channels through which supply chain shocks can affect New Zealand's productivity performance. Long replenishment times reduce firms' ability to adjust quickly to disruptions, particularly when shipping routes are lengthy and alternatives are limited.

Figure 7 Channels linking supply chain shocks to productivity



Source: NZIER

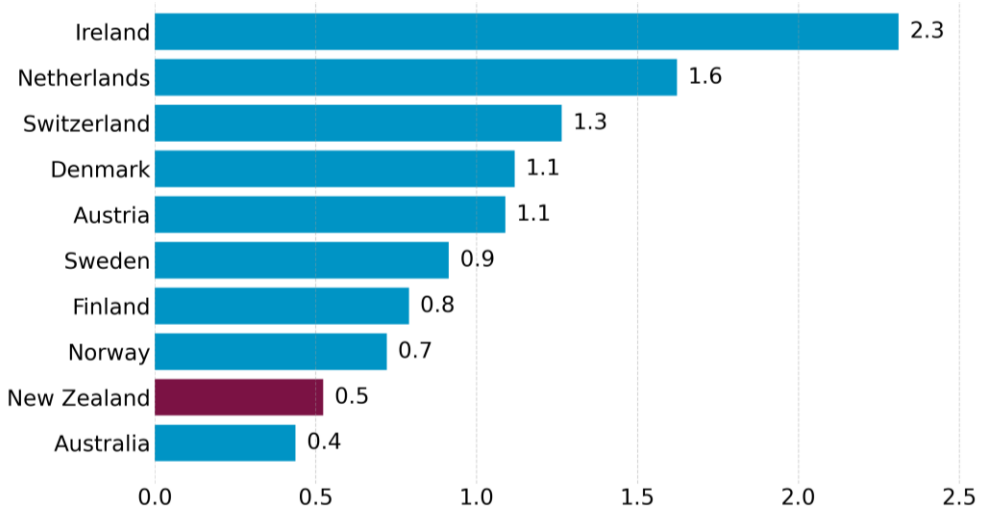
Even though New Zealand generally does not rely heavily on trade compared to its peers (see Figure 8 below), the effects are more pronounced in sectors that depend on imported inputs, such as refined petroleum, vehicles, and machinery, where substitution options may be limited. Exporters are also exposed, especially where delays create timing, spoilage or delivery risks. More broadly, higher landed costs become more visible in affected sectors when firms cannot easily switch inputs or suppliers. Ongoing volatility can then delay

[6] IoT or 'Internet of Things' refers to networks of connected physical devices, such as sensors, scanners and tracking equipment, that collect and transmit real-time data on the location, condition and movement of goods across the supply chain.

inventory and investment decisions, weakening business responsiveness and, over time, constraining productivity growth.

Figure 8 Trade openness (total exports and imports relative to GDP): Average ratio of trade to GDP for New Zealand vs peers

Share of GDP (%), 2015–2023



Source: Müller et al. (2025)

Table 5 below summarises sectoral exposures and possible resilience responses, but these should not be interpreted as uniformly productivity-enhancing. Their value depends on whether they reduce disruption at a lower cost than the output losses they are intended to avoid. For example, better forecasting, digital tracking and a broader supplier base may raise productivity if they reduce disruption at relatively low cost and improve operational efficiency more broadly. On the other hand, maintaining large stockpiles, persistently duplicating supply, or subsidising vulnerable firms may be expensive and can lock resources into low-return uses. From a productivity perspective, the key issue is therefore not simply whether firms can take precautions, but whether those precautions generate net gains relative to the alternative of adaptation, market exit and resource reallocation. In some cases, resilience investments will support productivity; in others, allowing less efficient firms or practices to be replaced may better support long-run productivity growth.

Table 5 Sectoral exposure to supply chain shocks and resilience levers

Sector / Industry	Exposure to supply chain Shocks	Resilience levers/ mitigation strategies	Productivity considerations / trade-offs
Agriculture & horticulture	Export timing is critical; shipping and port delays raise spoilage and reputation risks (Lewis et al. 2021).	Broader market spread[1]; cold-chain investment; digital tracking; trade facilitation (Fehrer et al. 2024).	Greater resilience, but higher logistics/compliance costs and lower scale efficiency.
Manufacturing	Imported machinery, chemicals and intermediates expose firms to bottlenecks and downtime (Treasury, 2021).	Multi-sourcing; just-in-case inventories; nearshoring[2]; digital monitoring (Fehrer et al. 2024).	More continuity, but higher inventory, sourcing and working-capital costs.
Healthcare & pharmaceuticals	Imported medicines, PPE and equipment are vulnerable to delays and shortages (Mollenkopf, 2024).	Stockpiles; priority shipping; regional procurement; domestic backup capacity (Mollenkopf, 2024).	Better supply security, but capital tie-up and obsolescence[3] risk.
ICT & electronics	Reliance on imported hardware and chip shortages is amplified by small scale (Lewis et al. 2021).	Long-term contracts; regional partnerships; digital substitution where feasible (MBIE, 2023).	Lower supply risk, but less flexibility, transition costs and vendor dependence.
Logistics & transport services	Shipping, freight and air disruptions raise costs economy-wide (Treasury, 2021).	Port upgrades; digital logistics (Ministry of Transport, 2023); contingency coordination.	Efficiency gains possible, but with high upfront cost and coordination needs.
Food processing & retail	Input and freight volatility raise costs and consumer prices (Treasury, 2021).	Local sourcing; circular-economy practices; inventory optimisation (Fehrer et al. 2024).	Shorter supply chains, but potentially higher unit costs and capability needs.

1 See the current status in Figure 9.

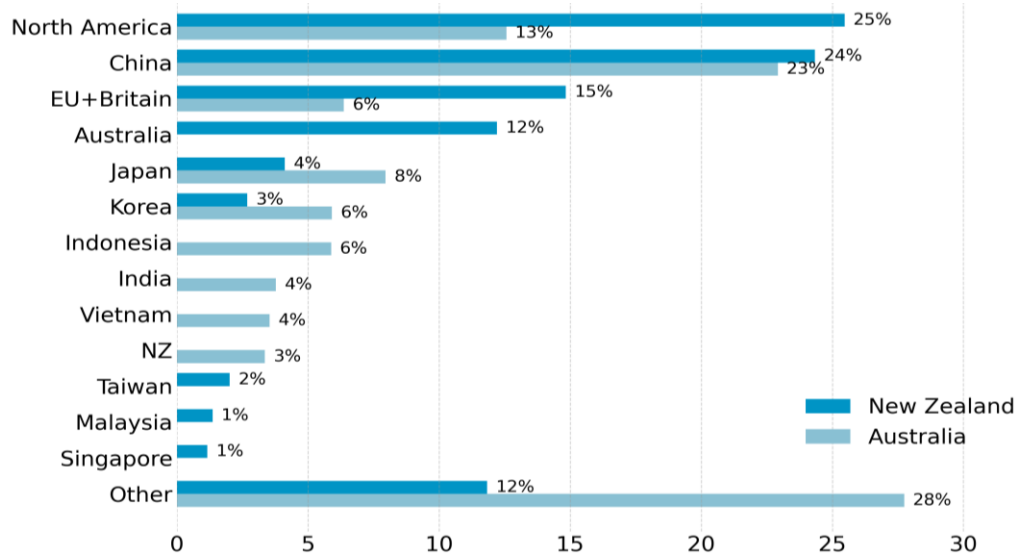
2 Nearshoring means sourcing or producing from nearer countries to shorten supply chains and reduce disruption risk.

3 Obsolescence means the stockpiled goods may become outdated, unusable, or less valuable before they are needed.

Source: As per table

Figure 9 New Zealand and Australia's agriculture and horticulture exports

Share of exporter total (%) by country, 2025



Note: The figure suggests New Zealand's export markets are more concentrated in a few large destinations than Australia's. In 2025, North America (NA) (25%), China (24%) and EU+Britain (15%) accounted for the largest shares of New Zealand agricultural and horticultural exports. Australia also relies heavily on China (23%), but its remaining export shares are spread more evenly across several other markets.

Source: Stats NZ and Department of Foreign Affairs and Trade, Australia

3.4 Immigration trends and brain drain

Migration flows, comprising both immigration inflows and emigration outflows, have long been central to New Zealand's economic and productivity trajectory. Immigration provides firms with access to skills, labour flexibility and international linkages, while emigration, especially the movement of skilled workers to Australia, erodes the domestic talent pool and constrains long-term growth. Understanding the net impact of migration, therefore, requires analysing both sides of the flow.

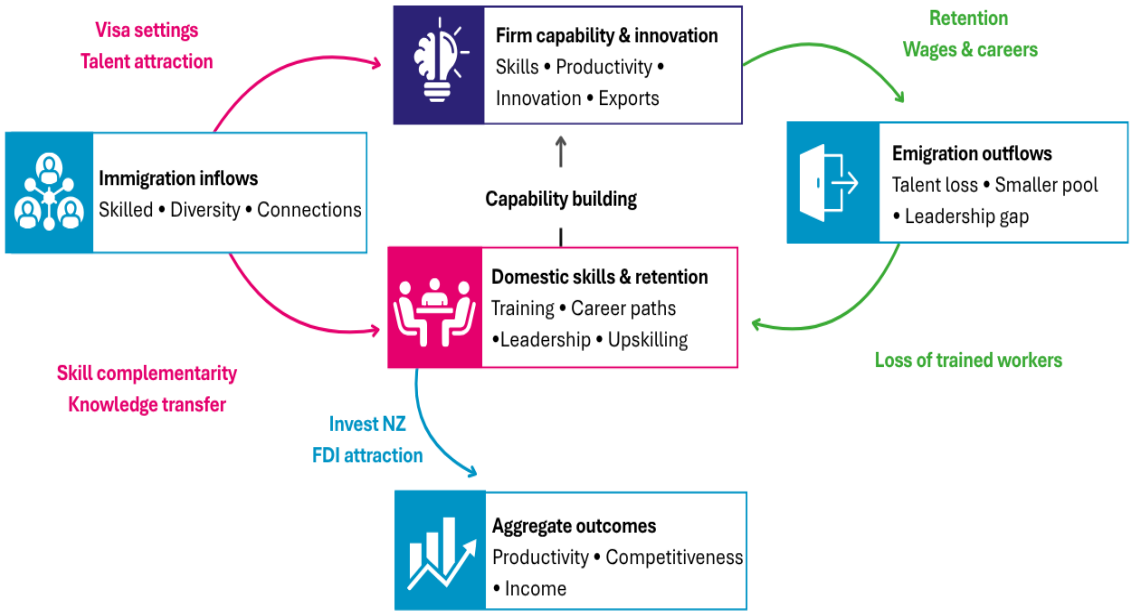
On the positive side, immigration inflows bring complementary skills, diversity and innovation linkages. Fabling et al. (2022) show that firms with higher migrant shares achieve stronger productivity growth, particularly in knowledge-intensive services, ICT and high-skill manufacturing. Migrant workers contribute not only to labour supply and flexibility in sectors such as agriculture and construction, but also to innovation, as evidenced by higher rates of patenting, R&D intensity, and international connections in migrant-heavy firms.

At the same time, emigration outflows, the persistent 'brain drain' to Australia, reduce the domestic skill base. Net outflows of tens of thousands of disproportionately young and highly skilled workers to Australia annually reduce the country's long-run productivity potential (Stats NZ, 2025a). This loss has driven a deterioration in skill matching, with firms struggling to retain mid-career professionals, and has weakened R&D capacity due to their departures. More details on skill mismatch will be presented in section 5.1.

However, the emphasis still remains on local skills development because migration policies affect productivity not only through the number of people coming and going or their skill levels, but also through whether New Zealand is building and retaining its own skills. Skilled

immigration can complement local workers, transfer knowledge and relieve bottlenecks, but it may also weaken firms' incentives to invest in training if used mainly as a substitute for domestic skill development. Similarly, skilled emigration is more costly when it reflects weak retention, limited career progression or the loss of workers whose education and training have already been partly financed in New Zealand.

Figure 10 Impacts of migration on productivity: immigration gains vs brain drains



Source: NZIER

Figure 10 above reflects this broader mechanism: immigration can strengthen firm capability by easing shortages, adding complementary skills, and supporting knowledge transfer, while emigration can weaken the local pool of trained and experienced workers. The diagram also shows that domestic skills and retention settings, including training, upskilling, career pathways and leadership, can influence these effects.

Table 6 Effects of immigration on firm productivity in New Zealand

Channel	Evidence from New Zealand microdata	Industry/ sector coverage	Estimated effect sizes	Outflow risks and limits to inference
Skilled migrant inflows	Fabling et al. (2022) use employer-employee linked data (LBD/IDI) and find that firms with higher migrant shares tend to record stronger productivity growth, with effects varying by sector and worker mix.	Strongest in knowledge-intensive services, ICT and high-skill manufacturing.	Positive firm-level productivity associations are reported, though effects depend on the role migrants play and firm characteristics.	These gains do not imply that migration policy can perfectly identify future high-productivity workers in advance. Selection is easier in clearly credentialed occupations than in broader innovation or leadership roles, where productivity effects depend more on post-arrival matching and firm use of skills.

Channel	Evidence from New Zealand microdata	Industry/ sector coverage	Estimated effect sizes	Outflow risks and limits to inference
Innovation & R&D impacts	Migrant inflows are associated with greater patenting, R&D intensity and international connections in some NZ firm-level studies (e.g. McLeod et al. 2014).	More evident in export-oriented and innovation-intensive firms.	Effects appear stronger where migrants are employed in specialist or innovation-facing roles, though broad economy-wide elasticities are limited.	When migrants and NZ-educated entrants are attracted into NZ by shortage signalling but face exclusion and weak conversion into stable skilled employment, some may choose to leave (Stanaway, 2026). This reduces the effective stock of specialised skills available domestically, although direct evidence on the aggregate size of this effect remains limited.
Labour market flexibility	Migrant inflows help firms adjust to demand shocks and scale up capacity (NZ Productivity Commission, 2021a).	Agriculture, horticulture, hospitality, construction.	Gains mainly in continuity of production and reduced bottlenecks.	Outflows of young workers to Australia limit labour availability in some sectors, driving reliance on temporary migration.
High-skilled workers	Higher-skilled New Zealanders are more likely to leave (Schaer, 2025).	Multinational, export-oriented and globally connected firms.	Case-based and indicative rather than robust economy-wide estimates.	High emigration of skilled New Zealanders reduces the domestic public returns to investment in human capital and may weaken the local pool of experienced talent, particularly when returns to skills[1] are already low.

1 Returns to skills: How much benefit people get from having more skills, education or experience.

Source: As per table

4 Innovation, investment and resource allocation

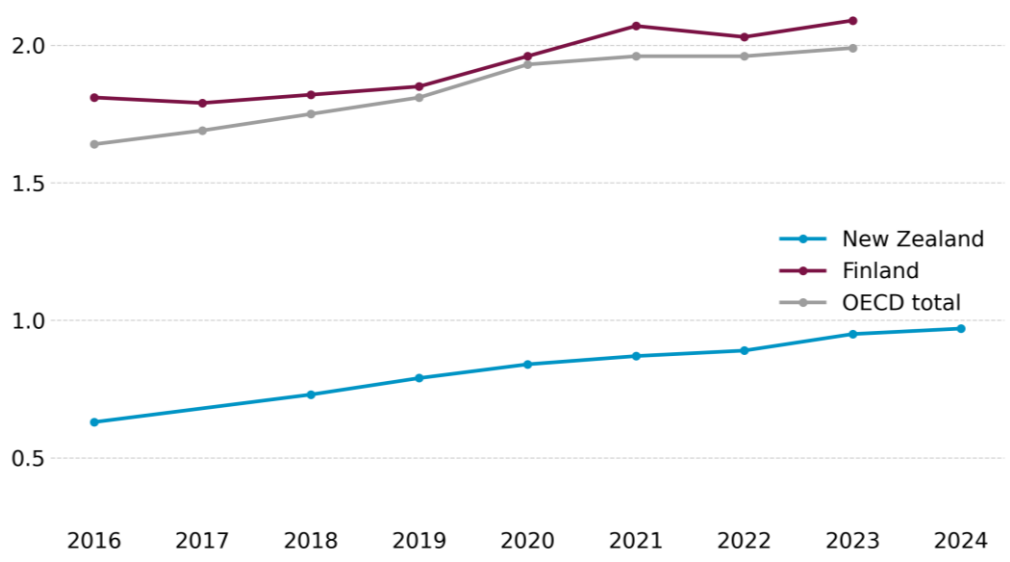
4.1 Innovation inputs and outcomes (R&D, ICT, BERD)

Innovation and technology adoption are key drivers of long-run productivity growth, yet New Zealand remains a below-average performer relative to other OECD economies regarding adopting CRM[7] and ERP.[8] Figure 11 shows that BERD as a share of GDP rose steadily from 0.63 percent in 2016 to 0.97 percent in 2024, but the OECD total increased from 1.64 percent to 1.99 percent over the same period, leaving New Zealand persistently well behind the international benchmark. Thus, while R&D effort has strengthened, New Zealand's business innovation intensity remains only about half the OECD level.

Table 7 indicates that this shortfall is accompanied by comparatively weak ICT uptake among SMEs and lower readiness for AI and other advanced digital technologies. These combined gaps help explain New Zealand's weak innovation performance and modest productivity growth, particularly in service industries where digital adoption and intangible investment are increasingly important.

Figure 11 Business Expenditure on Research and Development (BERD)

Percentage of GDP, New Zealand vs Finland vs OECD total, 2016–2024



Source: Stats NZ

[7] Software used to manage a firm's interactions with customers and sales leads. It helps track contacts, sales pipelines, marketing, and customer service.

[8] Software used to integrate and manage a firm's core internal operations, such as finance, inventory, procurement, production, and HR.

Table 7 Benchmarking New Zealand's R&D, BERD and ICT adoption indicators

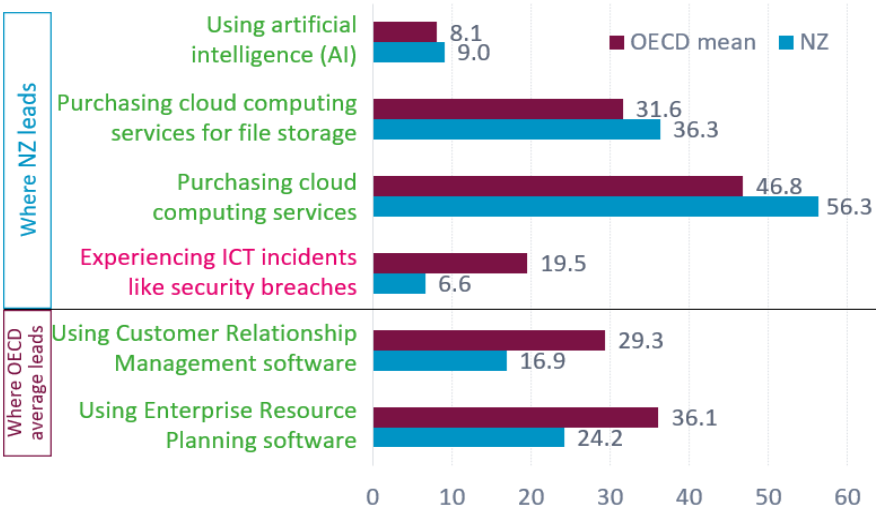
Indicator	New Zealand (latest available 2016–25)	OECD median	SAE examples	Sources
Growth in BERD	BERD as a share of GDP grows from 0.63% in 2016 to 0.97% in 2024	From 1.64% in 2016 to 1.99% in 2023	Compared to OECD, similar increases were found in ICT-intensive SAEs like Finland (see Figure 11)	Stats NZ (2025c)
Government & Higher Education R&D (% of GDP), 2021	~0.4%	~0.4%	Ireland: 0.2%; Denmark: 0.9%	Stats NZ (2024); OECD (2025b)
ICT adoption (SMEs using cloud services)	<50%	~63%	Netherlands ~81%; Hungary ~66%	NZIER (2025a); OECD (2025a)
Barriers to business digitalisation in NZ	Security and fraud concerns (49%), difficulty choosing the right tools (35%) and lack of time to learn (34%) for NZ (No equivalent data for OECD)			Better for Business (2024)
Business digital adoption	NZ is above the OECD in cloud use, near the OECD in AI, below the OECD in CRM and ERP, and has fewer ICT incidents reported in 2022 (AI is a broad term that covers systems that perform specific cognitive tasks such as prediction, pattern recognition or content generation. On the other hand, AGI (artificial generative intelligence), as a subcategory of AI, refers to a hypothetical form of AI with human-like general intelligence across many domains (e.g. ChatGPT). In this context, AI usually refers to the former (the broader sense), not AGI. Source: As per table Figure 12).			OECD (2023)
AI[1] readiness/use	Most are uncertain about AI systems	OECD average ~10% of firms adopting AI	Denmark ~20%; Belgium ~18%	AI Forum NZ (2023); OECD (2024a)

1 AI is a broad term that covers systems that perform specific cognitive tasks such as prediction, pattern recognition or content generation. On the other hand, AGI (artificial generative intelligence), as a subcategory of AI, refers to a hypothetical form of AI with human-like general intelligence across many domains (e.g. ChatGPT). In this context, AI usually refers to the former (the broader sense), not AGI.

Source: As per table

Figure 12 Business digital adoption in 2022

New Zealand vs OECD mean



Note: Percentage of the surveyed companies in NZ and OECD countries.

Green labels indicate metrics where higher values are better; magenta labels indicate metrics where higher values are worse.

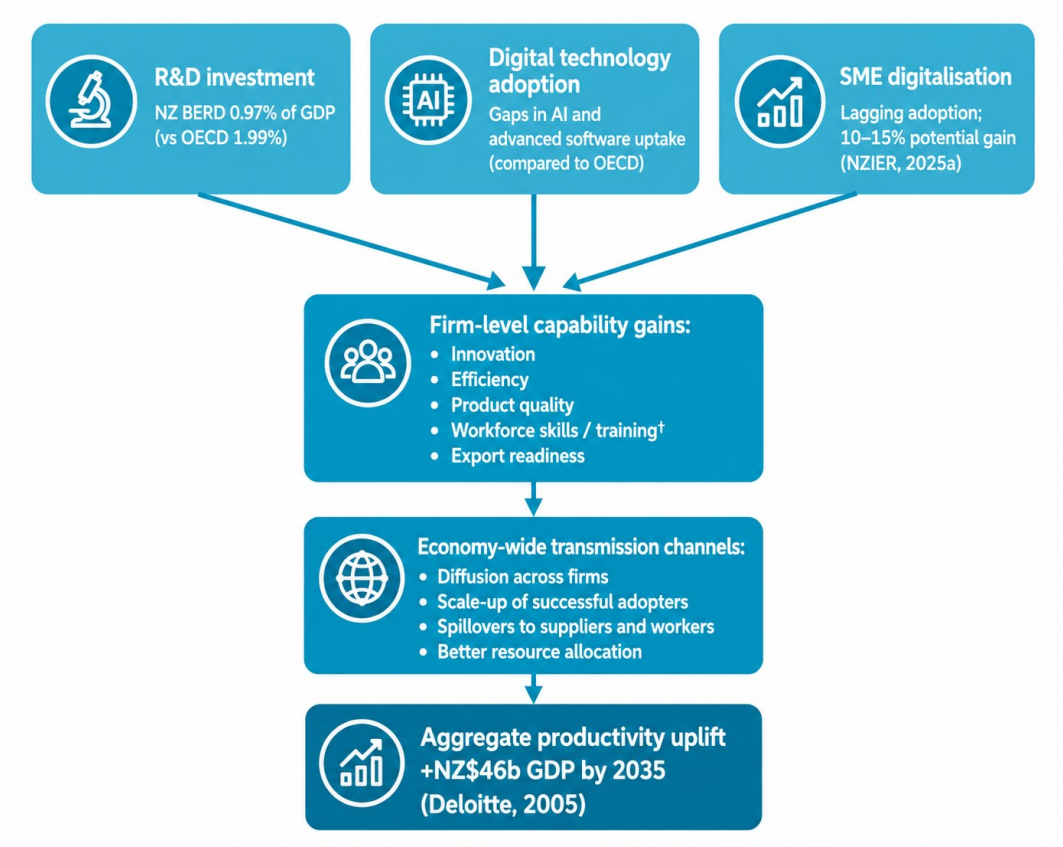
Source: OECD (2023)

Recognising these challenges, the NZ Productivity Commission (2024) stressed that stronger governance, more effective coordination of innovation policies, and the incorporation of Māori perspectives will be essential to unlock productivity benefits from innovation. For example, Deloitte (2025) estimates that lifting R&D intensity to 2.5 percent of GDP and tripling technology adoption could generate around NZ$46 billion in additional benefits by 2035.

Firm-level evidence aligns with this macro perspective. NZIER (2025a) finds that SMEs face persistent barriers to digitalisation, with cost, skills and connectivity constraints holding back productivity. Similarly, AI Forum NZ (2023) highlights the transformative potential of artificial intelligence but warns that benefits will only be realised if adoption is supported by investment in workforce skills and trust.

Figure 13 integrates all the above evidence, showing how R&D, digital technology adoption, and SME digitalisation strengthen firm capabilities, boost efficiency, and enhance export readiness, with measurable spillovers to aggregate productivity, according to Deloitte (2025).

Figure 13 Channels from innovation and digital adoption to productivity growth



Note: Technology adoption raises productivity only when it is accompanied by complementary investment in workforce skills, training and organisational capability. The diagram, therefore, shows technology as part of a broader capability-building process, not as a stand-alone productivity lever.

More about workforce skills in section 5.1.

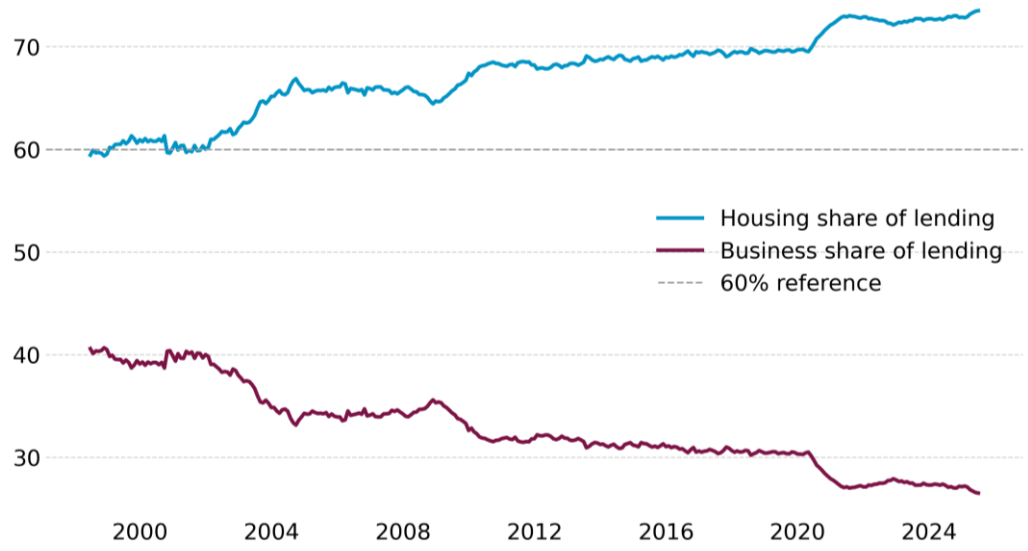
Source: NZIER

4.2 Finance and allocation: Asset-backed vs knowledge-intensive high-growth firms

A central challenge in New Zealand's productivity story is not only the low overall investment rate but also the way financial resources are allocated. A disproportionate share of capital flows into asset-backed activities such as housing and real estate, while knowledge-intensive and innovation-oriented firms struggle to access financing for intangible investment. Figure 14 illustrates this bias, showing that since the late 1990s, lending to residential property has grown to over 70 percent of total bank lending, while lending to businesses has declined to below 30 percent. This systemic skew limits the emergence of high-growth, high-productivity firms.

Figure 14 New Zealand bank lending: Housing vs business

Share of total lending (%), 2000–2024

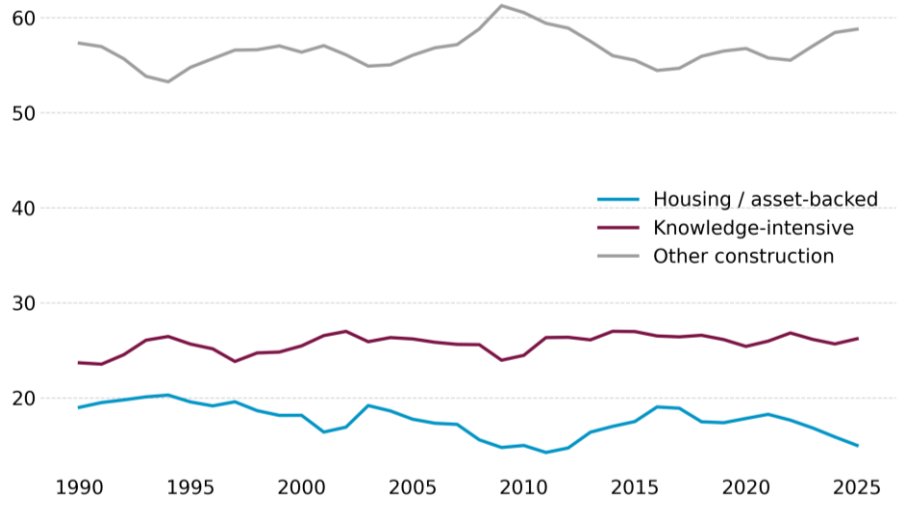


Source: RBNZ (2025a)

On the investment side, the picture is equally skewed. Figure 15 shows that most gross fixed capital formation (GFCF) flows into construction (housing and infrastructure), while knowledge-intensive assets, such as machinery, ICT and intangibles, remain stuck at about a quarter of total investment. Together, Figure 14 and Figure 15 underscore the dual nature of New Zealand's capital allocation problem: banks overwhelmingly favour housing over business lending, and national investment patterns prioritise concrete over knowledge. Compared with SAEs, where intangible and technology-driven investment play a much larger role, this dual skew is a key driver of New Zealand's weak productivity performance.

Figure 15 Shares of gross fixed capital formation by group

Percentage of total GFCF, 1990–2025



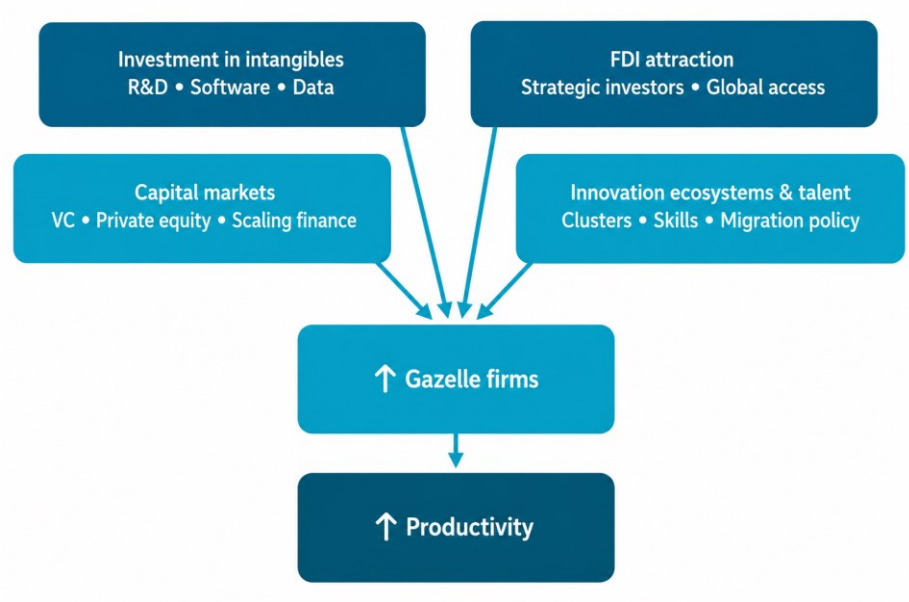
Source: Stats NZ (2025d)

International evidence reinforces this diagnosis. Petrescu (2025) highlights persistent financing constraints for innovative firms and documents New Zealand's low incidence of 'gazelles' (young, high-growth companies) relative to other OECD economies. McNaughton (2025) adds that only about 13 percent of new firms (2008–2018) achieved high-growth status, and most were concentrated in finance and real estate rather than in technology-intensive sectors.

Domestic studies link these outcomes to weak competition and structural barriers. NZIER (2024) emphasises that firms integrated into global value chains are more likely to invest in innovation, but weak domestic competition and regulatory frictions reduce these incentives. Hartwich (2025) points to cultural factors such as 'tall poppy syndrome,' while RBNZ (2025b) highlights deep-seated structural issues, including the dominance of property investment, restrictive FDI laws and shallow capital markets, that suppress knowledge-intensive growth.

Institutional responses are emerging. The establishment of Invest NZ is intended to attract foreign direct investment into knowledge-intensive sectors and to expand access to international capital for innovative firms. Yet as Figure 16 makes clear, success will depend on a broader policy mix: investment in intangibles (R&D, software, data), deeper domestic capital markets (venture capital, private equity, scaling finance) and greater international connectivity through strategic FDI. Complementary measures to strengthen innovation ecosystems and talent, via clusters, skills development (more about this in section 5.1) and migration policy are also essential. Together, these levers can create the conditions for more high-growth gazelle firms, generating spillovers in innovation, competition and exports that ultimately raise aggregate productivity.

Figure 16 Policy levers for fostering high-growth 'gazelle' firms



Source: NZIER

5 Human capital, skills and labour-market dynamics

5.1 Education quality and skill mismatch

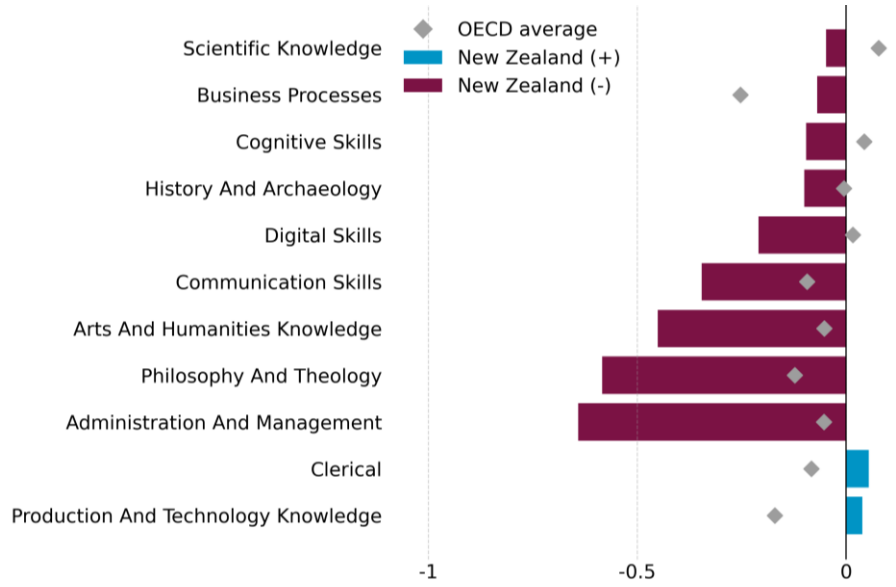
The quality of education and the alignment of skills with labour market needs are critical determinants of long-term productivity growth. Evidence suggests that New Zealand faces both declining educational outcomes and persistent skill mismatches, which together constrain firms' ability to innovate, adopt new technologies and improve efficiency.

Meehan et al. (2023) highlight the long-run consequences of declining literacy and numeracy achievement, noting that gaps in basic competencies translate into weaker earnings and reduced workforce productivity. NZQA (2024) reinforces this concern, documenting a downward trend in NCEA achievement, particularly among disadvantaged student groups. Weakening foundations in quantitative and literacy skills limits the future pipeline of talent for science, technology and knowledge-intensive sectors.

At the same time, international benchmarking indicates that New Zealand experiences a relatively high degree of skill mismatch. OECD estimates suggest that around 28 percent of workers are in jobs not well matched to their qualifications, compared with an OECD average of 25 percent. Closing this gap could lift New Zealand's productivity by about 7 percent. Figure 17 illustrates these mismatches, showing that NZ has surpluses in fields such as administration and humanities, while shortages are concentrated in technical and applied skills. Table 8 provides quantitative evidence, reinforcing the idea that correcting literacy and numeracy gaps, reducing mismatches, and addressing employer-reported shortages in digital and communication skills could yield economy-wide productivity gains of two to seven percent.

Figure 17 Skill mismatches in New Zealand vs OECD average (selected skills)

Skill need indicator, 2022



Note: The OECD Skills for Jobs indicator ranges from -1 to +1, where negative values indicate skill surplus and positive values indicate skill shortage.

Source: OECD (2024c)

Interpretation note on 'Administration And Management'

The indicators in Figure 17 measure mismatch between workers' formal qualifications and the jobs they hold, rather than managerial capability directly. They are therefore best interpreted as evidence of imperfect skill allocation in the labour market, not as a direct measure of firm-level management quality.

This distinction matters because qualification mismatch and weak managerial capability are related but not identical problems. A surplus of workers with administration or management credentials may indicate that formal qualifications are not being matched to the right roles, while firm-level capability depends more specifically on how those skills are developed, applied and complemented by experience, training and organisational practices.

Table 8 Estimated productivity gains from reducing skill mismatches

Source	Evidence base/ Method	Key findings	Estimated productivity impact
OECD (2017)	Cross-country simulations using labour force & skills data	NZ has ~28% of workers mismatched vs ~25% OECD average	Reducing skill mismatch to the OECD best-practice level (within industries) is estimated to be associated with a 7.2% increase in allocative efficiency in New Zealand.
Wen et al. (2023)	Employer–employee microdata; training and mismatch evidence	Over-skilled workers are more likely to receive training; under-skilled workers face barriers	Improved targeting of training could yield 2–3% gains in affected sectors (esp. ICT, business services).
Meehan et al. (2023)	Econometric analysis of literacy & numeracy	Weak literacy and numeracy skills are linked to worse long-term job and income outcomes	By age 25, those with stronger literacy and numeracy earn ~27% more; no direct causal productivity estimate is provided.
Hays (2025)	Employer survey (Australia & NZ)	Skills lacking: 57% technical skills, 50% problem-solving skills, 46% leadership and 41% communication	Skills shortages constrain business performance and adaptation (no quantified impact).
NZQA (2024)	Secondary school achievement in maths	Declining performance among senior secondary students risks the future skills pipeline	Long-term drag if unaddressed. No quantified %, but strong qualitative evidence of constraint.

Source: As per table

Employer surveys and firm-level data add nuance to this picture. Hays (2025) identifies shortages in technical and problem-solving skills, as well as in leadership and communication, while Wen et al. (2023) show that under-skilled workers face barriers to training and upskilling. By contrast, over-skilled workers are more likely to receive additional training, highlighting structural asymmetries in how skills gaps are addressed. These results confirm that existing training systems are not well targeted toward the most critical shortages or groups.

Synthesising the evidence paints a consistent yet complex picture: educational underperformance is eroding foundational skills, while labour-market mismatches amplify productivity constraints. Yet sources differ in emphasis. OECD indicators suggest New Zealand is oversupplying some generic or lower-level skills, whereas employer surveys emphasise shortages in applied and advanced digital capabilities. This apparent contradiction reflects differences in measurement: the OECD captures the broad alignment of qualifications with jobs, while employer surveys capture the depth, quality, and work-ready application of skills. Both perspectives point to the same conclusion: New Zealand risks locking in underperformance unless it strengthens foundational education, improves school-to-work transitions, and directs training investment toward high-demand technical and applied skills.

5.2 Well-being and productivity channels

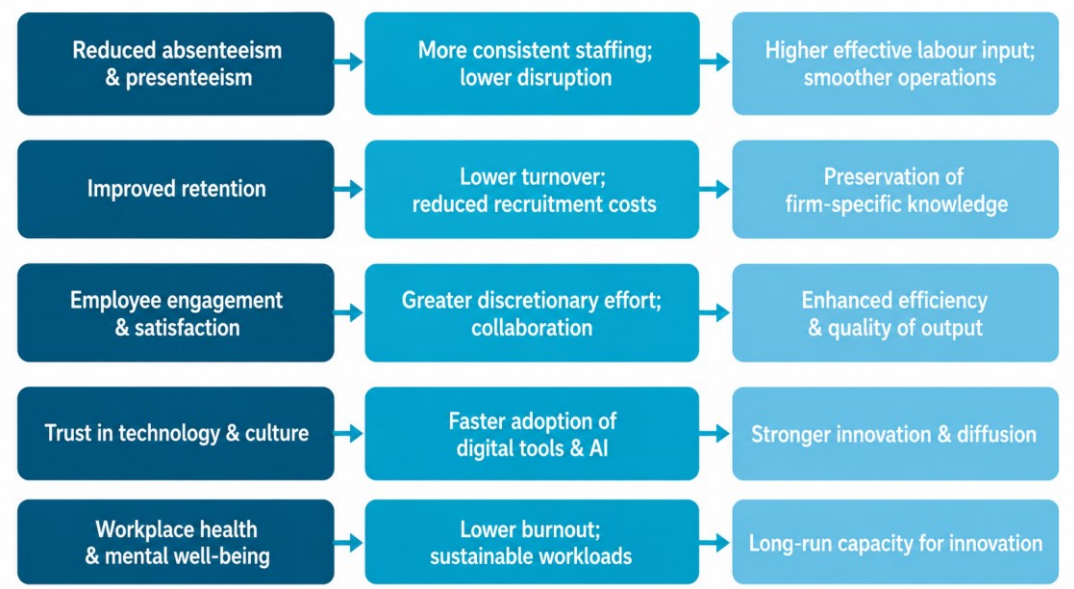
The relationship between worker well-being and productivity has become increasingly prominent in the New Zealand debate. Beyond traditional measures of hours worked and output per worker, a growing body of evidence points to the role of employee health, satisfaction and trust in shaping firm performance and long-run productivity. Well-being affects not only individual effort and absenteeism, but also creativity, innovation and the diffusion of new technologies.

Evidence shows that well-being is not simply a social goal but a productivity imperative. Thompson (2025) highlights that firms investing in well-being and engagement achieve stronger innovation outcomes, higher adaptability and improved retention of skilled workers. It argues for shifting the productivity lens from ‘time spent’ to ‘value created,’ underscoring that healthy, engaged workers are the foundation for sustained performance. Similarly, commentary on AI adoption in New Zealand stresses that worker trust and cultural acceptance are essential for new technologies to enhance, rather than hinder, productivity growth.

MBIE (2025) underscores the importance of developing talent as a foundation for lifting productivity. It highlights that raising skills, improving retention and ensuring businesses can access the people they need are central to strengthening New Zealand’s economic performance. With around 97 percent of New Zealand firms employing fewer than 20 staff, the report notes that access to skilled workers is especially critical for small businesses seeking to compete and grow.

Figure 18 illustrates the mechanisms through which well-being translates into productivity. Reduced absenteeism and turnover, improved retention, stronger discretionary effort, trust in technology adoption and reduced burnout all contribute to higher effective labour input and long-run innovation capacity. As a whole, these channels show that investments in workforce well-being generate direct, measurable productivity benefits at both the firm and the aggregate levels.

Figure 18 Well-being mechanisms that influence productivity



Source: NZIER

6 Firm-level diffusion and market structure

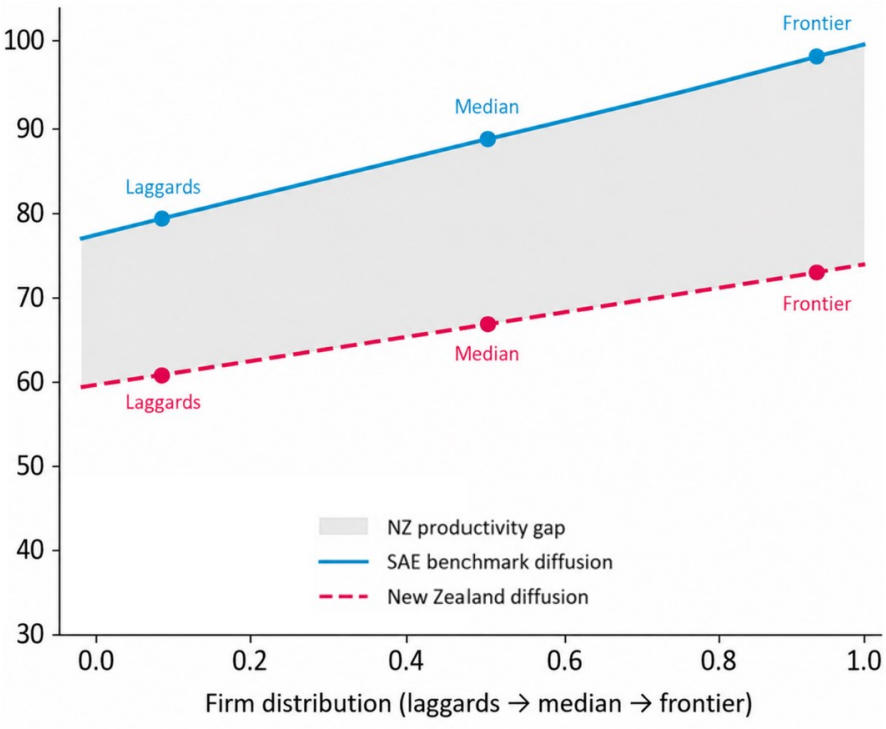
6.1 Technology/management diffusion: Laggards vs Frontier

A defining feature of New Zealand's productivity challenge is the persistent gap between its frontier firms and laggards, which reflects weaknesses in the diffusion of technology and management practices across the economy. A small group of internationally connected firms operate close to global best practice, yet most domestic firms, especially SMEs, remain well below the frontier. This dual structure constrains aggregate productivity growth and helps explain why New Zealand's national frontier itself lags behind that of SAEs, at only around 45–50 percent of the international benchmark.

Figure 19 provides a stylised illustration of the productivity gap between New Zealand firms and those in comparable SAEs. In SAEs, frontier firms operate close to the international best-practice benchmark, with smaller gaps between frontier, median and laggard firms. In New Zealand, the entire distribution sits lower, and the gap widens toward the frontier: even the most productive firms remain well below the SAE frontier, with median and laggard firms further behind. This suggests that New Zealand's challenge is not only weak catch-up among lower-performing firms, but also that the national frontier itself is not keeping pace with leading firms abroad.

Figure 19 Stylised productivity gap

New Zealand relative labour productivity (% of SAE frontier), median and laggard firms



Source: Adapted from NZ Productivity Commission (2021b, Figures 3.3 and 4.2)

Evidence from Productivity Hub (2018) and NZ Productivity Commission (2021b) reinforces these points. Diffusion channels, such as resource reallocation, international linkages and labour mobility, are not operating effectively, limiting the spread of advanced management practices, skills and know-how across firms. Geographic isolation compounds the problem, limiting spillovers and skilled labour flows, especially in smaller regions. Counterfactual simulations in NZ Productivity Commission (2021b) show that if diffusion and labour allocation worked as efficiently as in peer economies, national productivity could be more than 40 percent higher.

More recent studies highlight additional bottlenecks. NZIER (2024) points to weak cluster dynamics: unlike in many SAEs, New Zealand firms remain fragmented and disconnected from collaborative ecosystems, reducing opportunities for knowledge sharing, supply chain synergies and competitive pressure on laggards. Firm-level surveys echo these findings. McNaughton (2025) reports that nearly half of firms face internet disruptions, limiting the digital adoption essential for convergence. Similarly, NZIER (2025a) shows that SMEs lack the capital, expertise and infrastructure needed to adopt digital technologies, slowing diffusion further. Results from scenario modelling by Deloitte (2025) suggest that with stronger digital adoption and higher investment in R&D and ICT, the productivity gap could be significantly narrowed, with potential gains of NZ$46 billion by 2035.

Table 9 brings these findings together, summarising the barriers and enablers identified across recent studies. Common obstacles include structural fragmentation, connectivity gaps, weak spillovers from the global frontier and underinvestment in ICT. Yet the evidence also highlights practical levers, from fostering clusters and improving international linkages to targeted SME digital support and infrastructure upgrades, that could enable faster diffusion.

Table 9 Barriers and enablers of diffusion in New Zealand firms

Source	Identified barriers	Identified enablers
Productivity Hub (2018)	Large productivity dispersion; weak resource reallocation; geographic isolation reduces spillovers; managerial and skills gaps	International linkages; strong management practices; reallocation towards more productive firms
NZ Productivity Commission (2021b)	National frontier stuck at ~45–50% of SAE frontier; weak spillovers from global frontier; limited diffusion from frontier to laggards	Improved global connections; policies to strengthen spillover channels; sectoral clustering
NZIER (2024)	Fragmented firm base; weak cluster dynamics; low competitive pressure	Creation of innovation ecosystems and regional clusters; greater exposure to competition
McNaughton (2025)	47% of firms report frequent internet disruptions; poor connectivity hampers digital adoption	Infrastructure investment in broadband and digital services
NZIER (2025a)	SMEs face capital, expertise and infrastructure constraints; slow digital adoption drags productivity	SME-targeted digital support; advisory services; financing tools for ICT adoption
Deloitte (2025)	Baseline scenario shows sluggish adoption; structural reluctance to invest in R&D and ICT	Raising BERD to 2.5% of GDP and tripling digital adoption could yield NZ$46b gain by 2035

Source: As per table

All in all, the evidence points to weak diffusion across the wider firm population as an important productivity constraint in New Zealand. Across these studies, recurring barriers include weak spillovers, poor resource reallocation, fragmented clusters, connectivity gaps, and limited managerial and organisational capability. The policy implication is that lifting productivity will require not only innovation at the frontier, but also stronger diffusion channels so that lagging firms can adopt, adapt and scale more productive practices.

6.2 Market frictions, competition and regulation

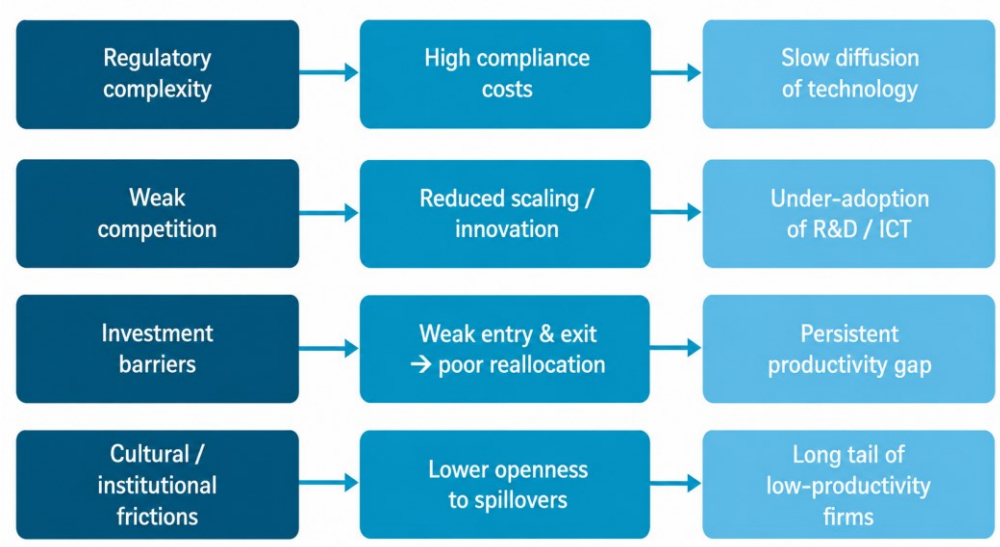
Structural frictions in regulation, competition and institutional design play a critical role in shaping New Zealand's persistent productivity gap. While innovation and technology adoption are central to productivity growth, the institutional environment determines how quickly these diffuse through the economy. Recent Treasury analysis and institutional reviews suggest that New Zealand's governance structures and regulatory settings can dampen firm dynamism and diffusion. Related commentary from the NZ Initiative and the Reserve Bank points to similar concerns around scaling, capital markets and regulatory frictions (RBNZ, 2025b; Wilkinson, 2024).

Institutional weaknesses are a core part of the challenge. Crawford & Ashby-Ryan (2024) find that New Zealand lacks the coherent governance mechanisms observed in successful SAEs such as Singapore, Ireland and the Nordics,[9] where coordinated innovation strategies, clear mandates and strong accountability have accelerated diffusion. In contrast, New Zealand's fragmented approach has led to policy follow-through failures and slower adoption. NZ Productivity Commission (2024) similarly stresses that strengthening institutions, including embedding Māori perspectives on economic development, is essential to building more inclusive and resilient productivity growth. As discussed in section 4.2, New Zealand's weak capital allocation is also reinforced by wider institutional and cultural frictions, including shallow capital markets, restrictive FDI settings, compliance burdens and barriers to firm scaling.

Figure 20 maps these frictions, showing how regulatory complexity raises compliance costs, weak competition reduces innovation incentives, and shallow capital markets limit firm entry and exit. Cultural barriers, including tall poppy dynamics (Hartwich, 2025) and fragmented governance, reinforce the long tail of low-productivity firms. Together, these channels demonstrate how structural frictions at the institutional level translate directly into weaker firm performance and a persistent productivity gap.

[9] Include Denmark, Norway, Sweden, Finland, Iceland and their territories (Greenland, Faroe Islands, and Åland Islands).

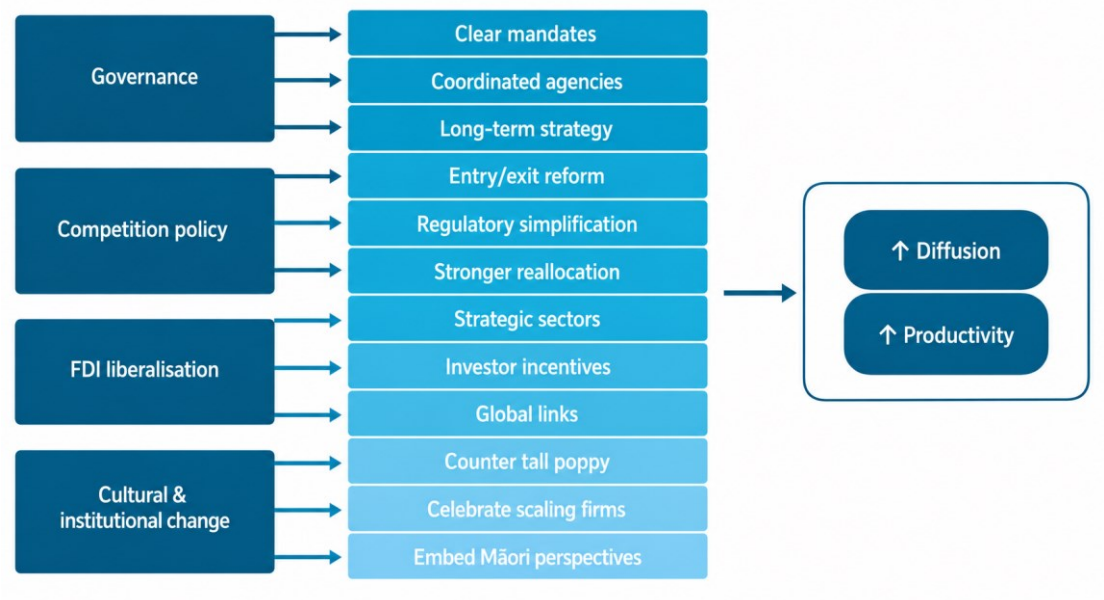
Figure 20 Channels linking frictions to New Zealand's productivity gaps



Source: NZIER

Improving New Zealand's productivity will therefore require more than firm-level innovation as it will depend on reducing these systemic frictions. Figure 21 illustrates the reform pathways available, highlighting four levers: strengthening governance, enhancing competition policy, liberalising FDI and fostering cultural and institutional change. At the firm level, such reforms would deliver clearer mandates, more effective coordination, easier entry and exit, stronger resource reallocation and greater openness to global spillovers and investment. Cultural shifts, such as countering tall poppy dynamics and embedding Māori perspectives, would reinforce an environment supportive of scaling firms. Collectively, these reforms create the conditions for faster diffusion of technology and stronger productivity performance across the economy.

Figure 21 Reform pathways to strengthen diffusion and productivity



Source: NZIER

7 Conclusions

Across the evidence reviewed, a consistent picture emerges of New Zealand's productivity challenge: It is not driven by a single weakness but by a combination of persistent and reinforcing constraints.

- First, capital shallowness and underinvestment remain central. Compared with other SAEs, New Zealand invests less in both physical infrastructure and intangible assets such as R&D, ICT and knowledge capital. Figures on bank lending and gross fixed capital formation highlight the skew of financial resources toward housing and asset-backed activities, leaving innovative firms underfunded and constraining the emergence of high-growth gazelle firms.
- Second, weak MFP growth reflects limited technological diffusion, modest innovation capacity and inefficient allocation of resources. International comparisons show that while labour productivity has improved, the gains have largely come from capital deepening rather than from efficiency, innovation, or technological progress. This underlines the importance of addressing diffusion barriers across firms and industries.
- Third, structural disadvantages linked to remoteness, scale and supply chain vulnerabilities amplify the investment problem. Distance from major markets, reliance on imported intermediates and exposure to global shipping disruptions raise costs and dampen competitiveness. These structural features interact with an industry mix that favours resource-based sectors, limiting diversification and opportunities for knowledge-intensive growth.
- Fourth, human capital constraints persist. Declining educational outcomes, skill mismatches and emigration of young, skilled workers erode New Zealand's talent base. While immigration inflows boost firm-level innovation and flexibility, persistent brain drain offsets these gains at the aggregate level. Weaknesses in foundational skills, combined with shortages in digital and applied capabilities, create bottlenecks that limit both technology adoption and productivity growth.
- Fifth, institutional, regulatory and cultural frictions further slow diffusion and firm dynamism. Fragmented governance, restrictive investment rules, shallow capital markets and tall poppy syndrome culture combine to discourage entrepreneurship and scaling. Compliance burdens and weak competition blunt incentives for innovation, reinforcing a long tail of low-productivity firms.
- Finally, well-being and workforce resilience are increasingly recognised as integral to productivity. Healthy, engaged and trusted workers drive innovation, adaptability and retention, while neglecting well-being embeds inefficiencies and resistance to technological change.

Overall, these recurring themes show that New Zealand's productivity underperformance reflects a set of mutually reinforcing weaknesses: underinvestment in innovation and intangibles, the structural constraints of distance and scale, skills and talent bottlenecks and institutional frictions that weaken diffusion. Because these barriers interact, there is no single reform that will close the gap quickly. A more realistic policy implication is that improvement will depend on sustained progress in a small number of areas where constraints are both important and tractable, particularly capital deepening in knowledge-

intensive activity, stronger skills formation and attraction and institutional settings that improve competition, investment and diffusion over time. Table 10 summarises these channels and their likely consequences.

The main lesson from Table 10 is that not all constraints are equally policy-relevant. While remoteness and scale remain important, they are largely structural. The more actionable barriers are domestic: weak allocation of capital toward knowledge-intensive activity, patchy digital and innovation investment, persistent skill gaps and institutional settings that dampen competition and firm dynamism. These are the areas where incremental reform is most likely to improve productivity. The table therefore points less to a need for broad policy activism than to a smaller number of practical priorities: improve growth finance for intangible and tradable firms, lift technology adoption capability and remove avoidable barriers to entry, scaling and diffusion. After all this, what policymakers can focus on are the three following priorities:

- New Zealand needs better allocation of capital toward knowledge-intensive and tradable activity.
- Firms need stronger capability to adopt and diffuse technology, not just access to it.
- Institutional settings need to do more to support entry, scaling and reallocation.

These areas are more tractable than deeper structural disadvantages such as distance and are therefore the most credible starting points for policy.

Table 10 Matrix: Contribution factors (columns) × Effects on productivity (rows)

Contributing factors / Effects on productivity	Capital allocation bias (Housing ≫ Knowledge)	R&D/ICT under-investment & SME digital lag	Institutional/ regulatory/cultural frictions	Education quality & skill mismatch	Migration flows (immigration gains vs brain drain)	Workforce well-being & trust	Remoteness & supply chain exposure
Investment level & composition	Funds crowd into property; capex squeezed; shallow capital stock	Thin pipeline of innovation projects; low intangible share; slow tech capex	Compliance/FDI barriers deter capex; shallow capital markets	Firms delay tech investment w/o skills; higher training costs	Immigration can ↑ capability; emigration drains managerial/ technical capital	High turnover ↓ appetite for complementary investment	Higher hurdle rates due to distance/volatility; 'just-in-case' inventories displace growth capex
Technology diffusion & adoption	Knowledge firms under-financed → slower diffusion	Patchy ICT uptake, esp. SMEs; slow AI adoption	Weak competition & regulatory complexity slow adoption	Skills gaps limit take-up & effective use	Migrants speed diffusion; outflows weaken networks	Low trust = resistance to new tech; good well-being = faster uptake	Fewer spillovers/clusters; hardware delays; logistics bottlenecks
Firm dynamism (entry/exit, scaling)	Scarce growth finance; fewer 'gazelles'	Digital-native firms scale slowly	Barriers to entry/exit; poor reallocation	Pipeline shortages constrain expansion	Immigrants can fill leadership gaps; brain drain removes them	Burnout/attrition stall scaling	Small market & freight frictions cap scale
International competitiveness & tradables share	Bias to non-tradables; weak export capacity	Weak product/ process innovation; limited upgrading	Policy frictions ↑ costs; limit openness/FDI	Lower technical capability ↓ export readiness	Inflows add global links; outflows ↓ exporter depth	Engagement ↑ quality/service; disengagement ↓ reliability	High trade costs & delays; fragile access to GVCs
Cost structure & inflation pass-through	High housing costs ↑ wage pressures	Legacy systems ↑ operating costs.	Compliance costs embedded in margins.	Training/ inefficiency costs embedded in production	Recruitment/ relocation costs from churn	Absenteeism/ presenteeism lift unit costs	Freight/shipping spikes pass through to prices
Talent availability & capability	Less investment in training for knowledge assets	Demand for digital skills outstrips supply	Visa/FDI settings & 'tall poppy' norms affect attraction/ retention	Literacy/numeracy gaps; mismatch by occupation	Net outflows ↓ skill base; inflows can offset if well matched	Wellbeing supports retention & capability; poor wellbeing erodes both	Harder to attract/retain talent to remote hub; crisis disruptions
Aggregate productivity (LP/MFP) & convergence	Capital shallowness drags LP; weak MFP from misallocation	Slower innovation → weak MFP; limited spillovers	Diffusion slows; long tail persists; subdued convergence	Skill gaps cap MFP & LP improvements	Net effect depends on inflow vs outflow; brain drain = ↓ MFP/LP	Healthy, trusted workplaces raise effective labour input & innovation capacity	Distance/shocks ↓ MFP via costs/uncertainty
Priority	High priority (actionable, binding constraints)			Medium priority (important but slower-moving / complementary)			Lower priority (structural/ hard to change directly)

Source: NZIER

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