



The economic benefits of Taxi

NZIER report to Taxi Limited

February 2024

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NZIER was established in 1958.

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Key points

About Taxi

- Taxi is an innovation in business financing that creates a new source of capital at lower costs than bank lending, using the provisional tax framework.
- Small and medium-sized businesses (SMEs) constantly battle with cash flow constraints.
- SMEs, on average, experience negative cash flow for four months of the year.
- Cash flow constraints and barriers to capital for investment stymie growth potential and entrepreneurialism.
- By utilising provisional tax payments, Taxi will provide greater access to working capital for business investment, improving productivity, lowering production costs, supporting increased innovation and product development, and expanding productive capacity.
- Business in New Zealand has typically favoured investment in labour rather than capital, which has resulted in lower productivity in other countries that use more capital.
- By providing better access to capital for business investment, Taxi presents an opportunity for diversification and improvement in investment quality.

The capital per worker in New Zealand is about half the level in other OECD economies we like to compare to

- Workers in New Zealand tend to work longer than the OECD and produce less per hour worked.
- Greater access to business investment funding via Taxi presents an opportunity for capital investment that could contribute to closing the output and productivity gaps while reducing the pressure for longer workdays.

GDP could increase by between \$800 million and \$900 million per year under the conservative scenario, but long-run widespread use of Taxi could drive increases of between \$9.4 billion and \$10.8 billion

There are a range of scenarios reflecting different business uptake.

- If 10,000 businesses access \$50,000 each via Taxi and invest it in physical capital, then the estimated increase in GDP is from \$812 million to \$928 million.
- If 60,000 businesses access \$50,000 each via Taxi and invest it in physical capital, then the estimated increase in GDP is from \$4.9 billion to \$5.6 billion.
- If 290,000 businesses access \$20,000 each via Taxi and invest it in physical capital, then the estimated increase in GDP is from \$9 billion to \$10.8 billion.



Savings on financing costs would be between \$50 million and \$580 million per year

- The benefits of accessing these investment funds through Taxi are not costless.
- However, the financial costs of capital of accessing funds through Taxi is half the cost of accessing funds using a bank overdraft. In addition, because Taxi is a New Zealand company, economic value is retained in New Zealand in a way that doesn't happen with the major trading banks.

Cash flow issues are a leading cause of stress, anxiety and social impacts for SMEs

- If 290,000 small business owners could avoid losing one day of lost productivity each month, then the productivity benefits are estimated to be worth \$1.2 billion annually.



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1 About this report

Taxi commissioned NZIER to assess the economic benefits of using Taxi among small and medium-sized enterprises (SMEs).

Research objectives

The objective of the research is to estimate the benefits of Taxi among businesses in the New Zealand economy.

Research scope

The scope of the research includes the following:

- Reviewing the literature on firm performance and the importance of access to capital to fund operations and support expansion and growth.
- Modelling the benefits of using Taxi to access capital and operational cash flow.

The scope of the research excludes the following:

- Primary information gathering, such as surveys.
- Stakeholder engagement and consultation.

Funding statement

The research was funded by Taxi. The research was completed independently by NZIER.

Our approach

The research methodology applies an identify, quantify and monetise approach. This approach focused on:

- **Identifying** the sources of benefits at the firm level and how those benefits flow into the macroeconomy.
- **Quantifying** the characteristics and magnitude of the benefits.
- **Monetising** the benefits in terms of the market value of the economic effects at the micro and macroeconomic level and the non-market value of societal effects, such as improved mental wellbeing due to lower stress and anxiety levels for business owners and operators.



2 What is Taxi?

Taxi uses New Zealand's provisional tax framework to allow businesses to use their provisional tax payments as a source of capital to meet investment and short-term cash flow constraints. In doing this, Taxi creates a new source of capital at lower costs than bank lending.

A small number of large businesses have been accessing capital using the provisional tax framework in this way for many years. Due to the complex nature of the legal framework, this benefit has been unavailable to most New Zealand businesses. Taxi is an innovation that uses technology to democratise access to capital for business growth and make this benefit of the tax system available to all New Zealand businesses that pay provisional tax.

2.1 What is the legal framework for Taxi?

Taxi is underpinned by the provisional tax framework in New Zealand as set out in sections RP17–RP 21 of the Income Tax Act and sections 124S–124X of the Tax Administration Act 1994, which is facilitated by Inland Revenue. The framework was established by Inland Revenue in 2003 to help taxpayers meet their provisional tax obligations.

Although the legal framework underpinning Taxi was introduced in New Zealand by Inland Revenue in 2003, to date, large businesses tend to be the only users of the Taxi method of accessing capital in New Zealand.

Services such as those offered by Taxi must be provided and managed by Inland Revenue-approved intermediaries. Taxi is facilitated by Tax Traders Limited, who hold the tax pooling account under the 1994 legislation, has been approved by Inland Revenue and have been operating in New Zealand under the Income Tax Act since 2012.

2.2 What are the benefits of Taxi?

Taxi is an innovation that will help to democratise access to capital for business growth. The benefits include the following:

- Taxi adds to the benefits of the provisional tax framework by allowing provisional tax paid to enable access to funds for business investment.
- The cost of accessing capital for business investment with Taxi is currently half the cost charged on business overdrafts.
- Taxi can also be used to alleviate short-term cash flow constraints.
- In alleviating these cash flow constraints, Taxi has the potential to further reduce stress and anxiety for SME owners and operators.

Lower fees than other sources of financing

Business loans and overdrafts come with interest premiums and margins attached to them, increasing the cost of financing cash flows and working capital shortages. Access to funding supported by provisional tax payments via Taxi should be considered a viable alternative to bank lending.

Cash flow is the amount of money flowing through the accounts. Working capital is the difference between the current assets (accounts receivable and short-term investments)



and current liabilities (accounts payable, tax liabilities and short-term debt). Working capital is a measure of funds available if liquid assets are used for business costs after current liabilities are covered.

Taxi can function as a form of short-term savings that could be accessed to fund immediate cash flow needs and then repaid at a much lower cost and more flexibly than business lending. At the time of this report, business overdrafts can have interest rates and fees equivalent to 20 percent per annum.

Ease of doing business

There are some requirements for setting up with Taxi and paying provisional tax via Taxi. However, once the setup is completed, access to funds is easier for organising short-term financing, and the funds from Taxi can be available in a few business days.

Cash flow benefits

SMEs constantly battle with cash flow constraints. Such constraints limit the realisation of the full potential of business entrepreneurialism due to the insufficient capital for investment in:

- Scaling up and expansion into export markets.
- Business investments and timing of investments (Schaller 1993).
- Business performance (Afrifa and Tingbani 2018).
- Diversification of the product or service offering (Shaver 2011).
- Opportunities for research and development or innovation (Brown, Martinsson, and Petersen 2012; Brown, Fazzari, and Petersen 2009; Hall and Lerner 2010).

The combination of the negative economic effects of cash flow constraints holds back economic growth and development at a regional and national level. Limiting innovation and economic performance at the microeconomic level contributes to underperformance at the macroeconomic level compared to its potential.

In New Zealand, surveys of SMEs indicate that, on average, typical businesses experience negative cash flow for four months of the year (Xero 2022). This frequency of negative cash flow during the COVID-19 global pandemic is comparable to that experienced by SMEs in Australia and the United Kingdom.

Illiquidity is a key factor in why businesses fail, and failure has cascading economic and social impacts. For example, in the construction industry, cash flow constraints can lead to the following negative business outcomes or behaviours:

- Inability to pay employees and subcontractors.
- Impediments to carrying out key construction activities related to project progress, milestones, performance, profitability and contractual obligations.
- The risk of business failure if cash flow challenges are unresolved and reach a critical level (Ismail 2014).

The collapse of one enterprise due to illiquidity leads to cash flow pressures on related entities and creditors in a way that can lead to spillover ripple effects in a local business ecosystem.

Cash flow issues are a leading cause of stress, anxiety and social impacts for SMEs

Owning and operating a business can be stressful. For small business owners and sole traders, all the responsibilities of business management and strategic performance fall on the shoulders of a few people. There are few people within the business to share the load with, whether that sharing be practical, such as through task sharing or delegation, or psychological, through brainstorming ideas and discussing options to resolve issues.

Cash flow issues are a primary source of stress and anxiety for businesses in New Zealand as it is in other countries. Cash flow challenges can impede productivity by diverting time, effort and energy from productive activities. It can also stimulate creativity and innovation, which is critical for business performance and growth in a competitive environment.

International evidence shows that impaired mental wellbeing can materially impact the performance and productivity of employees. For example, Hargrave et al. (2008) found that the average loss in productivity due to mental wellbeing challenges was 9.22 hours per week – more than a day's work. Impaired mental wellbeing can have an enduring impact. Previous research by NZIER (2021) found that in the context of work, poor wellbeing negatively affects a person's decision-making and productivity for an average of 13 weeks a year. That's three months of the year when that person's ability to do the job is impacted.

Research on the prominence and impact of cash flow issues as key drivers of stress for small business operators in Australia confirms that the effects influence business performance and flow-on to affect health, sleep quality and personal relationships (American Express 2022). The main findings were:

- 49 percent of small business owners said managing cash flow is the **most stressful** part of running their business.
- 31 percent reported losing sleep over cash flow issues.
- 21 percent said their physical wellbeing had been affected by cash flow challenges.
- 22 percent experience strain on or weakened personal relationships due to cash flow related impacts.
- 17 percent of owners have considered shutting down their business due to cash flow challenges impacting their wellbeing.

Australian small business owners also report a range of ways they covered their cash flow gaps, including:

- Short term loans.
- Pumping personal savings into the business.
- Use funds that they normally would pay themselves with.

Taxi can contribute to meeting the economic and social costs of the short-term cash flow crisis. The funds set aside for provisional tax support access to funding that can be drawn down to cover short-term needs and paid back before deadlines. In effect, provisional tax funds enable a form of savings or working capital that could be utilised to support and propel business performance and wellbeing.

In the next section of the report, we will discuss the benefits for business and business owners and explore how that compares to macroeconomic performance in an economy where 72 percent of businesses are micro sole trader enterprises.



3 Assessing the potential economic and social benefits

Our interest is the economic and social benefits that could be realised by using Taxi. The economic benefits include lower business financing costs, greater access to capital and the benefits of releasing cash flow constraints. The social benefits include improvements in mental well-being, sleep quality, health outcomes and personal relationships for small and medium-sized business owners.

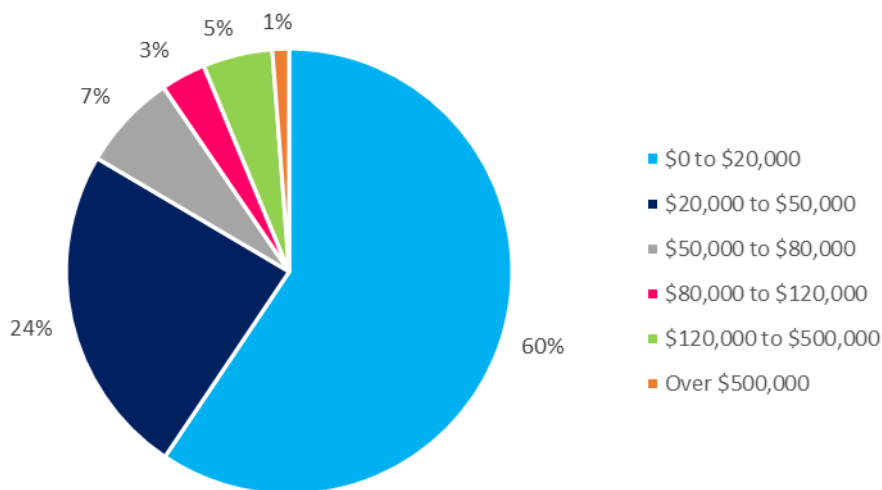
3.1 What proportion of businesses pay provisional tax?

The Taxi framework only applies to profitable businesses that pay provisional tax. Data from Inland Revenue shows that in the 2022–23 tax year, 400,177 businesses allocated funds to provisional tax. This was around two-thirds of businesses in New Zealand in 2022.

3.2 How much tax do they pay?

Figure 1 shows the distribution of provisional tax intentions in 2022–23 by the amount of the provision. It reveals that the largest proportion of businesses pay \$20,000 or less and around a quarter of businesses that pay provisional tax pay between \$20,000 and \$50,000. In contrast, 6 percent of businesses pay \$120,000 or much more.

Figure 1 The distribution of provisional tax intentions in 2022–23



Source: IR (2023) OIA response from IRD

3.3 Economic benefits from increased investment

There is a well-established body of literature on the economic benefits of capital investment. In short, the literature concludes that increased capital investment is a source of economic growth (Solow 1956; Mankiw, Romer, and Weil 1992), and investment is also a potential source of productivity improvements. There is also evidence of a bi-directional relationship between growth and investment. Economic growth encourages investment



due to stimulatory factors such as increased consumer demand and buoyed business confidence.

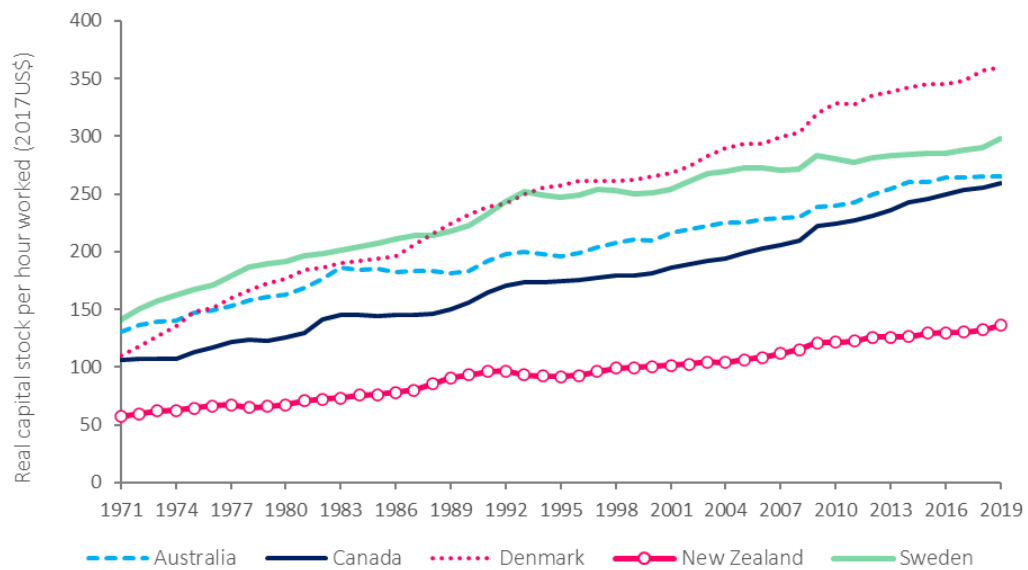
New Zealand's low productivity and low capital intensity

Capital intensity measures the relative amount of equipment or machinery used in production compared to the combination of capital and labour. Low capital intensity means fewer tools or machines compared to the average balance between capital and labour. New Zealand's economy's capital intensity is low compared to other OECD members. Low capital intensity can slow growth and productivity per worker. The Productivity Commission (2023) noted the following:

- In New Zealand, the average employee is supported by less capital than in most OECD economies.
- Our capital stock per hour worked has remained at around half that of countries like Canada, Australia, Sweden and Denmark.

Figure 2 compares real capital stock per hour worked from 1971 to 2019 between New Zealand and Canada, Australia, Sweden and Denmark.¹ The gap between New Zealand and the comparators appears to be persistent, growing in the case of Denmark. This shows the investment in capital in New Zealand has been below the countries we aspire to compare ourselves to for more than half a century.

Figure 2 Real capital stock per hour worked from 1971 to 2019



Source: Productivity Commission (2023)

In this case, increasing economic output to catch up with the other OECD countries would increase labour productivity to close the gap. The Productivity Commission's (2023) comparison of output per hour worked and average hours worked per worker between New Zealand and the OECD average in 2019 showed that workers in New Zealand:

¹ Real capital includes: residential buildings, other structures, information technology, communication technology, other machinery, transport equipment, software, other intellectual property products and cultivated assets (such as livestock for breeding and vineyards).

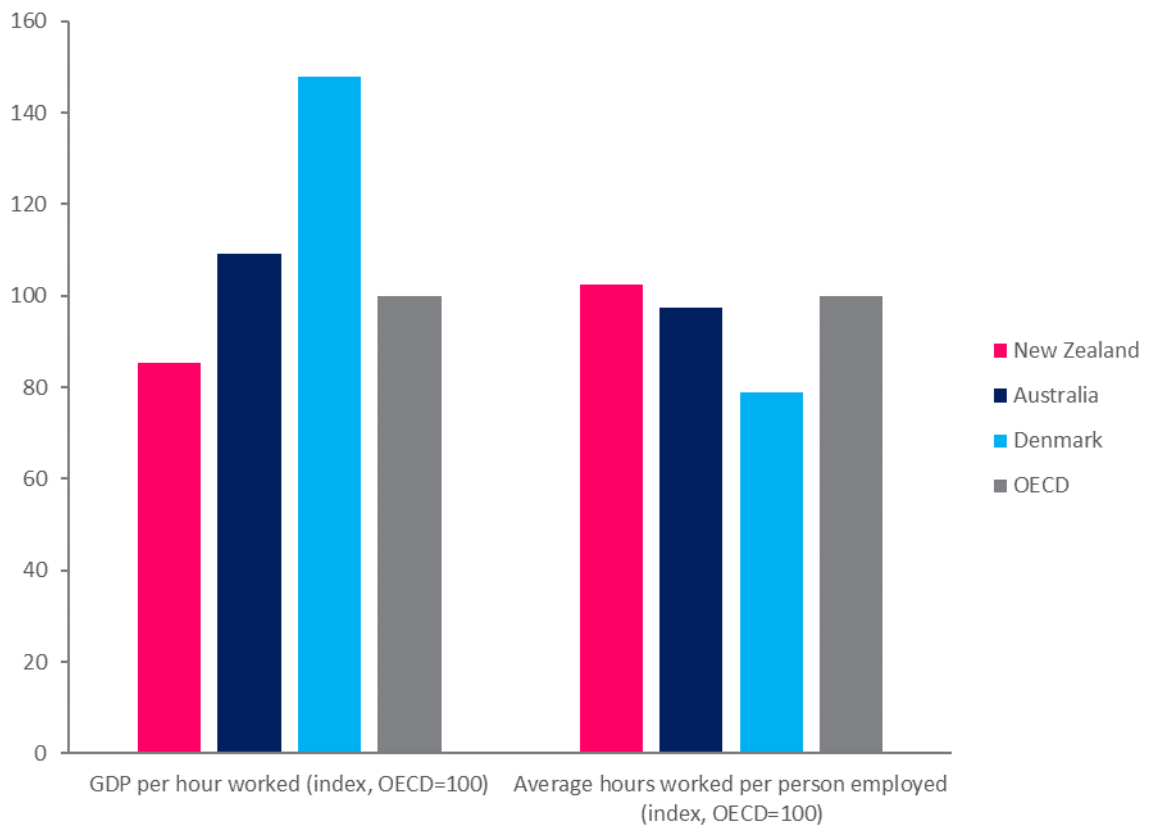
- Worked 2.5 percent longer than the OECD average, which is equivalent to working an extra 52 hours per year².
- Produced 15 percent less GDP per hour worked than the OECD average.

However, comparing Denmark and Australia illustrates New Zealand's underperformance even more starkly. The Productivity Commission's analysis of hours worked and output, shown in Figure 3, indicates that in 2019:

- In Australia and Denmark, average hours worked were 3 percent and 22 percent less than the OECD average, respectively.
- Australia and Denmark produce 9 percent and 48 percent more than GDP per hour worked, respectively.

Figure 3 Comparison of hours worked and output

Indexed based on the OECD average being 100 in 2019



Source: Productivity Commission (2023)

So, what is the relationship between the potential release of capital investment and the possible effect on New Zealand's macroeconomic performance? The application of a proven framework is helpful to understand how this question might be explored. Fortunately, economists have been considering the framework for many decades.

² Based on a 40 hour work week.

The Solow Growth Model

The Solow Growth Model is a famous macroeconomic model of economic growth drivers, and one of those drivers is investment in capital (Solow 1956; 1957; 1962). In the Solow Growth Model, total economic output is the combination of capital, labour and technology. Thus, a change in economic output is the result of some combination of changes in capital, labour, and technology (or total factor productivity).

$$\frac{\Delta Y}{Y} = \alpha \frac{\Delta K}{K} + (1 - \alpha) \frac{\Delta L}{L} + \frac{\Delta A}{A}$$

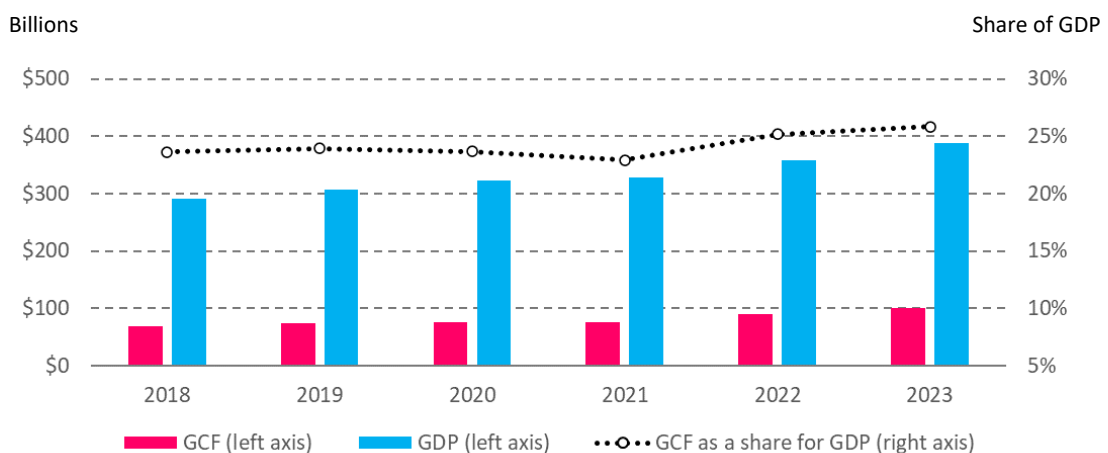
Change in economic output
Change in capital
Change in labour
Change in technology

Estimating the effect investment released through Taxi could have on the economy

A more in-depth understanding of the nature of capital means the Solow Growth Model is helpful, but the link between capital investment and economic outcomes is more nuanced. We need to conceptualise the role that Taxi's services can play and the economic benefits in a traceable way to investigate the relationship between investment in real physical capital and growth.

In the System of National Accounts, the annual flow of investment in physical capital is measured and reported as Gross Capital Formation (GCF). GCF is a component of GDP. For the year ending March 2023, GCF was estimated to be \$100 billion. Figure 4 shows GDP, GCF and GCF as a percentage of GDP from 2018 to 2023. In 2023, the GCF was 26 percent of GDP. This provides a measure for the annual investment in real physical capital in the New Zealand economy which is the type of capital businesses are likely to invest in if funds are more accessible through Taxi.

Figure 4 Gross Capital Formation and GDP



Source: Stats NZ (2023c)



Modelling the release of investment constraints

Thin financial markets have been identified as an unfavourable condition for business investment in New Zealand (Ministry of Business, Innovation and Employment 2020; NZIER 2023; Productivity Commission 2023). The financial innovation represented by Taxi could contribute to deepening financial markets and releasing investment constraints.

Table 1 shows three investment scenarios that were used to estimate the effects the investment release through Taxi could have on the economy. These scenarios intentionally ranged from conservative to optimistic. The conservative scenario is intended to reflect early growth and adoption rates. The optimistic scenarios reflect the potential size of the prize for the economy if there was widespread use of Taxi as a source of capital for investment.

Table 1 Investment scenarios

Description	Investment value (millions per annum)	Equivalent Increase in GFC in 2023
10,000 businesses accessing \$50,000	\$500	0.5%
60,000 businesses accessing \$50,000	\$3,000	3.0%
290,000 provisional tax-paying businesses accessing \$20,000	\$5,800	5.8%

Source: NZIER

Savings on financing costs would be between \$50 million and \$580 million per year

The benefits of accessing these investment funds are not costless. However, the financial costs of capital of accessing this level of funding through Taxi is half the cost of accessing funds by using a bank overdraft. The annual interest rate of a business overdraft was around 20 percent per annum at the time of the assessment. Table 2 shows the financial cost savings per annum based on an interest rate of 10 percent per annum rather than 20 percent per annum. The potential cost savings are large and represent a shift away from financing through lenders owned offshore.

Table 2 Financing cost savings

Description	Investment value (millions per annum)	Financing cost saving (millions per annum)
10,000 businesses accessing \$50,000	\$500	\$50
60,000 businesses accessing \$50,000	\$3,000	\$300
290,000 provisional tax-paying businesses accessing \$20,000	\$5,800	\$580

Source: NZIER



GDP could increase by between \$800 million and \$900 per year under the conservative scenario

Business investment in physical capital will contribute to expanding the economy's production capability and capacity while supporting workers to produce more from each hour they work. A 1 percent increase in GCF has been estimated to increase GDP by 0.42 percent to 0.48 percent in advanced economies (Akpolat 2014). Table 3 shows the effects of a potential increase in business investment on GDP based on 2023 data.

There are a range of scenarios reflecting different business uptake rates:

- If 10,000 businesses access \$50,000 each via Taxi and invest it in physical capital, then the estimated increase in GDP is from \$812 million to \$928 million.
- If 60,000 businesses access \$50,000 each via Taxi and invest it in physical capital, then the estimated increase in GDP is from \$4.9 billion to \$5.6 billion.
- If 290,000 businesses access \$20,000 each via Taxi and invest it in physical capital, then the estimated increase in GDP is from \$9 billion to \$10.8 billion.

Table 3 Effect of investment on GDP

Description	Lower estimated GDP growth (millions per annum)	Upper estimated GDP growth (millions per annum)
10,000 businesses accessing \$50,000	\$812	\$928
60,000 businesses accessing \$50,000	\$4,874	\$5,571
290,000 provisional tax-paying businesses accessing \$20,000	\$9,423	\$10,770

Source: NZIER

These estimates make several necessary assumptions to make the modelling tractable:

- The investment effect is linear and not subject to diminishing returns to scale. This assumption seems reasonable on the basis the increase in annual gross capital formation is at most 5.8 percent. If the investment shock was 10 percent per annum, there might be more reason to consider diminishing returns to scale.
- Results from other advanced economies are applicable to New Zealand.
- The investment is all additional new investment in the economy, not a redistribution of current investment behaviour.

3.4 The economic and social benefits of improving the mental wellbeing of business owners

The economic costs of impaired mental wellbeing due to cash flow issues are based on a conservative estimate of the opportunity of lost productivity that could be avoided through access to cash flow solutions.

As discussed, around half of small business owners in Australia say that cash flow is a leading source of stress that affects their performance, health and personal relationships. In general, stress-induced mental wellbeing effects have been shown to be equivalent to



losing about one day per week. So if, for example, business owners in New Zealand are losing one day per month to cash flow stress, among other sources of stress, then a conservative estimate of the economic opportunity cost is \$4,128 per year per person.

The benefits of avoiding mental distress from the cash flow benefits of using Taxi are estimated based on the three adoption scenarios applied earlier in the report. If 290,000 small business owners could avoid losing one day of lost productivity each month, then the productivity benefits are estimated to be worth \$1.2 billion annually (see Table 4).

Table 4 The benefits of improved mental health due to avoided cash flow stress

Small business owners	Improved mental wellbeing (millions per annum)
10,000	\$41
60,000	\$248
290,000	\$1,197

Source: NZIER

4 Some case study scenarios

Some case studies have been developed to show the benefits of Taxi to businesses of different sizes and in various industries.

4.1 Electrician

Jamie is an electrician and now operates a successful business with a growing team of electricians and technicians.

Jamie’s firm won a contract to work on a new hotel, but completing it requires two new commercial vans and more equipment that together cost \$96,000. The contract will be profitable and a positive step change for Jamie’s business. However, Jamie does not have \$96,000 available in his accounts and does not want to go through the long and difficult process of applying for an extension on his business overdraft.

Jamie’s business has recently paid \$141,000 in provisional tax. Before Taxi, these funds would have been paid directly to Inland Revenue and would not have been available for Jamie to utilise. However, because Jamie has paid his provisional tax via Taxi, he now has the option to access up to \$126,900 as working capital to purchase the required vans and equipment needed to accept the new contract.

Jamie will pay 9.90 percent, which is almost half what the business would pay if they could access these funds from a major bank. Importantly, this option might simply not be available from a major bank, and the Taxi facility provides the ability to continue to grow his business, as well as providing immediate peace of mind.



4.2 Hospitality

Sharon runs a successful bakery in a popular tourist location. She earns revenue of \$210,000 per annum. In December, before their peak trading time and after significant investment into their fitout, Sharon's dough prover cabinet blows up. This will cost approximately \$14,000 to replace, and without this, Sharon will not be able to produce any baked goods to sell. Sharon has a business overdraft that she could use to replace the dough prover, but this will cost 19 percent per annum, adding a total of \$2,660 to the replacement cost.

Sharon has also recently paid her August provisional tax payment of \$19,600 via Taxi. Sharon now can access up to \$17,640 as working capital to cover the cost of the new dough prover and continue to trade profitably. Sharon will pay only 9.90 percent, almost half what she would pay if they could access these funds from a major bank.

4.3 Construction

Alex operates the typical construction business in New Zealand. Alex owns the business and employs three others. Alex's construction business earned \$600,000 last year and will pay \$176,400 in provisional tax per annum this year.

In the construction industry, only 59 percent of clients pay on time, leaving suppliers to find ways to cope with big cash flow challenges. And 12 percent of construction businesses juggle the finances to make things work, and 15 percent use expensive overdraft facilities.

Alex is waiting for the sale of a property to go through, but it has been delayed due to a hold-up with the final inspection. Alex now faces a cash flow challenge and does not have the cash flow to meet usual business demands. Alex might have the option of using a business overdraft, but this could be subject to 19 percent interest per annum.

However, Alex has paid the latest provisional tax payment of \$58,800 via Taxi, meaning Alex can now access up to \$52,920 for short-term funding, trade through the cash flow bump, receive the proceeds for the sale of the property and then repay the Taxi funds in a way that suits the business, within a nine-month period.

4.4 Scaffolding

Jeff owns and operates a successful scaffolding business. The demand for scaffolding is high, and customers frequently underestimate how long they will need to hire it from Jeff. As a result of growth and constant demand, Jeff needs to purchase additional scaffolding from a manufacturer at short notice. This puts a lot of pressure on cash flow and existing bank facilities.

At the same time, the business is profitable, and Jeff paid \$189,000 in provisional tax last year. Because he made these payments through Taxi, Jeff has access to more than \$170,000 in additional short-term funding to purchase the scaffolding. Jeff doesn't have an overdraft or any other access to funding. Instead of needing to go to his bank manager and make a lengthy application, using valuable business time, Jeff can access funds in Taxi quickly and easily, giving him peace of mind and the ability to grow his business.



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