



SIZE MATTERS: WHY CONSTRUCTION PRODUCTIVITY IS SO WEAK

2025

Size matters: Why construction productivity is so weak (2025)
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ABOUT THIS PUBLICATION

Size matters: Why construction productivity is so weak explores the factors driving the three-decade long decline in the productivity of Australia's construction sector and focuses on the lack of scale in construction as a key barrier to this multifaceted problem. By proposing measures to lift stagnant national productivity growth – in particular in construction – and address Australia's housing crisis, this report contributes to two focus areas of CEDA's Progress 2050 vision for a better future for the next generation of Australians: productivity, investment & innovation and wellbeing, security & participation.



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Size matters:

WHY CONSTRUCTION
PRODUCTIVITY IS SO WEAK



DWELLINGS BUILT PER
CONSTRUCTION WORKER

**DECLINED BY
ROUGHLY 50%**

SINCE THE 1970s

IN SYDNEY, APPLICATIONS TO BUILD AN
APARTMENT BLOCK HAVE BALLOONED IN SIZE



THEY NOW REQUIRE STRUCTURAL, ENVIRONMENTAL,
TRAFFIC AND OFTEN HERITAGE ASSESSMENT,
MAKING THEM HUNDREDS OF PAGES LONG

CONSTRUCTION FIRMS
WITH 200+ EMPLOYEES

**GENERATE 85%
MORE REVENUE
PER EMPLOYEE**

THAN CONSTRUCTION FIRMS
WITH 5-19 EMPLOYEES



If construction firms matched
the size distribution of
manufacturing firms



the construction
industry would
produce



12 per cent or
\$54 billion
more revenue

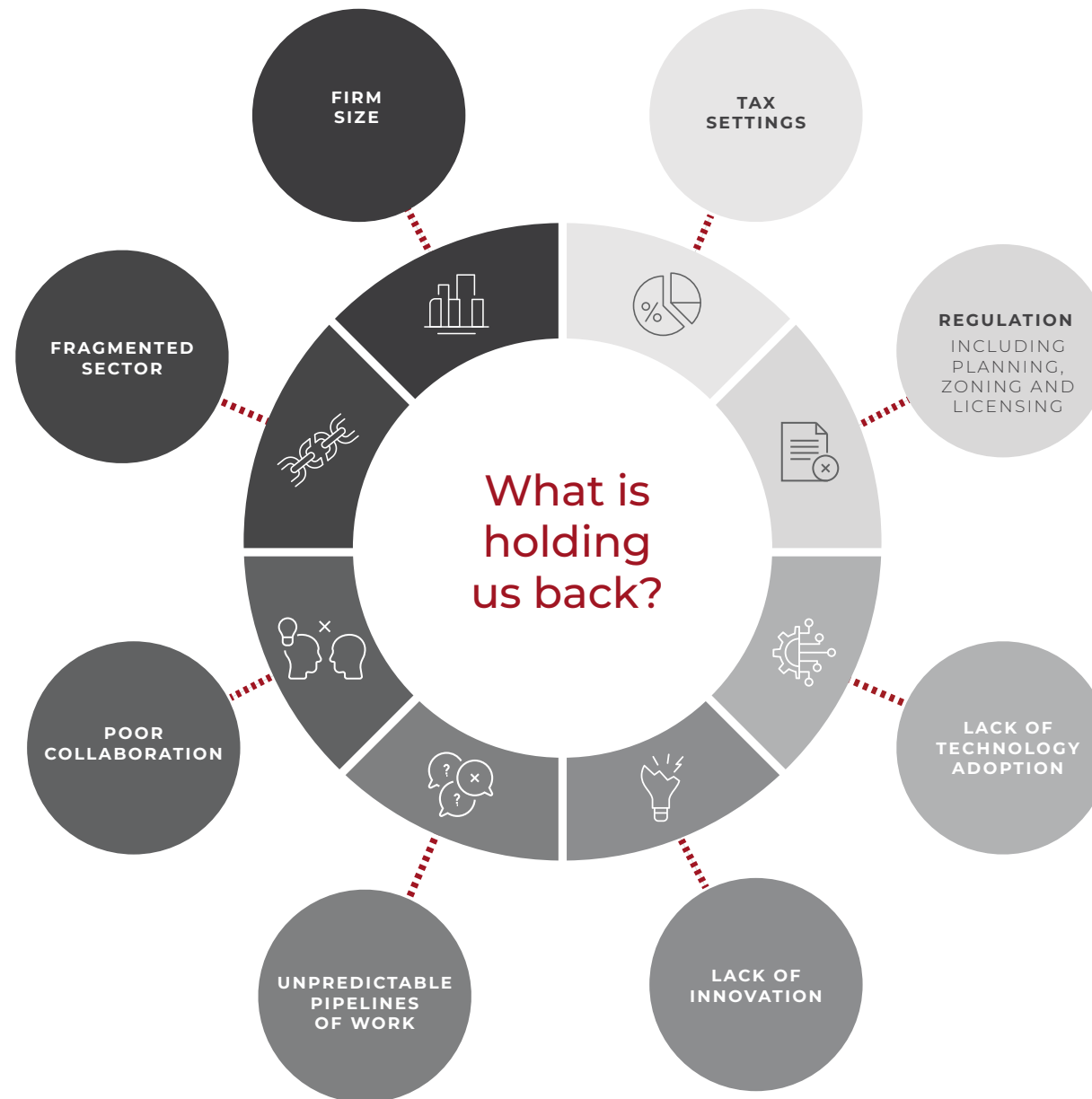


without any
additional
labour



**equivalent to gaining
an extra 150,000
construction workers**

Factors contributing to weak construction productivity



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INTRODUCTION: CONSTRUCTION IS CRITICAL TO ALL AUSTRALIANS BUT IS FAILING TO DELIVER

The construction sector is one of our largest industries and is vital to the functioning of our economy. It plays a critical role in meeting Australians' housing needs, delivering the nation's infrastructure pipeline and making the energy transition. These goals are important not only for Australians today, but also for generations to come. Our economic prosperity relies on our ability to get things built, but we are losing this ability. Without improvement in this sector we will not be able to deliver on a strong economy and a strong social compact.

Put simply, productivity means producing more of something (an output) with the same or fewer resources (inputs). It is about working smarter, not harder.

By all measures, construction has been underperforming in the productivity stakes. Construction's size and interconnectedness mean it has a significant impact on the national economy and is a key driver of Australia's broader productivity weakness.¹

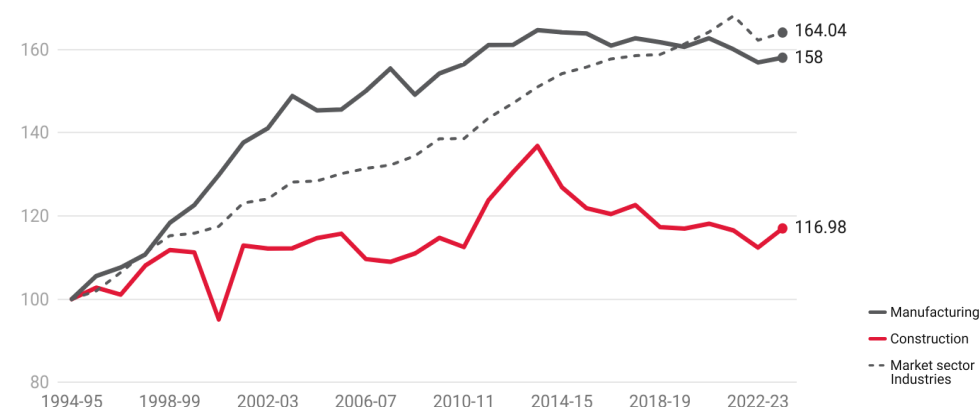
Labour productivity in construction (measured as output per hour worked) grew by just 17 per cent over the 29 years from 1994/95 to 2023/24 (Figure 1). In contrast, labour productivity grew by 64 per cent in the 'market-sector' industries, and 58 per cent in manufacturing over the same period.

Multifactor productivity in construction has been broadly unchanged from 1994/95 to 2023/24 (Figure 2). It grew by almost 20 per cent in market-sector industries and 23 per cent in manufacturing over the same period.²

Construction productivity underperforms

Figure 1 - Labour productivity

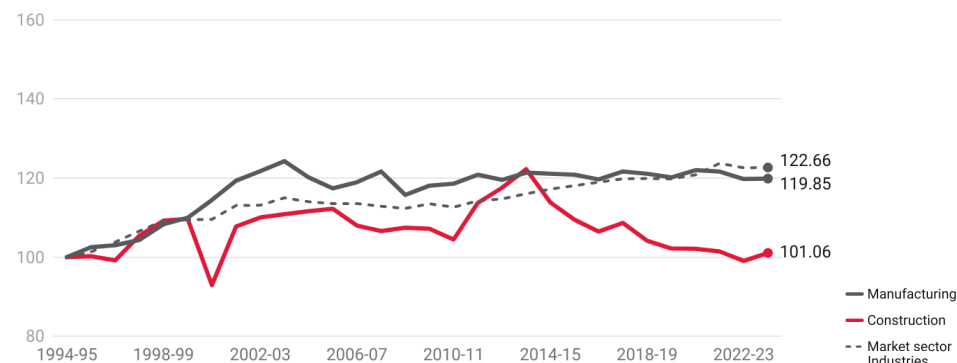
ABS estimates of labour productivity hours worked basis; 1994 =100.



Source: Australian Bureau of Statistics, 5260.0.55.002 Estimates of Industry Multifactor Productivity, Australia, table 6.

Figure 2 - Multifactor productivity

ABS estimates of multifactor productivity hours worked basis; 1994 =100.



Source: Australian Bureau of Statistics, 5260.0.55.002 Estimates of Industry Multifactor Productivity, Australia, table 1.

Productivity has been particularly weak in the building of houses and apartments. Our analysis shows that dwellings built per construction worker have declined by roughly 50 per cent since the 1970s (Figure 3).

These measures do not account for changes in the size and quality of buildings, which have both improved over time. The Productivity Commission has found that, even when adjusting for size and quality improvements, construction labour productivity per hour worked has declined by around 12 per cent since 1994, and still significantly underperformed the wider economy, which experienced labour productivity growth of around 49 per cent over the same period.

Construction's productivity performance has been one of the weakest of all sectors in the economy – it is one of only three market-sector industries to have *subtracted* from overall multifactor productivity growth in recent decades.³ Boosting productivity in construction will be vital to solving Australia's housing crisis, rejuvenating weak business investment and supporting a strong economy.

We are not alone in this challenge - many other advanced economies have also experienced weak construction productivity over the past 30 years, including the United Kingdom, the United States and Canada.⁴

The construction productivity problem is complicated and there is no single driver of poor performance. Analysis by CEDA and others, as well as discussions with key stakeholders, suggest it has not been driven by some commonly cited culprits, including: a lack of new technologies;⁵ measurement issues; quality improvements; growth in the white-collar workforce;⁶ or industrial relations and conditions in enterprise-bargaining agreements.⁷

Instead, a range of other factors have contributed, including: complex, slow approvals; lack of innovation; lack of scale; workforce issues; and policy settings.⁸ Inefficiency (rather than a lack of technical progress) also appears to be part of the problem.^{9,10}

Figure 3 - We are building half as many homes per worker as in the 1970s

Residential dwelling units completed per construction worker

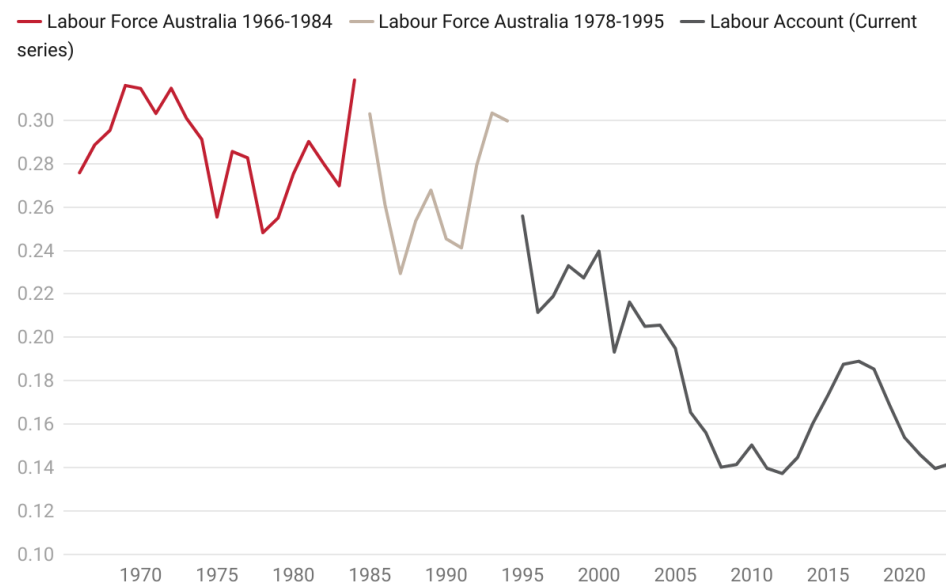


Chart: CEDA analysis of ABS data | Source: Labour Force Australia 1966-1984, Labour Force Australia 1978-1995, Labour Force Account (Current series)

Our analysis shows a key driver of this multifaceted challenge is that Australia's building industry is dominated by very small firms due to its structure, complex regulations and broader tax settings.

This report focuses on the lack of scale in the sector, an area that hasn't previously received much attention. The construction sector is currently suffering from labour shortages, which is holding back progress on critical infrastructure and housing. It is imperative that we address productivity in the sector to allow us to deliver the infrastructure Australia needs.

CONSTRUCTION IS NOW DOMINATED BY SMALL FIRMS

Construction is one of the least concentrated industries in Australia, made up mainly of small firms and individual subcontractors. Aside from the few very large or highly specialised firms, the number of firms in the industry is far greater than what is needed to deliver effective competition. Our analysis shows this is contributing to the productivity problem.

There are currently 410,602 construction firms in Australia, of which 98.5 per cent are small businesses with fewer than 20 employees.¹¹ Ninety-one per cent of construction firms are microbusinesses with fewer than five employees,¹² up significantly from 43 per cent in 1988/89.¹³ Construction has a much higher share of microbusinesses than comparable industries (Figure 4).

In Australia, firms with fewer than 20 employees account for 53 per cent of total construction sector revenue. Many of these small firms are “construction services” providers, which includes a diverse network of tradespeople and subcontractors. Their large share of construction revenue and employment, and high degree of interconnectedness with the rest of the sector, means that small construction firms are critical to the sector’s overall productivity.

Figure 4 - Most construction firms are microbusinesses

Percentage of employing firms by number of employees

■ 1-4 ■ 5-19 ■ 20-199 ■ 200+

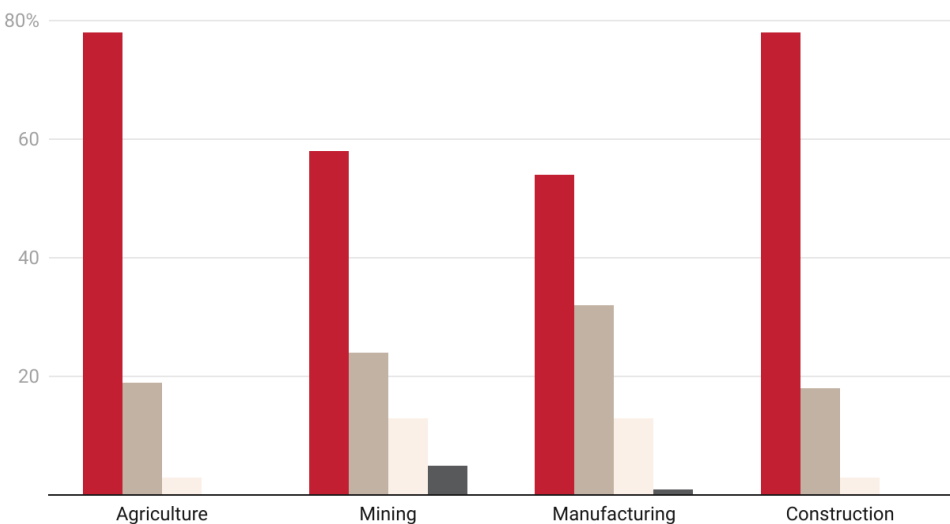


Chart: CEDA analysis of ABS data | Source: 8165.0 Counts of Australian Businesses, including Entries and Exits, June 2020 to June 2024

SMALLER CONSTRUCTION FIRMS ARE LESS PRODUCTIVE

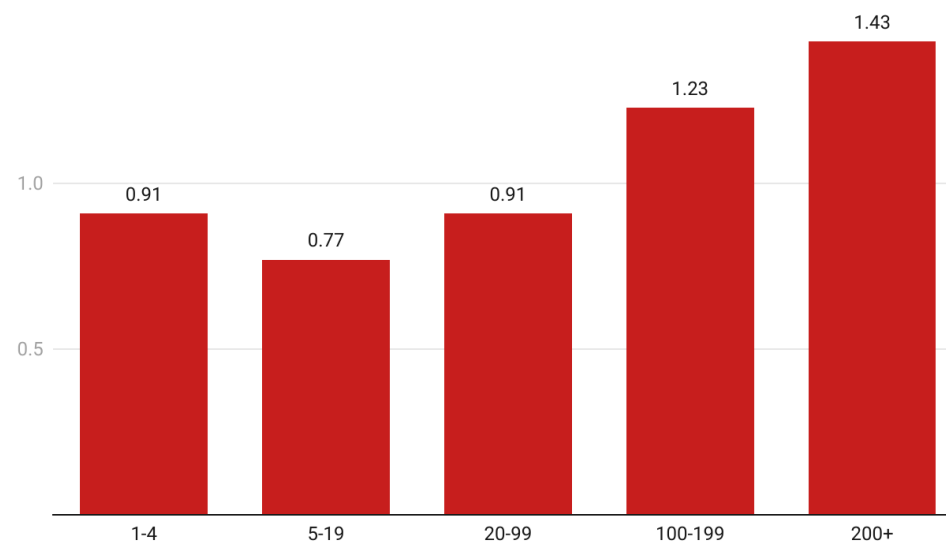
We analysed previously unreleased ABS data that looked at revenue per employee in construction firms ranging in size from zero to 200+ employees. While we are unable to measure firm-level productivity, revenue per employee acts as a reasonable proxy for labour productivity.¹⁴ Our analysis shows larger Australian construction firms produce more per employee than smaller ones.

We found that Australian construction firms with 200 or more employees generate 86 per cent more revenue per worker than Australian construction firms with 5 to 19 employees (Figure 5).

If firms in the Australian construction industry matched the size distribution of firms in the manufacturing industry, the construction industry would produce 12 per cent, or \$54 billion, more revenue per year without requiring any additional labour. This is equivalent to gaining an extra 150,000 construction workers. In a sector currently suffering from labour shortages that are holding back progress, this sort of increase would make substantial inroads in the ability to deliver on critical infrastructure and housing works.

Figure 5 - Construction workers generate more revenue in larger firms

Average revenue per employee, by number of employees



Sample of construction industry businesses, linked PAYG and business activity data

Chart: CEDA analysis of ABS data | Source: ABS data commissioned by CEDA

Smaller firms are less able to achieve economies of scale and scope. Consultation with CEDA members and other industry experts has confirmed that the construction industry tends to be fragmented, insular and lacking incentives to adopt new ways of doing things.

While there are some large, highly innovative firms in the sector, overall it is dominated by small businesses with more traditional ways of working. They have less capacity to innovate, to invest in equipment and technology, and to devote to training and capability building, which are all important drivers of productivity growth.

The link between firm size and productivity likely works in both directions – naturally more productive construction firms do more building, while firms that anticipate taking on more projects also invest more in technology.¹⁵ Differences in business models between large and small construction firms may account for part of this difference – for example, larger firms often function as project managers, outsourcing much of the physical work to subcontractors, and larger firms tend to dominate high density and civil engineering projects.

Our results align with overseas experience - researchers have found a strong connection between firm size and productivity in US residential

construction, where firms with 500 or more employees produce six times as many units per employee than firms with fewer than 20 employees, and firms with 100 to 499 employees are twice as productive. They estimate that US residential construction could be as much as 91 per cent more productive if its size distribution matched US manufacturing.

CEDA workshop participants identified poor management capabilities as the most important factor holding back technology and digital adoption in construction.

ABS data backs this up, showing that small construction firms have weaker management capabilities than equivalent-sized firms in other industries. In 2021/22 less than 7 per cent of construction firms had a written strategic plan, 8 per cent used key performance indicators, 21 per cent had reviewed their business model and just 12 per cent actively sought digital technologies to improve business processes. These scores were all 10 percentage points lower than the aggregate Australian business sector, and 2 to 5 percentage points lower than for all businesses with 0-4 people.

WHY ARE THERE SO MANY SMALL CONSTRUCTION FIRMS?

Construction firms have stayed small because the structure of the industry and regulations encourage them to remain so.

Construction is highly segmented and demand is highly cyclical. Downturns in demand can disadvantage businesses that invest in productivity-enhancing assets like machinery, equipment and new technologies. They are therefore more likely to maintain cost flexibility by relying on labour instead of capital inputs, and to favour subcontracting as a more flexible source of labour than direct employment.

While subcontracting may be the right approach for a given business or project, at an economy-wide level it means more work is done by smaller, less productive firms. And as subcontracting fragments the industry, this has likely increased the time and effort spent on procurement, contract negotiations, supervision and regulation, and dispute resolution. Our consultation has identified reworks and disputes as a major source of inefficiency in the sector.

Our analysis of ABS data found that in Australia, more residential construction output also comes from bigger firms in areas with faster dwelling growth – showing the strong demand pipeline allowing firms to invest and grow (Figure 6).

Certainty and repeatability can increase productivity. Innovation typically comes with up-front financial and learning-by-doing costs, which can make new approaches unviable on an individual project basis, where customers and upstream suppliers are more likely to focus on cost and time savings rather than experimenting with new methods or technologies.

The success of Victoria's Level Crossing Removal Program is a case in point. This infrastructure program in Melbourne elevated rail lines above roads. The goal in 2018 was to remove 85 crossings by 2025 with a budget of \$16.3 billion (average cost \$191.8 million per crossing).¹⁶ The goal was achieved earlier than anticipated and following efficiency improvements

Figure 6 - Areas with greater housing supply have bigger firms

Residential completions, census data industry employment

Dwelling completions between 2016 and 2019 at SA4. Percentage of construction firms within SA4 employing five or more people. Slope .0265, R Squared .029

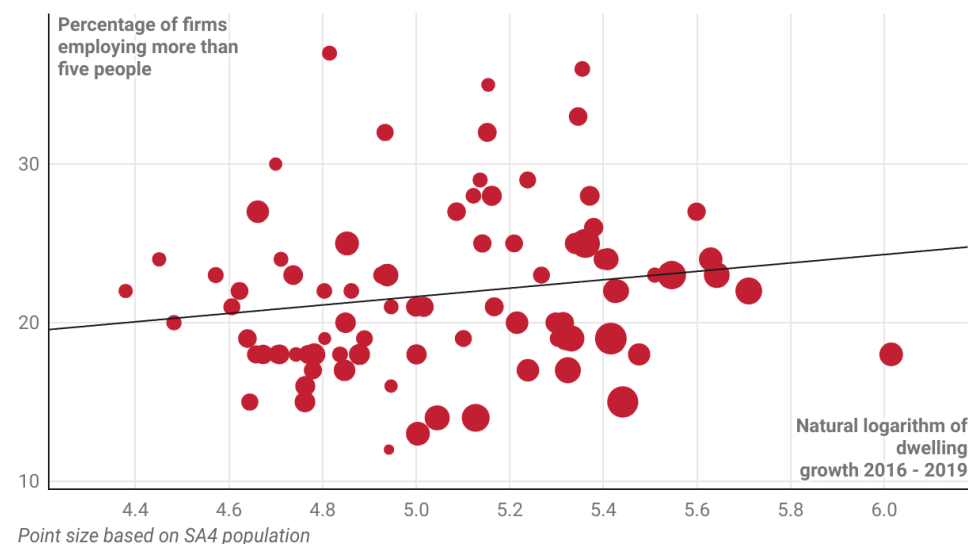


Chart: CEDA analysis of ABS data | Source: Small Area Dwelling Completions, Counts of Australian Businesses, including Entries and Exits

was expanded to remove 110 crossings by 2030 with a budget of \$19.8 billion (average cost \$180 million per crossing).¹⁷

The demand certainty created by this program enabled the firms delivering the infrastructure to invest in new building methods and process innovations.¹⁸ In addition, industry stakeholders say a key factor in the program's success was the tight integration between client and contractors, where the procurement and contracting framework forced innovation to occur.

TAX SETTINGS AND REGULATIONS KEEP FIRMS SMALL

The construction sector is governed by a complex set of regulations across all three levels of government. While regulations are important to ensure minimum safety and quality standards, excessive regulation hinders productivity, including by limiting firm size.

Tax incentives encourage construction firms to remain small

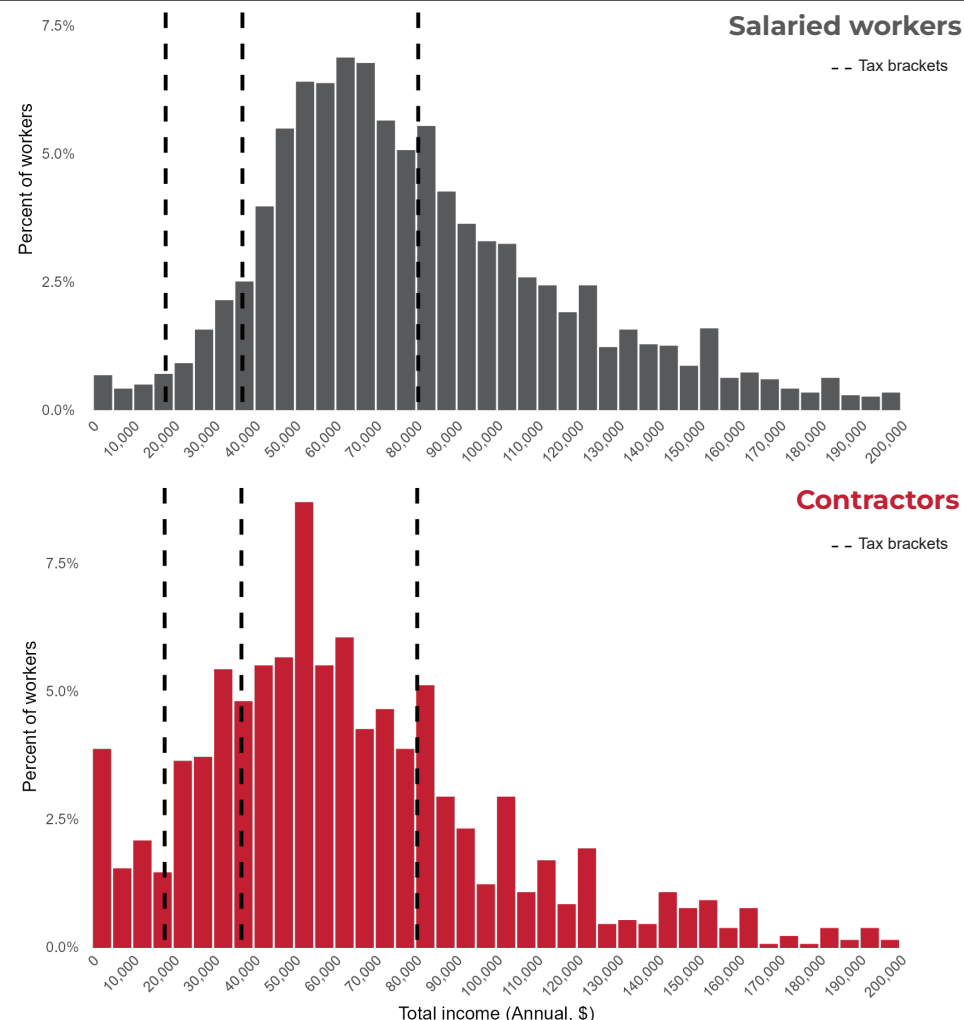
Being self-employed can result in paying less tax than a salaried employee earning the same pre-tax income. Self-employed businesses typically operate as a private company or sole trader.

Our analysis of HILDA income data for people working at least 30 hours per week shows around 8.5 per cent of independent contractors in the construction sector disclose income under the tax-free threshold of \$18,200, and therefore pay no tax, compared with just 2 per cent of salaried construction workers (Figure 7). 2.2 per cent of the contractors disclose no income at all, compared with 0.44 per cent of salaried workers.

Self-employed businesses operating as sole traders are taxed at the same marginal tax rates as employees. However, independent contractors must declare and assess their own tax obligations. Self-employed people are more responsive to changes in tax rates and are more likely to report their income just under thresholds where marginal tax rates increase, often called “bunching”.¹⁹

These results are not unexpected given the structure of our taxation system. Employees or salaried workers typically make ongoing personal income tax contributions deducted from each salary payment with rising thresholds based on income. In contrast, private companies are taxed at a flat rate of 25 per cent for small and medium businesses (with revenue of less than \$50 million) and 30 per cent for larger businesses.

Figure 7 - Contractors are more likely to report very low incomes



Source: CEDA analysis of HILDA Release 22.0 - Construction workers who work 30 or more hours per week.

A high-income construction worker earning \$148,000 per year would pay 26 per cent tax as a salaried worker. As a contractor, they could structure their income with a discretionary trust and a 'bucket' company and pay just 18 per cent tax – a difference of \$12,400 in annual-take home pay after tax.²⁰ Additionally, in trust structures, a high-income individual can distribute income across household members, who may pay even lower tax rates. Or, in rare cases, contractors can simply misrepresent their income and avoid tax altogether.

Other tax settings also favour smaller construction firms. For example, the instant asset write-off currently allows businesses with turnover of less than \$10 million to claim an immediate tax deduction on vehicles and other business assets.²¹ There are therefore significant incentives for construction workers to be self-employed under a private company arrangement to minimise their tax bill.

It's not just individual tax settings that are discouraging scale. Taxes charged at different rates based on firm size can also discourage productive firms from growing, particularly payroll tax. For example, in South Australia, where the tax-free threshold for payroll tax was raised from \$600,000 to \$1.5 million in 2019, firms that would otherwise generate revenue in excess of \$1.5 million adjusted their behaviour to remain just under the tax-free threshold.²² At the national level, around 60,000 companies in construction pay the lower federal company tax rate of 25 per cent rate for small and medium businesses rather than the large business rate of 30 per cent, which is the second most by industry.²³

Australia's land-use regulation is complex and decentralised

Australia has a complex combination of local, state and federal rules around land-use that often differ across local geographic areas. Australia has the most decentralised system of land-use planning in the OECD.²⁴

Over time, the work required to lodge development applications and comply with planning and construction rules has increased significantly. For example, the development application to build a three-storey block of apartments in Sydney in 1967 was 12 pages long.²⁵ Today an equivalent building would require extensive structural, environmental, traffic and often heritage assessment, meaning applications are many hundreds if not thousands of pages long.²⁶

This can prevent new firms from entering the local market and prevent productive firms from growing.²⁷ Where there is more regulation or it adds greater uncertainty to large housing projects, firms are more likely to prefer smaller projects that are better suited to smaller, less productive firms.²⁸ This exacerbates geographic segmentation, makes it harder for firms to grow and reduces the incentive to invest in technology.

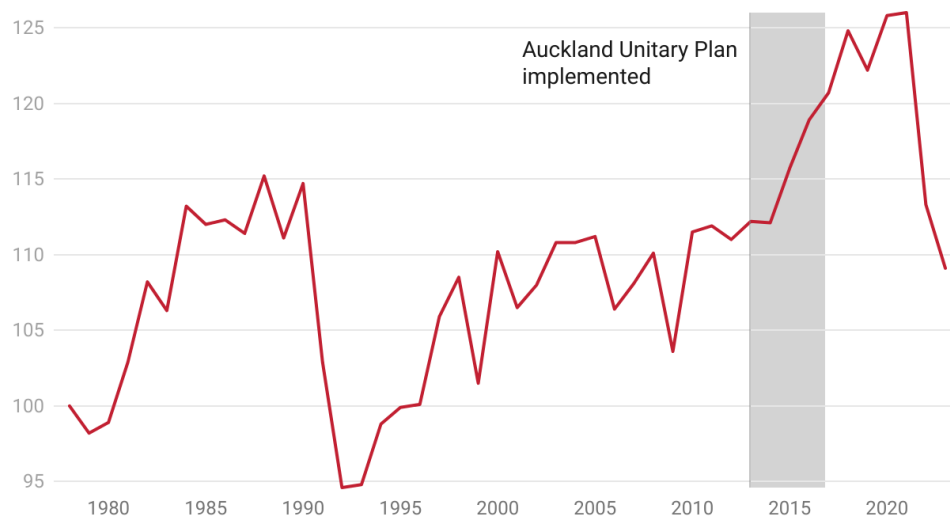
In the US, researchers found the decline in homes built per construction worker after 1970 occurred just as land-use regulations tightened.²⁹ They found that more regulated US cities had higher construction costs and smaller, less productive residential builders.³⁰

This area is ripe for reform. Our consultations revealed broad agreement that land-use regulation is a barrier to firm size in Australia.

Experience in New Zealand suggests reducing these regulations can help to boost productivity. The Auckland Unitary Plan removed many different zoning restrictions, allowing for higher-density development across the city. The “up-zoning” of Auckland started in 2013 with the introduction of “Special Housing Areas”.³¹ It was implemented across three-quarters of Auckland in 2016, and more than tripled approvals for dwellings within six years.³² It coincided with a significant increase in multifactor productivity in NZ construction (Figure 8).³³

Figure 8 - NZ construction productivity accelerated after zoning reform

New Zealand construction sector multifactor productivity; 1978 = 100



Source: Stats NZ

Other regulations

Other regulations may also be holding back firm size and productivity. This includes **state-based occupational licensing**, which sets legal requirements to practice an occupation such as being a plumber, painter or electrician. Construction licensing has become more stringent in recent years,³⁴ which can be detrimental to productivity growth because it makes businesses less dynamic, reduces business entries and exits, and makes it harder for the most productive businesses to grow.³⁵ The Federal Government's new plan to introduce national licensing for electricians is a much-needed first step in the right direction.³⁶

Two reasons commonly put forward for licensing are consumer and/or public safety and service quality. Despite widespread licensing in the sector, however, it has been plagued by problems with non-compliant cladding, water ingress, structurally unsound roofs and poor fire safety.³⁷

As CEDA has previously argued, while safety must be guarded, there are better ways to protect consumers, such as closer regulatory oversight, including on-site inspections of building works. Professional indemnity insurance is also important. Licensing of low-risk trades such as painting and decorating should be abandoned, and remaining licences should be nationally consistent.

Regulation can enhance productivity if targeted correctly. Governments at all levels must recognise that, despite good intentions, poorly designed and onerous regulations can have big opportunity costs and unintended consequences. More coordination is needed to improve this. Stronger directives from federal and state governments could also help.

CONCLUSION AND POLICY DIRECTIONS

Productivity in the construction industry has been stagnant for three decades. While many factors have contributed to this outcome, a critical driver is the dominance of small firms. Currently, 98.5 per cent of Australian construction firms have fewer than 20 employees. Smaller building companies are less productive than bigger firms because they can't achieve the same productivity gains from economies of scale and scope, innovation and investment.

Our analysis of previously unreleased ABS data shows Australian construction firms with 200 or more employees generate 86 per cent more revenue than those with 5 to 19 employees. If Australian construction firms matched the size distribution of firms in the manufacturing industry, construction would produce 12 per cent, or \$54 billion, more revenue per year without requiring any additional labour. This is equivalent to gaining an extra 150,000 construction workers.

The dominance of small firms is the result of the cyclical and segmented nature of the industry, combined with the shift to subcontracting that took place in the early 1980s and late 1990s.

Current regulatory settings are keeping builders small:

- Tax incentives favour independent contractors, who are four times more likely to disclose income under the tax-free threshold than salaried construction workers. Other tax settings, such as the instant asset write-off and payroll tax thresholds, also favour smaller construction firms.
- Australia has the most decentralised system of land-use regulation in the OECD, which exacerbates geographic segmentation and makes it harder for firms to expand into new areas.
- Complex, and in some cases increasingly stringent, state-based occupational licensing rules also make it harder for the most productive businesses to expand interstate.

Many drivers of productivity, such as technology adoption, require scale and certainty. As volatility and regulation in the sector grows, so too does the complexity and risk involved in delivering construction projects. This prevents productive firms from growing.

To encourage scale, governments should:

1. Make local and state government regulations more streamlined and consistent.
2. Help to smooth out variability in demand by creating a more consistent, predictable pipeline of construction work through their infrastructure and social housing programs.
3. Better align the relative tax rates for individuals and small and large businesses as part of broader reform of the entire tax system.

Australia has been slow to deliver on critical infrastructure projects and has not built enough homes to keep up with demand. Sydney is now the second most expensive housing market in the world, while Adelaide is sixth and Melbourne is ninth.³⁸

All levels of government must tackle this challenge. We must ensure that basic policy foundations such as regulations and tax don't stand in the way of targeted measures to build more homes.

To help us build smarter, not just harder, we must focus on policies to lift productivity in construction.

This work has benefited from insights gathered from two workshops (around 15 attendees in total), as well as broad consultation with around 15 other CEDA members and key stakeholders, including industry participants, academics, state and federal government agencies and industry bodies. We are sincerely grateful for all contributions and insights received.

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