

## Stakeholder Power and Mutual Dependence: Construction Contractors are caught in an Economic Vise

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### Abstract

This paper asserts that construction contractors are caught in a little understood dynamic of rapidly changing construction industry value each quarter. Chaotic work acquisition volume is the start of other follow-on problems that may lead to financial distress. Unpredictable construction volume at the local level causes negotiating power and mutual dependence imbalances that manifest in misaligned tenders and, thus, suboptimal contract agreements for contractors – main and sub. Tendering is the leading source of insolvency for contractors in Australia. At the same time, the number of competitors stays the same and the means of production – their trust and qualified people – are the last resort in cost cutting. Since net profit margins in construction contracting are single digit percentages, these firms are never far from producing a year-end financial loss. Additional pressures on contractors include a disproportionately high number of competitors when compared to established industries such as manufacturing. Construction material suppliers are few, so they control the flow of necessary materials for project installation while having the ability to limit credit amounts and penalise late payments via an adverse public report. These negative dynamics are exacerbated by uncertain workflow and cash flow. This paper asserts that contractors should develop more risk management strategies for the work acquisition function. We suggest some, such as the Developer-Contractor business model and structured decision-making systems. For society, the long-term critical need is for better organisational and project outcomes. These are critical for mitigating the emerging crisis of climate change effects and rapid urbanisation.

### Keywords

construction industry, contractor payment, finance, contract terms, procurement, economics

## 1 Introduction

This research found a gap in the literature concerning the dynamics between stakeholders: owners/construction service buyers, contractors, and vendors/employees. This study's aim is to theorise that quarterly changes in construction volume facilitate significant power and mutual dependence imbalances to the other two groups that substantially affect construction contractors' performance, including insolvency. Furthermore, this is the leading cause of contractor bankruptcy. This paper uses a narrative literature review and a thought experiment from researchers' industry experience as a starting point for assertions. Additionally, the research team asserts that the evidence will be discovered when follow-on research is conducted.

The industry struggles to improve within an environment of adversarial commercial competition (Gray and Hughes, 2009). The industry's symptoms include work acquisition forecasting opaqueness, tardy contractor and supplier procurement, design chaos, confrontational relationships, distrust, unfair risk allocation and reliance on small contractors. The negative factors are exacerbated by the low bid and craft nature of the industry (Gann and Salter 2000). This often implies the creation of a new supply chain for each project and short-term, discontinuous interfirm relationships (Briscoe and Dainty, 2005). Furthermore, The Electrical Trade Union of Australia (ETUA) Report (2015) states, "*While market forces play a part, there are other factors at play—the structure of the commercial construction sector, severe imbalances of power in contractual relationships, harsh, oppressive and unconscionable conduct, unlawful and criminal conduct and a growing culture of sharp business practices.*"

## 2 Literature Review

The construction industry is complicated in its processes. Critical functions include forecasting, planning, communicating, regulating, designing, manufacturing, constructing, and maintaining buildings and other structures. In addition, the sector embraces all built items, either vertical or horizontal challenging constructors with dramatically different projects (Ireland 2004). These present a significant daily test for industry practitioners attempting to develop sourcing strategies to maximise value for money from their supply chains. There is less similarity between vendors. All these businesses vary in practices and outputs, such as prices, terms, conditions, delivery timeliness, and credit policies (Cox and Ireland, 2002).

Construction demand is inherently chaotic. Dramatic fluctuations in construction outputs are normal at the local level. The World Bank (1984) researched several nations with varying levels of wealth and found that the variation of construction outputs was twice as random as manufacturing and the general economy. A similar study of the European Union by the United Nations (1976) concluded that the construction industry experienced more unpredictable business cycles than other economic sectors. The nature of construction demand and the supply-demand dynamics of construction products, equipment, management and labour cause these fluctuations.

Construction clients who do not always fully understand their present and future demands are often shocked by the higher-than-expected competitive and adversarial supply markets. As a result, they are prey to opportunistic behaviour from construction firms operating in tier one (Ireland 2004). Constructing shelter, infrastructure and processing facilities involves numerous complex tasks with minimal costs. However, many functions in a construction project consume significant time and expense. Even a minor mistake can require substantial costs to rectify. So, careful craft and management are required (Lu et al. 2013).

Porter (2004) states that the fundamentals of every industry's dynamics are affected by five forces. These five forces directly apply to the construction. See Table 1.

**Table 1.** Porter's (2004) Five Forces Adapted to the Construction Industry

Forces	Construction Industry Dynamics	Power Advantage & How It Manifests
Competitors	The rivalry of existing firms. The number of competitors relative to other sectors provides a hint of intensity. Construction has four times the competitors than manufacturers (ABS 2020). This service industry is perceived as abundantly available. It is based on in situ projects; therefore, travelling site crews can go to where the work is within reason, thus, increasing local competition.	Project Owners / Construction Service Buyers – downward pressure on tender pricing due to the threat of a new source of construction services.
Possible Entrants	The threat of new competitors. New entrants can erode the market share and profit margins. Experience is available to all employees. Construction has three times as many new entrants as manufacturing (ABS 2021). Due to their zero backlog, they tend to be aggressive in pricing and promises when it costs them nothing but a conversation with a client.	Project Owners / Construction Service Buyers – a constant or rising number of similar construction firms
Buyers	Those customers exchange dollars for the products and services the industry participants provide. Increases and decreases in the number of buyers and changes the supply-demand dynamic. The construction service buyers start the process with their vision and funds, which vary depending on their needs and wants. The primary enablers of new construction are the cost of money and local population growth. The buyers seek excellent economic value for this large-cost asset. They scrutinise the proposals for an extended period of time and seek many providers before committing. Sometimes, they have options such as doing nothing, self-performance or remodeling their existing structure.	Buyers or Contractors depend on the economy's activity – boom, recession, or average growth. See Figure 1.
Suppliers	Vendors transacting with the construction industry provide materials, software, contract services, equipment, tools and other essentials. Construction has few suppliers of each type, and they influence the industry more than contractors. Construction suppliers sell to a fragmented industry. Due to their three valuable services to manufacturers, they do not have to contend with many substitutes for their products or delivery services – credit management, salesforce production and inventory buffer (Stevens and Smolders 2023). As a result, their products are a critical part of their buyers' business.	Vendors or Contractors depending on the activity of the economy – boom, recession, or average growth

Substitutes	Those organisations can provide an acceptable replacement for the industry's product or service. This is a constant threat to all competitors and thus heightens the tension between buyers and sellers. There are few alternatives to constructing buildings and structures. One option is offsite construction manufacturing components such as modular building vendors and pre-fabricators such as kitchen and bathroom pod assemblers. Precast systems have crossed into construction types such as bridges, roads, parking garages and building frames.	Project Owners / Construction Service Buyers – downward pressure on tender pricing due to the threat of a new source of construction services. See Figure 1.
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## 2.1 Construction Stakeholder Relationship Dynamics

Resource dependence theory asserts a unified view of power at the organisational level of analysis. Pfeffer and Salancik (1978) created an enduring model to analyse complex inter-organisation relationships. Piskorski and Casciaro (2004) asserted that changing power imbalance and mutual dependence affect any company's performance. Emerson's (1962) theory of power-dependence relationships and its exchange framework claims that the power capability of actor one concerning actor B is the inverse of A's dependence on B. In turn, dependence is a function of resource priorities and the number of alternative input providers. See Table 2. One explanation is that stakeholder A relies upon stakeholder B in proportion to A's resource requirement that B can provide and (2) in inverse proportion to the availability of alternative actors capable of offering the same input to A. Conversely, stakeholder B's needs on stakeholder A vary (1) in proportion to B's resource requirement that A can furnish and (2) inversely with the number of other stakeholders able to furnish the same inputs to B. See Table 2.

Power imbalance captures the dynamics of relationship independence of one actor over another. Their need for each other – typically asymmetrical explains a tendency to accommodate or reject demands. Formally, this construct can be defined as the difference between two actors' dependencies or the ratio of the negotiating leverage. During the legal contract phase versus the sales or post-transaction phase), power imbalance reduces the frequency of exchange among actors by hindering conflict resolution (Lawler and Yoon, 1996). A company with leverage advantages tends to argue for agreements favouring itself, whereas the weaker actor argues for agreements that equalise benefits. Unequal power manifests in issues of legitimacy and fairness concerning the distribution of benefits, complicating the bargaining agenda and diverting attention from the structural dependencies the exchange should address (Lawler and Yoon, 1996).

The second aspect of any business relationship is mutual dependence, which captures the existence of bilateral dependencies, regardless of whether balanced or imbalanced. Mathematically, this measure can be defined as a function of the two actors' interdependence (Bacharach and Lawler 1981).

Power imbalance and mutual dependence must be considered simultaneously to produce an identifiable power-dependence structure in any relationship. This is because, for any value of power imbalance, a power-dependence relation can be characterised by varying levels of mutual dependence. Conversely, for any given level of mutual dependence, there can be a range of power imbalances (Casciaro and Piskorski 2005). The power imbalance is at its highest – 2 – when low-dependence actors work with high-dependence ones. The lowest mutual dependence score is when two low-dependence parties work together. See Table 2.

**Table 2:** Adapted from Power Imbalance and Mutual Dependence Configuration Table (Casciaro and Piskorski 2005).

		Construction Stakeholder A's Dependence on Stakeholder B		
		Low	Medium	High
Construction Stakeholder B's Dependence on Stakeholder A	Low	Power Imbalance: 0 Mutual Dependence: 2	Power Imbalance: 1 Mutual Dependence: 3	Power Imbalance: 2 Mutual Dependence: 4
	Medium	Power Imbalance: 1 Mutual Dependence: 3	Power Imbalance: 0 Mutual Dependence: 4	Power Imbalance: 1 Mutual Dependence: 5
	High	Power Imbalance: 2 Mutual Dependence: 4	Power Imbalance: 1 Mutual Dependence: 5	Power Imbalance: 0 Mutual Dependence: 6

Porter (2004) provides an approach to view the construction industry regarding its threats and opportunities for its stakeholders. This paper has created an Australian Construction Industry Dynamics Table to clarify the disorder and relativistic characteristics of the industry. See Table 3.

**Table 3.** The Australian Construction Industry Dynamics Adapted from Porter (2004).

Porter's Dynamics	Construction Industry Description and Effect
<i>Ease of entry</i>	Construction contractors can quickly enter the business without requiring significant qualifications such as advanced education and extensive experience. Craft skill is not learned in a classroom but on-site and is the number one value construction firms provide to project owners.
<i>Transaction size is large</i>	Project cost is the most significant personal or top three corporate investments. The scrutiny of the purchase and the sizeable monthly billing leave contractors exposed to profit and cash flow shortfalls. Wild swings in turnover (revenue) are expected). See Figure 2.
<i>Experience is available</i>	Many field and office people gain a significant understanding of the construction process – technical and business - during employment. Many inputs (client, labour, material, equipment) are evident to them, including the process of work acquisition, project operations, and finance that creates project profitability. This leads employees with critical industry knowledge and insider understanding of their current employer if they venture into the market as a constructor.
<i>Numerous and equally balanced competitors</i>	In many markets, the highest market share of any firm is two per cent or less and over 95% are considered small and medium enterprises (SME) (ABS 2021).
<i>Lack of differentiation</i>	The plans and specifications determine the product. All companies share the people constructing it (can work for any of them). Construction knowledge is observable and shared widely due to high employee turnover (differentiation of a viewable service is complex)
<i>Switching costs</i>	There is little or no switching costs to engage a different construction company to build the next project. So, project owners have many options in their negotiation with a contractor.
<i>Fragmentation</i>	Fragmented industries are challenging for one company to dominate and thus consistently prosper, and more importantly, there are few holistic solutions to its problems. There are many reasons for fragmentation, including low entry barriers, absence of economies of scale, highly diverse market needs, local jurisdictions and erratic sales fluctuations. The largest construction companies in Australia do not dominate the market. For example, CIMIC's market share was 1.9%, whereas Lendlease earned less than 1.0% (IBISWorld 2022).

The most likely result of this power and low mutual dependence imbalance on the weaker party is that those with more leverage will appropriate more significant benefits from the confrontation or collaboration. As the power imbalance increases, the weaker-positioned organisation faces an increasingly dire negotiating position and less certainty. (Piskorski and Casciaro, 2004)

### 3 Methodology

This paper has applied the Power Imbalance and Mutual Dependence model as articulated by Piskorski and Casciaro (2004). Table 4 lists the three major stakeholder groups' abilities and potential actions affecting others in the typical construction project. The approach uses the researcher's experience in a thought experiment using accepted frameworks.

**Table 4.** Three Groups of Construction Stakeholder Abilities – Generally - to Affect Power Imbalance and Mutual Dependence

Stakeholder	Abilities and Potential Actions
Group 1 - Project Owners – public and private	They can entertain many proposals from providers based on non-standard information and select a contractor based on total cost or best value. Typically pay large monthly allotments subject to their contract interpretation, physical progress percentage perception and project specification interpretation. Normally, they can delay the project start date without penalty.

<p>Group 2 - Contractors – Main and Trade</p>	<p>They rely on trade contractors to supply material, labour and equipment but are exposed to risk if the subcontractors have won more projects than they can effectively construct. Can bid on projects in other's locale due to lack of work in their area, thus raising competition. Projects often do not start on the proposed date for breaking ground. Many require government-enabled licensing or other qualifications to install their specific work. Their workers exercise at-will employment. Trade Contractors supply material, labour and equipment but are exposed to risk if the subcontractors have won more projects than they can effectively construct. Can bid on projects in other's locale due to lack of work in their area, thus raising competition. Often, project starts are delayed, translating into rushed completions where safety, quality, productivity and documentation suffer.</p>
<p>Group 3 - Labour and Management</p>	<p>Qualified Labour and Management is the most significant variable in construction; it influences project safety, quality and productivity. Its availability, lessening over the last decade, encourages managers, crafts persons and operators to be more selective of employers and pay rates. As a result, moving from company to company is more common now for less significant reasons than previously. Annually, the turnover of construction employees is over 100% due to the lessening availability of qualified personnel and dramatic fluctuations of demand in each region (Stevens 2022). See Figure 2.</p>
<p>Group 3 - Material Suppliers and Equipment Hire Organisations</p>	<p>They can directly set contractor pricing, purchasing power and the volume of orders through their credit functions. Also, they can report adverse payment activity by contractors. The availability of products and equipment is directly influenced by construction economic activity.</p>

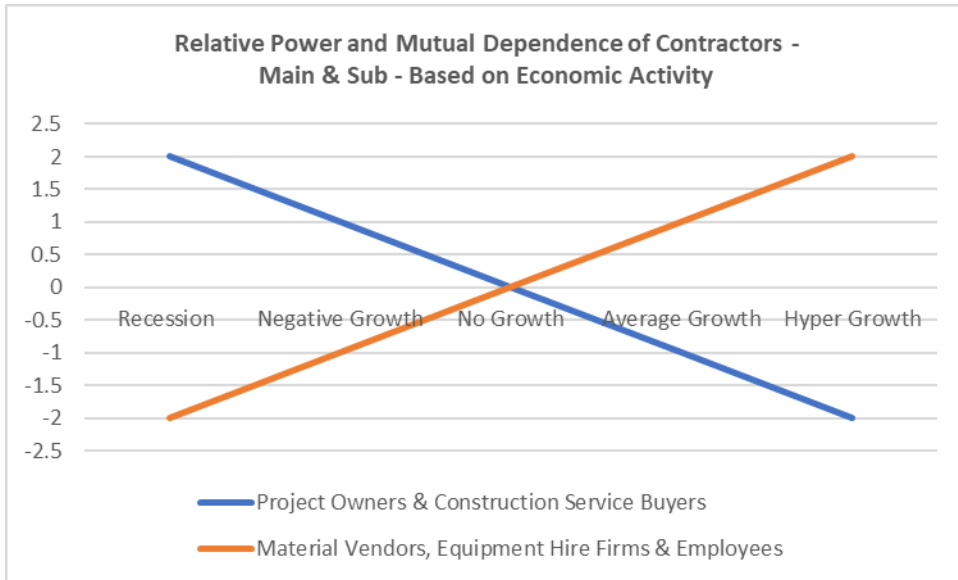
Economic activity changes the dynamics of commercial relationships. To illustrate, consider these extremes: recessionary versus high growth periods. See Figure 1.

In recessionary times, several characteristics emerge.

- *Group 1* - Project Owners and Construction Service Buyers can entertain many proposals from contractors and property owners to seek financially advantageous terms and conditions. They do not have to build, but the project can advance if the proposers offer great economic value (sometimes due to desperation).
- *Group 2* - Contractors (main and sub) seek to find many potential clients to propose to. As a result, they offer financially attractive tenders with significant concessions in terms and conditions. At the same time, they are reducing staff to decrease operating costs due to the lack of replacement projects for those closing.
- *Group 3* –
  - Labour (crafts persons, equipment operators and labourers) and Managers (Project, Site, and General Office seek work against many like-qualified applicants.
  - Material Suppliers and Equipment Hire Organisations are liquidating their inventory and equipment fleets to minimal viable levels and using the cash as a buffer against the downturn if it continues longer than expected.

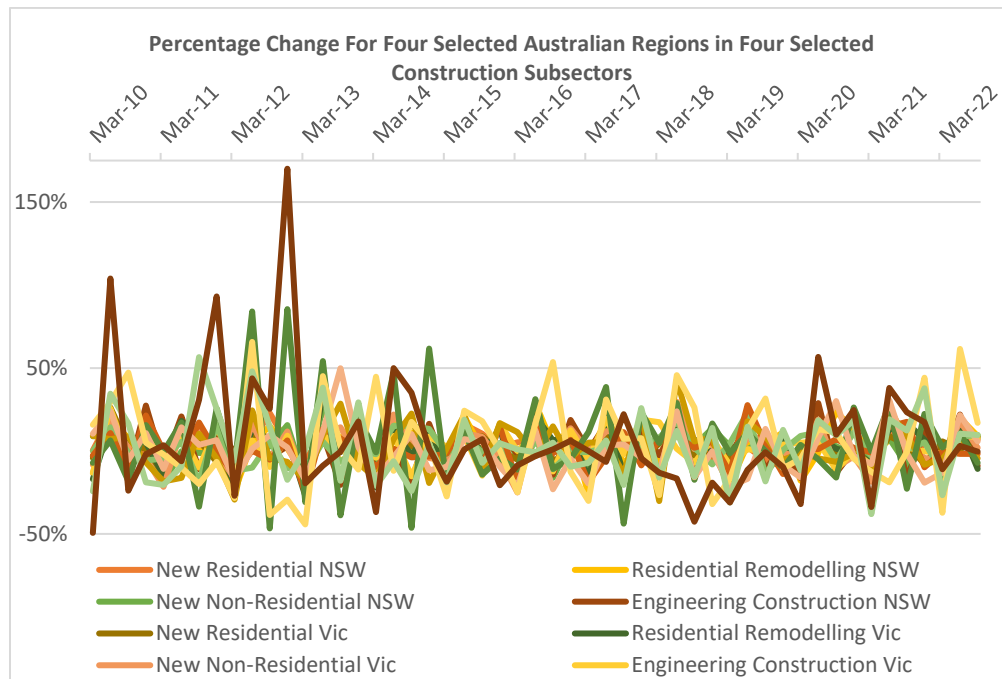
In high-growth periods, these behaviours are common:

- *Group 1* - Project Owners and Construction Service Buyers design and fund projects that do not violate their money-for-value equation with fewer above-average profit opportunities. Speculative development occurs more often in economic booms, followed by recessions in local markets, leading to sometimes payment reductions and delays.
- *Group 2* - Contractors (main and sub) tender more projects than previously but are hard-pressed to reject an accepted proposal from a client. Their prices rise well past their recessionary proposals. As a result, they may overfill their "doable" backlog. Once their tender is accepted, they attempt to schedule not to overlap each excessively; however, the client's contract penalises untimely progress/.
- *Group 3* –
  - Labour (crafts persons, equipment operators and general labourers) and Managers (Project, Site and General Office) are carefully selecting whom to work for and at what wage, mindful of the excessive "lost last job" statistics (well over 100% in some years).
  - Material Suppliers and Equipment Hire Organisations propose higher unit prices and monthly hire rates. As a result, products and equipment may become scarce as inventories are managed aggressively to maximise profit opportunities.



**Figure 1.** Power Imbalance and Mutual Dependence Per Economic Activity Cycle. Adapted from Casciaro and Piskorski (2005).

The researchers collected construction dollar value (ABS 2022) in the most recent 12 years available and calculated the percentage change for each quarter from the previous for four distinct construction subsectors – New Residential, Residential Remodeling, Non-Residential, and Engineering. In addition, four regions of Australia were selected - two most significant and two smallest by population – New South Wales (NSW), Victoria (VIC), Tasmania (Tas) and Northern Territory (NT). See Figure 2. This chart shows what the UN and World Bank concluded previously; a highly fluctuating construction volume at the state and territorial levels. See Figure 2.



**Figure 2:** A Visual of Chaotic Construction Volume of Four Regions in Four Work Subsectors by Quarter from 2010 to 2022 (Source ABS 2022)

Figure 2 indicates tendering chaos at the regional, city and town level, where most contractors can efficiently operate. Upon analysis, the following results were found in 816 periods (51 quarters x 4 regions x 4 types of construction work). This output was compared to the previous quarter.

- There were 58 occasions of two-quarters of sequential decline (definition of an economic recession)
  - Of the 58 occasions – 28 were between 3 and 5 quarters.
- There were 427 quarters (52.3%) of negative or no growth.
  - 293 or 35.9% of the total were double-digit percentage declines.
- There were 323 quarters of double-digit percentage growth.

This unpredictability is considered normal, while construction contracting employment between 2017 and 2020 stayed steady at approximately 500,000 persons and organisations at 230,000 (ABS 2020). However, industry studies have shown that underbidding and tendering errors significantly contribute to construction contractor bankruptcy (Stevens and Piracha 2022). This is partially enabled by the nature of the tendering process, preferring low bids typically while incomplete plans and unclear details are considered the norm (Laryea 2011)

### 3.1 Suboptimal Results

Australian construction contractor insolvency rate (pre-COVID) averaged five years from 2021, was approximately 14.0% versus 11.1% for manufacturing (ABS 2021). The Australia Construction industry dynamics produce the highest percentage of business bankruptcies of all sectors and the most follow-on individual insolvencies. For the 2016-2017 fiscal year, construction entrepreneurs were the most common occupational category for debtors entering business-related bankruptcies (O'Brien et al. 2018). Murray and Harris (2016) found that follow-on individual insolvencies vary within different sectors of the economy. Still, built environment professionals represent the highest proportion of debtors entering business-related personal bankruptcy. Sadly, this group has a top-quartile percentage of domestic partners (O'Brien et al. 2018). For the year 2019-20 (the last pre-pandemic year), 16.8% of construction firms declared a financial loss (ABS 2022b)

## 4. Discussion

Economic spirits are different between expanding and contracting markets, i.e., behaviours change. This paper asserts that negotiating power and mutual dependence imbalances are evident between construction stakeholders, with contractors caught in the middle. Tendering is the start of the process but also the most problematic. The chaotic volume of the construction industry is one root cause of its problems. This generates negative cash flow, an existential threat. This "too hot, too cold, never just right" nature of workflow is shown in Figure 2. So, when practices are rushed (too hot), quality declines, resulting in expensive rework or is too cold; thus, multifactor productivity is suboptimal. Contrast this cashflow with the promise of paying hourly workers weekly and salary staff fortnightly. Also, the industry suffers from the "hurry up and wait" problem, i.e., starting later than initially planned. This means assets are committed but underutilised or not working on the project they are dedicated to. As a result, multifactor industry productivity has stagnated since 1998 (Stevens and Smolders 2023). Portfolio management is critical due to the single-digit net profit margins (Stevens 2022), and any dispute usually results in delayed payment.

Equipment hire yards and material distributors demand payment approximately 30 days after the month of billing. It is common knowledge that the best-paying organisations receive more on-site workers because progress billings are paid timelier. The construction industry has more risk than most. Insiders perceive it as having many uncontrollable factors. One sage contractor stated, "Do not name your company after yourself". You run the risk of hurting your family name. As is well known, bankruptcy is the inability to pay creditors under agreed terms and conditions. This occurs disproportionately higher in construction than in any other Australian industry (ABS 2021a)

Some Australian construction contractors have taken action. They have turned to another business model: the developer contractor. The two largest property companies in Australia, Lendlease and Meriton use this business approach. Others have instituted a multi-step process such as a go/no go bidding process, resource forecasting, dual rate costing, and target negotiated work as a "must do" strategic action. The actions lessen or eliminate the "one way" street of winning work that is low versus an average of both high and low.

## 5. Conclusion

The construction industry is essential to Australia's quality of life but chaotic in its creation process to the frustration of governments, private clients, the public and industry professionals. The sector is a complex behemoth that is highly fragmented with wildly fluctuating turnover locally. The industry leaders understand many of the dynamics shared, which may make for contrary and confronting strategies by each stakeholder to others.

Construction service buyers have significant leverage to enable industry change, particularly public project owners whose annual purchases are substantial. Governments should use investment funds to draw the industry's attention toward solutions utilising legislative and judiciary power. They can set improved systems and rules for the rest of the sector. Technological advances can be used in many ways to help contractors better manage tendering risk. Software developers should respond to this industry quickly in new directions due to the industry's size and profit opportunity.

The mix of pressures on the contractor, such as unpredictable revenue, cost accrual, small profit percentages, and a few sources (projects) of income, makes for complex stakeholder relationships and operational approaches. Additionally, relatively few suppliers control access to critical products with the ability to limit credit and report adverse payment information. As a result, the construction industry has a power imbalance; the largest appears to be centred on the contractor (main and sub). Yet, they are crucial to project success. Contractors are the design installers while stewarding safety, quality and productivity. The frameworks utilised, the type of data presented, and the conclusion appear to apply to other Western economies. Further research should be funded and pursued.

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