

Submission to Productivity Commission's Five pillars of productivity inquiries

Summary

This submission primarily relates to the Productivity Commission's report on *Creating a more dynamic and resilient economy* relating to easing regulatory burdens on the business sector. The Commission has given little attention to more fundamental innovations in how regulations are drafted, maintained, and reported. One promising avenue is the application of regulatory technology (regtech), particularly approaches such as Rules as Code (RaC) and Generative Artificial Intelligence (AI).

It is recommended that:

- The Australian Government establish a program of work to investigate and incorporate Rules as Code and related Generative AI technologies to complement and extend existing whole-of-government regulatory reform initiatives.
- This includes investigating how these technologies can be used to draft, maintain and report on regulations, as well as support more efficient and effective ways to both report against and assess compliance with regulations. This should also include measures to ensure these technologies are implemented in a way that supports ethical, transparent and trustworthy decisions.
- Suggested priority areas for Australian Government agencies action includes regulations related to business registration, financial transactions, building and development approvals, trade and export, food safety and biosecurity, etc.
- It is also proposed that the Productivity Commission focus greater effort in future in identifying area where strengthening regulations could improve economic productivity, and that reviews by the Office of Impact Analysis assess both positive and negative impact to productivity from enhancements to regulations.

Colin Griffith

Principal
Tonic Media

Industry Professor
UTS Data Science Institute

Report: Creating a more dynamic and resilient economy

Easing regulatory burden

In the Commission's report *Creating a more dynamic and resilient economy*, it identifies regulatory reform as one of the two "big levers" to drive productivity growth (the other being tax reform).

The Commission warns that Australia's growing regulatory burden is constraining productivity, and that policymakers and regulators "often give insufficient weight to growth and dynamism when creating and implementing regulation". It calls for:

- Concrete reductions in regulatory burden in priority areas, with measurable targets.
- More rigorous scrutiny of proposed and existing regulations, assessing their impact on growth and dynamism.
- Improved capability within the public service, ensuring officials have the skills and accountability to manage regulatory costs and impacts.

The report notes that while Australia has strong regulatory impact analysis procedures on paper, these are undermined in practice. It is argued that too often, rules are drafted in a prescriptive, rigid, and risk-averse way, with limited consideration of the costs imposed on business and the community relative to the risks addressed.

Beyond Traditional Reform: The Case for Innovation

While the Commission's recommendations have merit, they rely heavily on reshaping existing bureaucratic processes in how regulations are drafted and operated. Similar recommendations have been made by many earlier government reviews: identifying priority areas for action, setting savings targets, striking a better balance between benefits and costs to industry and calling for cultural changes within the regulatory agencies. Despite these earlier efforts, the Commission itself acknowledges that the overall number of regulations and level of regulatory reporting burden has continued to grow.

The Commission has given little attention to more fundamental innovations in how regulations are drafted, maintained, and reported. One promising avenue is the application of regulatory technology (regtech), particularly approaches such as Rules as Code (RaC) and Generative Artificial Intelligence (AI).

Rules as Code: Making Regulation Machine-Readable

"Rules as Code" involves drafting regulations in a form that is simultaneously human- and machine-readable, using formal logic and rule systems. Regulations are expressed in a precise format that can be translated into decision trees or declarative rules, while leaving value judgements to human decision-makers. This approach improves clarity, reduces ambiguity, and enables automation of regulatory reporting where appropriate through machine-readable rules.

Early RaC experiments required regulators to maintain two parallel versions of each rule—one in legal text and another in computer code. This was costly, complex, and relied on using specialist coders. More mature versions now integrate human and machine-readable drafting, reducing complexity and allowing existing legislative drafters to write and maintain RaC with minimal additional training.

Scepticism about RaC often reflects broader distrust of automated decision systems, shaped by the failures of programs like Robodebt. Generally, such scandals are caused not by the underlying technology, but by flawed policy assumptions and unfair rules. Trustworthy RaC systems must therefore rest on sound, fair and ethical policies, and always preserve human oversight where regulations involve discretion or value judgements.

Pilots of RaC have been trialled in Australia and overseas. However funding for pilot programs has been extremely limited, with subsequent adoption being modest. Progress has been hampered by caution from regulators, reluctance among legal drafters to change established methods, and unresolved questions about the roles and responsibilities of regulatory agencies in implementing such systems.

Nonetheless, promising applications are emerging. CSIRO is working with the food sector to automate compliance processes in meat processing, improving food safety while supporting export requirements. It is also developing risk-based assessment tools that, when integrated with RaC, allow for outcome-based

regulation supported by trusted information—for example, replacing costly physical inspections with continuous monitoring using sensor and other data sources. Other pilots have been done in Australia and internationally to assist with public with eligibility criteria for social service and health benefits.

Another benefit is in regulatory drafting itself. RaC can detect inconsistencies between rules, highlight overlaps with related regulations, and support evidence-based compliance design. It can also provide quantitative insights into regulatory growth and patterns, as well as assist with modelling policy changes to regulations.

Generative AI and hybrid approaches

Generative AI, powered by large language models, offers complementary potential. These systems can:

- Summarise complex regulatory texts into accessible plain language.
- Assist with drafting supporting documents such as guidelines or applications.
- Assist applicants and regulators in identifying potential compliance risks.

However, AI has well-documented weaknesses. It can “hallucinate” rules or interpretations that do not exist, producing confident but inaccurate advice. Techniques such as domain-specific fine-tuning and Retrieval-Augmented Generation (RAG) can reduce but not entirely eliminate these risks. This highlights the importance of keeping humans in the loop, having transparent and explainable systems, and requiring expert human review of AI outputs.

Given these limitations, AI should not be seen as a simple stand-alone solution to address regulatory complexity and reporting burden. This is particularly relevant with calls from Treasury and other industry groups to use AI to streamline housing approvals in navigating the complex maze of development and building regulations managed by different government agencies and jurisdictions.

An emerging area of research is combining RaC with Generative AI. RaC provides precise, transparent and logical rule structures that can anchor AI outputs, mitigating hallucinations and improving reliability. In turn, AI can make RaC systems more accessible to diverse users by generating natural-language explanations of machine-readable rules, and supporting decision making with regulations that require value based assessment.

Towards a Smarter Regulatory Future

Australia is again embarking on an effort to reduce regulatory burden. This time, success will require more than improving existing processes—it will benefit from piloting and scaling new technology-enabled approaches in addition to setting long term goals, prioritising effectively and getting the balance right between benefit and risks. It will also require supporting institutional and cultural change in both regulatory agencies and the businesses and individuals they regulate. Technology-enabled approaches alone are not a magic-bullet solution but any ambitious regulatory reform agenda will be weaker without them.

RaC and AI should be tested and operationalised in real-world deployments, particularly in sectors like housing, food, and renewable energy where regulatory burdens are most acute. Demonstrating tangible benefits—clearer rules, reduced compliance costs, and more adaptive and ethical regulation—will be essential to building confidence and trust.

If approached carefully, these technologies can help Australia strike a new balance: regulation that continues to protect society and the environment, while also enabling the innovation and productivity needed for long-term prosperity.

Where regulations can drive productivity improvements

An area of omission in the Commission’s report *Creating a more dynamic and resilient economy*, relates to areas of the economy where the introduction of regulation could improve business dynamism and overall economic productivity. The report appears to assume that regulations in general restricts business dynamism, hence the need for greater effort streamline regulation against what benefits they may provide in terms of community and environmental protection.

There are many examples where strengthening regulations could improve economic productivity, ranging from competition regulations to reduce anti-competitive and unfair behaviour by dominant businesses through to improved beneficial ownership regulations could reduce losses from business fraud and

phoenixing behaviour. Another example, includes the reforms introduced by the NSW Building Commissioner, where additional regulation required builders to provide additional information about the plans, processes and materials used to construct a building, leading to a greater assurance and confidence in a building's quality. This in turn lead to the insurance industry reintroducing Decennial Liability Insurance (DLI), a 10-year insurance product designed to cover serious building defects in Class 2 (apartment) buildings, resulting in lower borrowing costs for builders and improved consumer confidence in buying into new apartment buildings.

It is also possible that attempts to reduce or freeze areas of regulation may have an adverse impact on longer term productivity. One possible example, is the recent Australian Government decision to freeze updates to the National Construction Code (NCC) (Australian building code) until mid-2029, after the finalisation of the 2025 changes. The evidence used to justify this decision appears to be largely antidotal and not based on any detailed evidence based assessment of positive and negative impacts. Advising on such decisions could be a role that could be undertaken by the proposed Office of Impact Analysis.

Recommended action with regulatory reform

It is recommended that:

- The Australian Government establish a program of work to investigate and incorporate Rules as Code and related Generative AI technologies to complement and extend existing whole-of-government regulatory reform initiatives.
- This includes investigating how these technologies can be used to draft, maintain and report on regulations, as well as support more efficient and effective ways to both report against and assess compliance with regulations. This should also include measures to ensure these technologies are implemented in a way that supports ethical, transparent and trustworthy decisions.
- Suggested priority areas for Australian Government agencies action includes regulations related to business registration, financial transactions, building and development approvals, trade and export, food safety and biosecurity, etc.
- It is also proposed that the Productivity Commission focus greater effort in future in identifying area where strengthening regulations could improve economic productivity, and that reviews by the Office of Impact Analysis assess both positive and negative impact to productivity from enhancements to regulations.

Report: Harnessing data and digital technology

The Commission's *Harnessing data and digital technology* report states Artificial Intelligence (AI) could underpin a new wave of productivity growth. The report provide many examples about how business and governments are adopting AI to improve existing operations.

However, the report has not considered the benefits of AI and related data analytics to improve productivity through improving the supply of information and insights to inform economic decision making by suitableness, consumers and governments.

Areas where the Productivity Commission should investigate how AI can improve decision making by those parts of the business sector that generally have higher productivity levels and drive overall productivity improvements across the economy. These parts include businesses that cover one or more the following:

- High growth technology enabled businesses that typically grow at over 10% per annum over three years or more.
- Exporting businesses that compete internationally
- Businesses developing and adopting emerging technologies that create business efficiencies, mitigate risks and drive service improvements.

There is great potential for AI to assist such businesses improve decision making regarding optimal investments to drive growth and productivity, identifying domestic and international market opportunities, and identifying relevant emerging technologies that can support their market growth.

The report also recommends: *Establish lower-cost and more flexible regulatory pathways to expand basic data access for individuals and businesses (Draft recommendation 2.1)*. The Commission states that the Australian Government should support new pathways to allow individuals and businesses to access and share data that relates to them.

There are several areas where improve access to information could support productivity growth through improving the supply of information and insights to inform economic decision making by business, consumers and governments.

This includes:

- Beneficial ownership information about business enetities
- Transparency and trusted information about supply chains relating to information product attributes and conformance