



Will we have to pay a risk premium to build our way out of economic contraction with shovel ready projects

In brief: the NSW and Federal government's desire to expedite construction of public infrastructure to defend against recession has merits but also brings higher than normal risks. This paper explores which projects should be prioritised and why the decision for efficient risk allocations is even more pressing than normal.

Reading time: 8 minutes

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One tool used by governments to combat the prospect of economic recession is to build infrastructure. Infrastructure projects consume professional and trade resources, raw and manufactured materials, and have spin off benefits during construction. These projects enable long lasting economic and productivity improvements as well as social improvements. However, infrastructure projects can take a long time to mobilise as there is normally a long sequence of development activities that need to occur before construction can begin.

The objective of this sequence of activities leading up to construction is to improve certainty of outcomes for the owners and investors by minimizing the potential for, and risk associated with, late changes. The changes are said to be 'late' if they change scope that was previously thought to be defined – either in the design office, the fabrication facilities or on site.

Changing things late in the process can be very expensive. There is the immediate productivity loss associated with late scope changes, but also, especially for complex interconnected systems, late changes can have far reaching cost, schedule and functionality penalties which are not fully appreciated until later in the project.

What if early field mobilisation is a project objective of itself? How can we bring forward field mobilisation?

One mechanism to bring forward construction is to build "at risk". When assets are built at risk, we can effectively shortcut the normal development sequence by agreeing to accept the risk that our initial assumptions on what is needed could be wrong or sub-optimally compliant with the final asset requirements. We assume that the risk of subsequent modifications and associated productivity losses, if any, will be acceptable balanced against the requirement to mobilise early. Governments in particular, may accept this risk when considering the economic and social benefits of starting and completing the project early, against the actual financial outcomes of the project itself. Non-government owners may accept this risk in order to seize a market opening or opportunity.

We don't normally build at risk, because competing imperatives of capital efficiency (value for money) and predictability (accurate cost estimate) take priority over mobilisation. However, when accelerated completion is a primary driver, then building at risk may be the only alternative.

What are the projects that simply should not be constructed at risk?

Building at risk is not always feasible. If the consequence of building at risk is irreversible damage, including environmental damage, community antagonism, or catastrophic economic or commercial failure, then at risk mobilisation should not be undertaken.



What are the projects that could conceivably be constructed at risk?

Projects that are more amenable to being constructed at risk have the following characteristics:

- Low community interface and preferably no new land acquisition required
- Absence of highly sensitive / high value environmental sites
- Low technical complexity (few disciplines and interconnected systems)
- Low technical innovation
- Low requirement for highly specialised skills that are in limited/scarce supply
- Low requirement for specialised imported goods or services that may be at risk of disruption to supply chains (e.g. COVID)

What are the commercial mechanisms used and who can carry the risk?

When determining the commercial mechanism to allocate risk, it is important to first understand the sources of risk. For projects that expedite mobilisation there is significant risk associated with incomplete project definition. After the project starts in the field there could be new discoveries of latent conditions as well as emergent performance requirements and design changes.

Having defined the sources of risk, the next question is who should bear that risk to the maximum benefit of the economy. This question comes back to which party sets the objectives, which party can influence the project risk profile, and which party is best able to price the risk efficiently.

For projects with early field mobilisation, the elevated risk profile is driven by the asset owner's objective to expedite the process. As the owner has made a deliberate decision to increase risk in pursuit of speed, it is appropriate that the owner be willing to cover that risk. When engaging a construction contractor, the owner could either allow the risk to be passed back on a reimbursable basis or ask for a fixed price including risk premium. Both methods have been trialled. The second method is less efficient. Multiple reasons for the loss of efficiency are described below.

Despite their expertise, construction contractors have a surprisingly poor record of pricing the risk premium for high risk projects. The high frequency of commercial failure of large and sophisticated construction organisations is evidence of this problem. The failed risk pricing in high risk transfer contracts has become so prevalent that there are no remaining Australian owned tier one infrastructure contractors. The Australian brands that do remain have become reliant on injections of foreign capital to sustain their operations that have struggled because of a small number of unsuccessful high-risk projects. This mode of operation is unsustainable and will lead to more commercial failures, the consequences of which will fall back to the owners in an inefficient way – lawsuits, project delays, project demobilisation/remobilisation costs etc.

Owners too, particularly governments and their lawyers and financiers, bear a share of responsibility for this market failure in Australia through inappropriate risk allocation and misguided attempts to have construction contractors take all the risk. Of course, the contractors have borne the consequence of their meek acceptance of this risk.

Let's now assume that contractor risk pricing is not faulty. In this case we need to consider which entity is best placed to price the risk. Risk pricing is related to the wealth of the punter and the size of the bet. A rational construction contractor should price the risk more expensively if the risk is a "bet the farm" type risk. Thus, in a rational market, high value, high risk transfer contracts should bring inefficient risk pricing where the creditworthiness and wealth of the contractor is less than that of the owner.

Contractors are poorly positioned to take risk because their revenue stream on any asset is limited to the life of a contract. For most contracts, if the project overruns and they make a loss, there is no prospect of recovering capital either from future revenues from the asset or through enduring favourable tax treatments and depreciation of the more expensive than intended asset. An exception is for PPP style contracts where the contractor takes on an ownership and/or operating position and therefore has some residual methods to mitigate construction phase losses.



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For all of the reasons above, conventional lump sum contracts are of little use in the context of expedited field mobilisation for all but the most simplistic "cookie cutter" type generic project. Rational contractors should be very cautious about engaging in this contract format. Equally, governments who want to expedite construction, have an economic policy and moral obligation to use sensible risk allocation.

The alternative is for the owner to take on the risk

Asset owners and government agencies have historically shown high reluctance to take on construction risks. While understandable, it is also impracticable, especially where government is deliberately increasing the project risk profile by shortcutting the development process in pursuit of other social and economic objectives.

If government is willing to take on the additional risk, it will need to recalibrate its risk tolerance thresholds and project governance structures to be a more active participant in the project delivery process.

Conclusion

Expedited infrastructure projects offer a method to provide employment in an important economic sector and could bring long lasting improvements to society and the broader economy. The time required to develop projects can frustrate the efforts to mobilise the construction workforce in the field.

There are some project types that are more amenable to expedited mobilisation and should be selectively prioritised. When it comes time to engage construction contractors, it is important to realise that the objective of expedited field mobilisation materially changes the risk profile of the project. Works will be delivered at risk of subsequent changes and revision.

We know that contractors have a very mixed record in developing fixed prices for high risk projects. If we persist in using standard high-risk transfer contracting models where the quantum of risk for a project with expedited field mobilisation is even higher than normal, we should expect some very inefficient results.

New approaches are required. It is hoped that governments and owners do not use the COVID crisis as an excuse to continue to impose onerous risk allocation on anxious contractors. These new approaches will necessitate increased willingness of the owners and investors to use appropriate risk allocation, to take on risk higher than would normally be acceptable, and accept the cost of changes as they occur. Governments and asset owners will also require commercial and project governance structures that offer the owners assurance that capital is not unreasonably wasted in the context of delivering construction works at risk.

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