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Pandemics, public-private partnerships (PPPs), and force majeure | COVID-19 expectations and implications

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ABSTRACT

The novel coronavirus (COVID-19) pandemic is placing unprecedented stress on public-private partnerships (PPPs), creating the real possibility of widespread project failures. The disruption and potential collapse of multiple PPP projects will likely trigger force majeure contractual provisions, but the applicability and efficacy of these generic catch-all clauses remain in question. This critical note therefore discusses the implications of force majeure contractual conditions on PPPs in the COVID-19 epoch. We first define the concept of force majeure as it pertains to pandemics. Next, we review a select number of international policies for such events, outlining their key features and glaring shortcomings. Then, we use Nova Scotia's Highway 104 Twinning Project as an illustrative case example of improved force majeure risk management. Finally, after reflecting on the three ironies of construction crisis management, we outline the need for swift trust in PPPs during this current pandemic and conclude by calling for a comprehensive revision of force majeure contract provisions.

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Unprepared and naïve

Unlike other 21st century coronavirus outbreaks (e.g. SARS¹ or MERS²), the novel coronavirus (COVID-19) pandemic is of unprecedented scale and intensity. As of August 26, 2020, SARS-CoV-2 has infected ~24 million people across 188 countries and caused over 820,000 deaths worldwide (JHU 2020). As the COVID-19 pandemic spreads and economies stagnate, the impact of abrupt reductions in economic activity continue to negatively impact the short-term viability of public-private partnerships (PPPs)—i.e. long term infrastructure contracts between the public and private sector “that increase private participation and risk sharing in various stages of the infrastructure project lifecycle, including facility design, construction, financing, operations, and maintenance” (Casady *et al.* 2020, p. 161). Sharp declines in project revenues—especially for public transportation systems, toll roads, and airports—have placed PPP projects under considerable stress, jeopardising their economic and commercial viability. This threat even extends to operators who may have naïvely assumed they would be insulated from such risks by government subsidies and availability payments. However, governments are also facing fiscal challenges due to lost tax revenue, wildly fluctuating currency

values, and frenzied stimulus spending (Inframation 2020). As government treasury revenues continue to decline due to the sudden onset and magnitude of the pandemic, public agencies may be increasingly unable to meet all their contractual obligations. Unless pragmatic, innovative, and strategic solutions are immediately sought to bolster existing PPP projects and programmes, countries run the risk of their PPP markets collapsing and recovery efforts being sabotaged by poor decision making (Baxter 2020).

This critical note therefore intends to discuss the implications of *force majeure* contractual conditions on PPPs in the COVID-19 epoch. However, “rather than simply reflect[ing] and review[ing] what has gone on before” (Chan 2020, p. 5), the intention of this research is to make practical contributions that are better at “anticipating and influencing the type of managerial knowledge needed to deal with coming societal and organizational concerns – what we need to know to enlighten both academic and reflective practitioners” (Corley and Gioia 2011, p. 23). To this effect, our contribution calls for both contractual improvements to force majeure provisions as well as non-contractual means of equitable risk sharing during unprecedented crises like COVID-19. We thus stress the importance of sophisticated anticipatory planning while “encourage[ing] us to

prepare for even our best-laid plans to be wrong” (Oehmen *et al.* 2020, p. 333). In the sections to follow, we begin by discussing the difficulties of defining a force majeure event and allocating risk responsibilities appropriately in PPP contracts. Next, we review a select number of existing force majeure guidelines for PPPs. Then, we use Nova Scotia’s Highway 104 Twinning Project as an illustrative case example of improved force majeure risk management. Finally, after reflecting on the three ironies of construction crisis management—i.e. that (1) effective communication, (2) mutual sensitivity between project members, and (3) collective responsibility and teamwork are less likely at a time when they are most needed, we outline the need for swift trust in PPPs during this current pandemic and conclude by calling for a comprehensive revision of how force majeure provisions are crafted.

Is the COVID-19 pandemic a force majeure event?

In contracts, outside of determining the rights and duties of parties so transactions run smoothly, “the second [most] important task is providing remedies for cases of breach of contract” (Maskow 1992, p. 657). Maskow (1992, p. 657–658) stresses that force majeure “is primarily directed at settling the problems resulting from nonperformance, either by suspension or termination.” Unlike hardship—a legal concept stipulating performance has become more burdensome but not impossible for disadvantaged parties, force majeure is typically reserved for situations in which contractual performance is not possible, at least temporally. However, in many PPP contracts across international jurisdictions, force majeure provisions contain vague and ambiguous legal language describing such events (EPEC 2013). For example, in Clause 1 of the World Bank’s 2017 *Guidance on PPP Contractual Provisions* (WBG 2017), a “Force Majeure Event” in a PPP contract represents any occurrence or combination of occurrences that are beyond reasonable control, unforeseeable or unpreventable/unmanageable, and not a direct result of any breaches in PPP contractual obligations by the private partner. WBG (2017, p. 28) goes on to stipulate the following:

Force Majeure Events include but are not limited to the following circumstances, provided that they meet the criteria set forth in Clause (1) above:

- a. plague, epidemic and natural disaster, such as but not limited to, storm, cyclone, typhoon, hurricane, tornado, blizzard, earthquake, volcanic

activity, landslide, tsunami, flood, lightning, and drought;

- b. fire, explosion, or nuclear, biological or chemical contamination (other than caused by the negligence of the Private Partner, its contractors, or any subcontractor, supplier or vendor);
- c. war (whether declared or not), armed conflict (including but not limited to hostile attack, blockade, military embargo), hostilities, invasion, act of a foreign enemy, act of terrorism, sabotage or piracy [, in each case occurring outside the Country];
- d. civil war, riot rebellion and revolution, military or usurped power, insurrection, civil commotion or disorder, mob violence, act of civil disobedience [in each case occurring outside the Country];
- e. radioactive contamination or ionising radiation [occurring outside the Country]; or
- f. general labour disturbance such as boycotts, strikes and lock-out, go-slow, occupation of factories and premises, excluding similar events which are unique to the PPP Project and specific to the Private Partner or to its sub-contractors [and occurring outside the Country].

Such attempts to create an open-ended, catch-all definition of possible force majeure events often result in vague risk checklists rather than succinct legal definitions while other approaches attempt to construct exhaustive lists of specific events or circumstances. Confronted with this ambiguity, one must ask: does the COVID-19 outbreak constitute a force majeure event? If so, is COVID-19 a plague, an epidemic, a biological event, or “act of God”? In practice, it’s hard to say because the wording of the clause, nature of the contractual obligation, and actual impact of the pandemic all matter (Outerbridge *et al.* 2020). For instance, force majeure events in the United States tend to be narrowly interpreted as severe natural disasters based on the 1891 Supreme Court decision, *Gleeson v. Virginia Midland Railway*. Since pandemics like COVID-19 are an entirely different kind of disaster, U.S. courts would need to go against this precedent (Nocera 2020). Additionally, disruptions stemming from this crisis have been caused by policy reactions to the pandemic, not the pandemic itself. This raises the question as to whether the impacts of COVID-19 are exclusively “natural.” Moreover, even if force majeure clauses in PPP contracts are written carefully to include “circumstances that are out of the control of both foreign and local partners, such as flood, fires, storms, epidemic diseases, war, hostilities and embargo” (Wang *et al.* 2004, p. 241), these provisions are largely contingent on other legal conditions such as negotiation and dispute resolution proceedings,

limitations of liability, indemnity and liquidated damages, governing law, and termination rights (EPEC 2013; Outerbridge *et al.* 2020). Given the uncertainty of this current crisis, the PPP industry should thus be prepared for a tsunami of pandemic lawsuits as contract disputes pile up over broken deals (Nocera 2020; Milligan *et al.* 2020).

Don't worry, the lawyers will sort it out

A catastrophic domino effect of global PPP projects failures may lead many policymakers, practitioners, and academics to conclude that an army of lawyers will simply sort out the impending legal fallout through various conciliation mechanisms. However, what is needed is a pragmatic approach that utilises “incentives and collaboration or partnering arrangements” in order to help “establish a collaborative approach to risk management” (Osipova and Eriksson 2011, p. 1149). A win-win solution might even require partners to set aside the contract in unprecedented times of crisis and seek alternative, innovative remedies based on the pillar of strength of well-structured PPPs: appropriate risk sharing.

Ideally, risk responsibilities are allocated to parties best able to manage them when they occur. Well-structured PPPs will “be sensitive to these potential sources of risk, to be able to anticipate their occurrence, to appreciate their potential impacts on the project objectives and to reduce their future impact through appropriate risk action management strategies” (Berkeley, Humphreys, and Thomas 1991, p. 3). Under normal circumstances, instances of common risk allocation and responsibility are rather unambiguous (e.g. construction risk is typically allocated to the project team while political risk is assumed by the public sector). However, force majeure has always been a grey area in the risk allocation relationship, meaning “[t]ermination and force majeure provisions are issues of great importance in PPP contracts. They are at the heart of the risk-sharing arrangement between the public contracting authority and its private sector partner” (EPEC 2013, p. 9).

Unfortunately, such provisions appear to be more of a cursory afterthought in practice. In many cases, “standard” force majeure definitions and provisions ironically focus on events that negotiating parties can foresee (albeit with a low probability), even though such legal clauses are intended to deal with unexpected events. This is most certainly the case of the COVID-19 pandemic, where numerous warnings of such an event from medical scientists and

epidemiologists were mostly dismissed. As a result, PPP stakeholders tend to focus only on what is necessary to secure a bankable outcome. Therefore, it is no surprise that force majeure scores low on the total critically index and relative risk rank (23rd) of a PPP project's hierarchical levels of risk (Wang *et al.* 2004).

PPP force majeure policies: a sample of existing guidance

Given the lack of importance afforded to force majeure provisions in most PPP contracts, what guidance currently exists for dealing with such events? The following section offers some limited guidance from various international organisations and institutions.³

APMG international

The APMG International PPP Certification Program, an initiative supported by the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the Inter-American Development Bank (IDB), the Islamic Development Bank (IsDB), the World Bank Group (WBG), and partially funded by the Public-Private Infrastructure Advisory Facility (PPIAF), states the following about force majeure in section 9.3 of its PPP guide (AMPG 2020, p. 76):

Force majeure events are a limited set of events which may arise during the term of the PPP contract through no fault of either party. These are best managed by the private partner. They are more severe than relief events, will typically last longer and may result in termination of the PPP contract. They are, by definition, unusual and rare events, and the contract management team should deal with these as exceptions. The focus should be on avoiding termination by the private partner mitigating the effects and, if required, obtaining support from the lenders to defer payment until such time as the project is stable again.

This statement offers several important takeaways. To start, it reinforces that force majeure is reserved for limited, unusual, and rare events. These events are typically severe, last longer than temporary relief situations, and may result in project termination. However, this guidance also stresses that force majeure clauses should avoid termination and instead focus private sector efforts on mitigating such events with support from lenders.

The Inter-American Development Bank (IDB)

Like AMPG (2020), *Bringing PPPs into the Sunlight: Synergies now and Pitfalls Later?*, a book commissioned by the Inter-American Development Bank (IDB), offers similar descriptions of country-specific, force majeure provisions. For instance, the Chilean policy on force majeure states that:

... the works will be carried out at the concessionaire's entire risk, and the concessionaire will provide any necessary disbursements stemming from an unexpected event, force majeure, or any other cause. The Treasury will not be responsible for the consequences derived from the contracts entered into by the concessionaire with contractors or suppliers. However, the Treasury shall pay for damages caused by unexpected events or force majeure if this is established at the procurement stage (Reyes-Tagle and León Gómez, 2018, p. 34).

In this example, the concessionaire is entirely responsible for managing the risk of a force majeure event, unless otherwise specified in the procurement and award documents. In hindsight, this approach offers limited flexibility in a pandemic situation where countries may experience a widespread collapse of PPP projects, thereby devastating national markets. Instead of adhering to clauses drafted from a "play-not-to-lose" mindset, governments should explore collaborative solutions with distressed private sector partners, even if this was not stated in the original contractual terms.

However, if "the inability of the partner to continue with the project due to private or public default on payments or loans, or unavoidable circumstances such as natural disasters or force majeure" is insurmountable (Kim *et al.* 2011, as cited by Siqueira 2018, p. 132), early termination or buyout of a PPP may be warranted. These termination and buyout rights permit private partners to request buyouts under specific circumstances (e.g. force majeure) and compensate the public sector for early termination. While this is not an ideal outcome, it may be warranted in certain situations. Unfortunately, governments will be hard pressed to address these types of requests when confronting the economic fallout of the COVID-19 pandemic. Given these constraints, governments may be better positioned to offer temporary support/stimulus measures so PPP projects can survive. This would be in the interest of both parties.

The Caribbean Development Bank (CDB)

Unlike the previous two policies, the Caribbean Development Bank offers an alternative approach to

force majeure risk allocation. Rather than forcing the private sector to bear all the risk, the Caribbean PPP Toolkit (CDB 2017, p. 346) states:

... the financial consequences resulting from the occurrence of a Force Majeure event should be shared. In the allocation of Force Majeure risk, the parties will need to look at the availability and cost of insurance, the likelihood of the occurrence of Force Majeure events and any mitigation measures which can be undertaken. For example, although the government may be best placed to bear the consequences of some common natural disasters, the concessionaire should be able to obtain insurance for most of this risk. If the government is best able to manage Force Majeure risk, for example, because it is involved with disaster risk management activities, or if the government is the only party able to bear such risk, given its size and the difficulty of obtaining adequate insurance, then allocation to the government may be justified.

CBD (2017, p. 347) goes on to conclude that "both parties would typically have the right to terminate the PPP Contract in the event of a MAGA (Material Adverse Government Action) lasting longer than a defined period of time (generally between 6 to 12 months)." However, in retrospect, suggesting governments can budget "[n]othing ... for very low-probability risks (such as force majeure)" seems rather shortsighted in the current COVID-19 crisis because multiple PPP failures may occur simultaneously (CDB 2017, p. 246). Multiple, simultaneous events might strain government resources, leaving no possibility for mitigation. Determining how to value, monitor, and manage existing contingent liabilities will thus be crucial for post-pandemic economic recovery efforts.

European PPP Expertise Center (EPEC)

Finally, in a PPP, the European PPP Expertise Centre indicates "the occurrence of a force majeure event will raise two important issues: the extent to which the Private Partner is compensated during force majeure events and whether the PPP contract should be terminated if a force majeure event persists for a significant period of time" (EPEC 2013, p. 55). Unlike the other aforementioned force majeure policies, this guidance stresses the importance of providing relief to affected parties. Although such determinations may be contentious when considering project termination and compensation, offering relief to contracting parties in force majeure situations will provide PPP projects with additional resilience against such events.

Glaring omissions, reasons for optimism, and a time of reflection

Taken together, these policies provide some useful guidance for dealing with force majeure events. However, many of them also remain overly generic and in need of improvement in the post-COVID-19 world. Outside of glaring omissions concerning the potential magnitude and duration of force majeure events, there also appear to be clear contradictions in the allocation of risk responsibly. For the most part, the private sector is assumed to be in the best position to manage and mitigate force majeure risk. However, other opinions suggest this risk should be shared (Ng and Loosemore 2007). Amidst the COVID-19 pandemic, the latter is likely preferable and more concrete language will be needed in order to improve the resilience and sustainability of PPP projects.

Reasons for optimism: Nova Scotia's highway 104 twinning project

Fortunately, improvements in force majeure risk management are already appearing in the market. For example, on May 6th, 2020, Nova Scotia's Ministry for Transportation and Infrastructure Renewal finalised an agreement with Dexter Nova Alliance (i.e. Dexter Construction, Nova Construction, and BBGI) to design, build, finance, operate and maintain the 38km twinned section of Highway 104 over a 20-year period.⁴ This CAD \$717.9 million PPP is unique because its project agreement (PA) includes force majeure provisions that specify what would happen in the event of a pandemic. Although the COVID-19 outbreak delayed financial close by one month, construction will still start in June and be completed in 2023. Moody's also suggested the short delay was "credit positive as the Province of Nova Scotia (Aa2, stable) improved the risk allocation in the PA by broadening the definition of force majeure to include an 'Epidemic/Pandemic'", defined as a "communicable disease" or "dangerous disease" under Nova Scotia's Health Protection Act (P3Bulletin 2020).

Because the length and project implications of an epidemic/pandemic are both unknown and uncertain, the province's Minister of Health is ultimately responsible for delineating the beginning and end of such an event. If a pandemic like COVID-19 does cause construction delays, the project company (i.e. Dexter Nova Alliance) will be compensated for all its additional debt service costs. This is a unique feature of the PPP contract because most force majeure events in excess of 180 days allow either party to terminate the

contract with lenders receiving full compensation. In this instance, the pandemic is expected to subside at some point. Therefore, even if such an event lasts only 90 days, the project company will recover additional debt costs incurred during the delay but funds will be "paid until the later of 180 days after the Epidemic/Pandemic Notice Date or the Scheduled Substantial Completion Date as of the Epidemic/Pandemic Notice Date" (P3Bulletin 2020). Finally, pandemics are not included as a force majeure event during PPP operations because the asset is considered critical essential infrastructure. If a pandemic does occur during this phase, the province will continue paying monthly debt service, O&M, and rehabilitation costs but no additional compensation is required (P3Bulletin 2020). Taken together, these carefully crafted provisions in the Highway 104 Twinning Project offer a contemporary illustration of improved force majeure risk management for pandemics like COVID-19. Such an approach could be emulated across the industry, with each PPP individually managing and allocating risk in its respective project phase according to clear, predefined force majeure processes.

However, for many PPPs currently in the project pipeline (as well as the construction and operations phase), the question of appropriate pandemic risk management persists. While "a lot of projects have been able to continue, and some, such as hospitals and schools, have even been accelerated" (Gismondi 2020), others have been delayed, put on hold, or cancelled outright (Inframation 2020). With more project disruptions expected the longer this pandemic continues, PPP counterparties may need to begin exploring non-contractual means of equitable risk sharing to cope with the unprecedented impacts of COVID-19. We reflect more on this shared responsibility below.

Reflecting on shared responsibility in times of crisis: are we repeating the same mistakes?

Moving forward, if shared risk responsibility and accountability is the ideal, how do we turn the COVID-19 crisis into "a way station on the road to a consensually constructed, coordinated system of action" (Taylor and Van Every 2000, p. 275)? That is, through sensemaking, how can these dire global circumstances "serve as a springboard into action" (Weick, Sutcliffe, and Obstfeld 2005, p. 409). Obviously, improved force majeure provisions will help allocate risk responsibility when disaster strikes, but times of crisis also offer "an excellent context for the integration of theory" because "power-configurations, interests, values,

perceptions, bargaining and decision-making processes are highlighted by ... a single well-defined issue" (Loosemore 1998, p. 139). Thus, it is important to reflect on classical theories in organisational studies to see what we can learn about crisis management.

At this point, revisiting Loosemore's (1998) "three ironies" of crisis management in construction projects seems wholly appropriate. These ironies or paradoxes refer to (1) the absence of communication when it is needed, (2) the absence of teamwork when it is needed, and (3) the absence of mutual sensitivity when it is needed. In the current COVID-19 crisis, we all must wonder: are we repeating these same mistakes? Unfortunately, it appears effective communication, mutual sensitivity between project members, and collective responsibility and teamwork all remain less likely at a time when they are most needed. Loosemore (1999) stresses these "in-built defence mechanisms" create conditions which make effective crisis management more difficult, especially at times when immediate responses from all necessary and available resources are required (Hällgren and Wilson 2008). Loosemore and Hughes (2002, p. 22) go further, stating that a construction crisis creates "an ideal arena for conflict and discourage[s] a sense of collective responsibility" because it highlights "conflicts of interests and mis-understandings which would otherwise have remained hidden and, thus, dormant in their effect upon the project." This effect can be attributed to the way in which risks are typically allocated within construction contracts. Because such distributions tend to create an environment of distinct winners and losers, crises often "induce managerial inertia by discouraging collective responsibility, teamwork and effective communication at a time when they are of heightened importance. Paradoxically, this inertia tends to draw an organisation into a self-perpetuating cycle of escalation" (Loosemore and Hughes 2002, p. 33), thereby prolonging the crisis. Although "there exists a rich toolbox of risk management practices to support decision-makers" in PPP projects during such crises, "the economic impact of the current COVID-19 disruption demonstrates ... these tools are not [being] leveraged effectively" (Oehmen *et al.* 2020, p. 330). Why this lack of efficacy? Well, the formal approaches to risk management that are widely used in complex PPP projects (Loosemore, Raftery, and Reilly 2006) "are typically not geared towards providing meaningful responses to high-impact, low-probability events, such as the current COVID-19 pandemic" (Oehmen *et al.* 2020, p. 336). This is because the complexity and obscurity of such risks

make them especially difficult to distribute appropriately (Ng and Loosemore 2007).

Additionally, because pandemics like COVID-19 and other "deep disasters"—e.g. earthquakes, tsunamis, and wars—generally follow the "law of regression to the tail" (Flyvbjerg 2020), they tend to fall into the category of "ignorance" for many public and private organisations, even though their risks are technically well understood, described, and quantified (Oehmen *et al.* 2020). Scholars like Catino (2013) and Chikudate (2015, p. 16) posit this ignorance about the future stems from collective myopia, "a ... condition where the sense-making capabilities among the members in collectivities are limited to their contexts[,] ... [n]one observes their collective behaviours as a whole[, and] ... sense-making of these members is, thus, confined to the limited context of their own concerns in certain organisations or communities." Others like Kruger and Dunning (1999) might suggest the "dual burden of incompetence"—i.e. making the wrong decisions and being unable to recognise these errors—is at play. In general, denial, nostalgia and arrogance from the past (Hamel and Välikangas 2003) tend to hinder our collective ability to catch indirect signals of crises like COVID-19, develop proactive methods of defense, pursue required recovery measures, and record lessons learned (Sahin, Ulubeyli, and Kazaza 2015).

Unfortunately, in the current pandemic, detailed "post-crisis" plans for PPPs may already be obscuring a future that is, fundamentally, no less uncertain than before (Weick and Sutcliffe 2011). Large numbers of PPPs are vulnerable,⁵ and the potential for widespread project failures remain high. Yet, even at this late stage, governments may still be able to avoid catastrophic project and programmatic outcomes "by cutting [the] tail and employing the precautionary principle immediately, at speed, and at scale, with the necessary contingencies in place" (Flyvbjerg 2020, p. 3). However, such actions will require effective communication, mutual sensitivity between PPP project members, and collective responsibility and teamwork based on swift trust—"a unique form of collective perception and relating that is capable of managing issues of vulnerability, uncertainty, risk, and expectations" (Meyerson *et al.* 1996, p. 167). Although there is "an unfortunate tendency in construction projects for the threats to overshadow the opportunities[,] crises like COVID-19 can paradoxically create occasions "for increased cohesion, harmony and efficiency ... by providing an arena within which parties could demonstrate commitment and sensitivity to each other's needs and, thereby, improve inter-personal

relationships” as well as mutual trust (Loosemore and Hughes 2002, p. 31). McLaren and Loosemore (2019, p. 981) stress that “swift trust theory remains the only robust theory of trust formation in temporary teams[,]” and such a non-contractual approach may be what is needed to help PPPs overcome the three ironies of construction crisis management at this time. While collaboration and partnering in PPPs is a lot easier said than done, “trust acts as an important risk management mechanism in projects – especially when there is a high degree of independence and uncertainty” (McLaren and Loosemore 2019, p. 985). Organisations in similar sectors (e.g. government) also tend to trust each other more than those from different sectors (e.g. private sector) in times of deep uncertainty (McLaren and Loosemore 2019). Building trust between them will thus require rather aggressive management of the legitimacy perceptions among multiple stakeholders involved (Walker *et al.* 2017; see also, Casady *et al.* 2020). In force majeure settings, PPP stakeholders should therefore pay particular attention to:

- the financial aspects of the crisis (likely problematic and contentious);
- the emergence of coalitions and maintenance of information flow between them;
- potential information bottlenecks;
- flexibility in managerial strategies;
- tactical behaviour during crisis bargaining; and
- the needs of all interest groups and any changes in interpersonal relationships (Loosemore 1998).

Maintaining neutrality and trust in this force majeure conciliation process through a “creative, flexible, imaginative, engaged, ‘one-day-at-a-time’ state of alertness” (Kutsch *et al.* 2015, as cited by Oehmen *et al.* 2020, p. 333) will ultimately dissipate tensions between opposing interest groups, clarify salient issues, and offer win-win solutions for all parties involved.

Conclusion

Whether we like it or not, the unprecedented scale and intensity of the current COVID-19 pandemic is forcing the public and private sectors to take a hard look at existing force majeure provisions. Not only is the magnitude overwhelming, but the likelihood of potential PPP failures is unparalleled. Yet, due to the sudden onset and indeterminable duration of this outbreak, the private sector may not be able to mitigate

this pandemic’s impacts alone. Governments will likely need to step in and ensure that projects are not unnecessarily terminated. Workouts of PPP deals involving the cooperation of multiple parties should thus be pursued in lieu of termination because restarting a terminated transaction will be much more difficult than resuscitating and restructuring a stalled project.

Additionally, the current realities will require the public and private sector to develop swift trust, pursue project rescue agreements, embrace collaborative responsibility, adopt a stance that strategic projects cannot fail, and engage in innovative yet relational conciliation mechanisms to create win-win outcomes. At this stage of the crisis, one question remains: do we allow the three ironies of construction crisis management to persist and wait for widespread project failures, or do we collaboratively and innovatively seek solutions built on trust and cut this tail risk?

In the long run, comprehensive revisions to force majeure provisions will be needed to adequately prioritise mitigation actions for future pandemics like COVID-19. Resilience thinking does not preclude such anticipatory planning, and Nova Scotia’s Highway 104 Twinning Project already offers an illustrative case example of how such provisions can be improved for the (un)foreseeable future. At the same time, remaining in the sweet spot between complacency and panic will be crucial for the next crisis (Henderson 2020), because even our best-laid plans may be wrong (Oehmen *et al.* 2020). In such situations, employing the precautionary principle at scale and speed to cut the tail (Flyvbjerg 2020) will require non-contractual ways of building swift trust that foster effective communication, mutual sensitivity between project members, and collective responsibility and teamwork. If we simply maintain the status quo and fail to mitigate such an “obvious” risk, there will be a very high price to pay.

Moving forward, there will be a period of social adjustment and the emergence of a new political, economic, and social order. Academics must play a larger collaborative role in this epoch to avert further disasters from happening by first redressing the persistent “imbalance towards proactive crisis management research” (Loosemore 1998, p. 140). Instead of continuing to rely on a “predict and plan” mindset (see, e.g. Van Poucke *et al.* 2019), future research should focus on resilience capabilities (e.g. preparation/prevention, resistance, recovery, and learning) that help us collectively “monitor and react” to crises like COVID-19 (Kutsch *et al.* 2015). Naturally, this will

require academics “to broaden their research focus and engage in more robust critique and analysis of construction systems, as they are realised in practice” (Sherratt *et al.* 2020, p. 1), develop better ways of dealing with crises from a reactive perspective (Loosemore and Hughes 2002), and begin to more systematically synthesise “problems of relevance and rigour” through hybridization—i.e. co-production of knowledge between scholars and practitioners (Harty and Leiringer 2017, p. 400). Finally, sustainability and resilience measures will need to guide the development of new, flexible force majeure policies in future-proofed, People-First PPPs.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes

1. SARS stands for Severe Acute Respiratory Syndrome.
2. MERS stands for Middle East Respiratory Syndrome.
3. This review is not intended to be exhaustive.
4. The project includes CAD \$364.3 million for construction and CAD \$196.4m for operations and maintenance. The federal government is also contributing CAD \$90 million as part of the National Trade Corridors Fund.
5. Wang (2019) recently proposed a new framework for assessing project vulnerability to crises which includes network representations of project systems, analyses of project network topologies, simulations of cascading, unexpected disruptions, and assessments of project vulnerability.

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