



Uninsurability of Mass Market Business Continuity Risks from Viral Pandemics

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I. Executive Summary

The concept of insurance is both ancient and intuitive. People and institutions have for millennia understood that the losses of the unfortunate few could be “pooled” and distributed across the broader population, most of whom have sustained no loss, resulting in tangible benefits to society as a whole. The ability to both pool and redistribute fortuitous loss is the very essence of insurance.

Today, the combined capital resources of the nation’s nearly 3,000 property casualty insurers provide risk protection for approximately \$100 trillion in insurable exposure. Yet, even as the financial consequences of countless risks are insured, some risks—particularly those where the ability to pool and redistribute loss is compromised—defy insurability. The business continuity losses associated with pandemics are one such risk.

Insuring against business continuity losses from pandemics poses a particular set of challenges to insurers that collectively render the risk uninsurable in private insurance markets on a large scale. Potential losses can easily exceed the industry’s capital, surplus and premium resources, posing a systemic risk to the industry and the overall economy. Because virtually all businesses may sustain losses simultaneously and continuously over the span of many months, the ability to spread risk—a function essential to the smooth operation of insurance markets—is severely compromised. Frequency and severity of losses cannot be precisely modeled because of a lack of historical data, creating an insurmountable obstacle to accurate pricing. Further, business income-related pandemic losses are correlated with both financial market losses and other insurance losses, so insurers cannot mitigate pandemic-related business continuity losses through diversification. Consequently, it is unlikely that private insurance markets will be able to offer affordable, widely-available commercial insurance products that insure against business continuity risks from pandemics. Comprehensive government programs designed to directly address large scale business continuity losses from pandemic are necessary to address this risk prospectively and could, over time, potentially encourage the innovation of limited specialized pandemic coverages by private insurers and reinsurers.

II. Why Pandemic Risks Are Inherently Uninsurable

Pandemic risk differs significantly from other types of disasters such as hurricanes, tornados and wildfires. Each of these natural disasters impacts a limited number of policyholders for a limited period of time. The property and business continuity losses associated with hurricanes, for example, are largely a coastal phenomenon with damaging winds typically dissipating over the span of hours. In contrast, business continuity losses arising from pandemics, by definition, have the potential to impact virtually all policyholders, irrespective of location and nearly simultaneously, with losses continuing over the span of months or even years. The resulting accumulation of losses of the many (rather than the few) prevents the pooling and redistribution of those losses, as essentially all policyholders are impacted. Stated differently, pandemic risk cannot be spread, shared or diversified across policyholders. Given the characteristics of pandemic

losses and their financial impact on world economies, insurers and reinsurers will likely have no alternative but to continue to be unable to provide coverage for virtually all future pandemic exposures from insurance policies and reinsurance treaties.¹ These financial and underwriting obstacles underscore the near impossibility of commercially insuring pandemic risk. Indeed, science tells us that pandemic risks are intensifying as globalization and urbanization proceed apace, potentially costing as much as \$23.5 trillion over the next 30 years.²

The insurability of risk traditionally rests upon six criteria, summarized in Figure 1 and listed below:³

- i. A risk must consist of a large number of exposure units so that the losses of the few can be distributed across the entire population of policyholders.
- ii. Losses must be accidental/random and unintentional in nature.
- iii. Losses must be determinable and measurable, enabling accurate and timely adjustment.
- iv. Losses cannot be exceedingly catastrophic or financially ruinous to the risk pool as a whole.
- v. The probability of loss must be calculable, necessary for the proper modeling and pricing of risk.
- vi. The premium charged by insurers to transfer the risk of loss must be economically affordable.

The inability of a risk to meet one or more of these criteria reduces or eliminates its insurability. Pandemic risk violates all six criteria. In technical terms, the violation of these criteria prevents the pooling and redistribution of the losses of the few across the many. In terms of business continuity risk specifically, pandemics produce risks that are undiversifiable, unquantifiable, potentially ruinous, unaffordable and—importantly—intentionally created.

Figure 1 makes clear that the extreme uncertainty associated with pandemic events is inconsistent with several of the basic requirements of insurability. Pandemics are infrequent events of unknown duration and severity. Current estimates of COVID-19's economic impact vary by trillions of dollars, while estimates of potential insured losses vary by tens of billions of dollars. Actuarial models used to estimate claim frequency and severity, establish claim reserves and determine premiums rely heavily on historical data, which is essentially non-existent in the context of pandemics. Because insurers lack even the most basic information necessary to measure and price pandemic risk, pandemics remain largely uninsurable in the private sector.

¹ Insurers may exclude coverage for viral pandemics either by adopting an exclusion endorsement or by not specifically identifying viral pandemics as covered exposures within the “four corners” of the insurance contract. Irrespective of the presence of an exclusion for viral pandemics, the principle that an exposure outside the description of covered risks is excluded still applies.

² Hilsenrath, J. “Global Viral Outbreaks Like Coronavirus, Once Rare, Will Become More Common.” *Wall Street Journal*, 6 March 2020.

³ Rejda, G. and M. McNamara. (2017). *Principles of Risk Management and Insurance*. (13th edition). Pearson.

While the ultimate economic and insured losses for COVID-19 will remain uncertain for many months, if not years, to come, there is universal agreement that those costs are extremely high largely because pandemics threaten virtually all members of the risk pool (i.e., all businesses) simultaneously. As noted in Figure 1, if the probability of a claim is near certainty, the premium charged will be unaffordably high—likely approaching or even exceeding the expected loss itself.

Insurability also requires that the risk be fortuitous in nature. Fortuity implies that losses are accidental or random and unintentional. While pandemics are naturally occurring events, decisions to close millions of businesses and severely restrict the movement of people are intentional and deliberate, resulting in trillions of dollars in economic loss. Insurers can only assume that governments will make similar decisions during future pandemic events. Likewise, decisions by state and local governments on when and how to reopen their economies and by millions of individual business owners and customers about when and how to reengage in economic activity are also deliberate. These deliberate decisions account for the majority of economic losses arising from the COVID-19 pandemic.

III. **Systemic Risk, Insurance and COVID-19**

Beyond these six traditional criteria, the COVID-19 pandemic has made apparent two additional risk-related considerations. First, pandemic risk is systemic in nature, meaning that its destabilizing impacts extend throughout the entire economy and cannot be diversified away through private insurance. The magnitude of COVID-19 economic loss is so large that any meaningful commitment of insurance industry capital would be solvency-threatening to insurers, but insignificant to the problem of remediating business interruption losses. Second, legislative efforts to require insurers to retroactively cover excluded business continuity losses represent a systemic risk for the U.S. property casualty insurance industry. The same is true for legislation that would compel insurers to cover these same risks prospectively. Because such legislation, whether written on a retrospective or prospective basis, threatens to exhaust the industry's \$800 billion capital base within the span of months, mass insurer insolvencies would be inevitable, likely culminating in the financial collapse of the property casualty industry.

Importantly, only a fraction (significantly less than half) of the industry's total capital is associated with insurers that actually offer business interruption coverage, with the majority of capital backing risks underwritten by insurers protecting homes, vehicles, injured workers and countless liability exposures. This fact suggests that the amount of capital available to finance pandemic-driven business continuity losses is far less than commonly assumed and that losses would become instantaneously destabilizing to commercial insurers and the overall economy.

Property casualty insurers currently underwrite an estimated \$100 trillion in potential loss exposure throughout the U.S. economy, a sum equal to 4.5 times U.S. gross domestic product (GDP), assuring that the economic shockwaves of this collapse would be instantaneously transmitted to the broader U.S. economy, amplifying the multi-trillion dollar systemic shocks already present.

IV. **Pandemics, Business Continuity Losses and Insurer Solvency**

Global COVID-19 economic losses are estimated at some \$9 trillion.⁴ In the United States, GDP could shrink by 38 percent during the second quarter of 2020 according to the Congressional Budget Office, equating to more than \$8 trillion in lost economic output on an annualized basis.⁵ Business continuity losses account for a substantial share of that loss. The American Property Casualty Insurance Association (APCIA) estimates that one month's business continuity losses related to COVID-19 for all United States businesses (without regard to whether the business purchased business interruption coverage, as has been proposed in some states) totals approximately \$1 trillion per month, which exceeds the current total property casualty industry capital and surplus of approximately \$800 billion. The industry's surplus represents capital insurers are legally required to hold to ensure funds are available to pay current and future claims. Limiting this analysis to businesses with fewer than 100 employees produces monthly business continuity losses of \$255 billion to \$431 billion per month—and \$393 billion to \$668 billion per month for businesses with fewer than 500 employees (Figure 2). Stated differently, the \$800 billion capital and surplus that the industry has accumulated over the course of more than a century could be exhausted in a matter of weeks.

Even if business continuity losses are limited to small businesses (i.e., those with fewer than 100 employees) that actually purchase insurance coverage for business interruption, estimated losses are in the range of \$52 billion to \$223 billion per month, implying the exhaustion of the industry's capital and surplus in as few as 3.6 months.

Potential business continuity losses arising from COVID-19 not only threaten to rapidly deplete the industry's capital and surplus—but would dwarf premium collected. Monthly business continuity losses of \$1 trillion dollars, for example, are more than 200 times the \$4.5 billion in monthly premium collected for all commercial property lines (fire, allied lines, and commercial multiple peril non-liability). Note that premiums for business interruption coverage, which are not specifically reported, are only a fraction of this overall commercial property premium amount. Hence the true multiple is much larger.

The massive gap between potential business continuity losses on the one hand and the industry's capital base and premium income on the other, again underscores the uninsurable nature of pandemic risks and demonstrates why these risks are not included in, and are often additionally explicitly excluded from, in-force commercial property policies providing business interruption coverage. Providing private market insurance coverage for pandemic-caused business continuity losses would require multiple times the capital and surplus of the entire property casualty insurance industry. Given these numbers, no private insurance coverage could be provided on an affordable basis for the mass market.

Any fair assessment of the insurability of business continuity losses from viral pandemics for the mass market must also take into account that insurers depend on the strength of the broader

⁴ International Monetary Fund. "The Great Lockdown: Worst Economic Downturn Since the Great Depression, 14 April 2020, accessed at: <https://blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/>.

⁵ Congressional Budget Office. *Interim Economic Projections for 2020 and 2021*, (May 2020), accessed at: www.cbo.gov/publication/56351.

economy to pay claims of all kinds. COVID-19's impact on United States property casualty insurers includes expected (non-business continuity) insured losses of \$40 billion to \$80 billion.

The experience of COVID-19 also reveals that the economic shocks associated with pandemics are highly correlated with declines in asset prices. Financial market volatility amid the pandemic led to an estimated \$87 billion loss in property casualty surplus from investment declines during the first quarter of 2020. Gross premium income is also expected to decrease as United States GDP plunges sharply in the second quarter of the year.

V. **Conclusion**

Business continuity losses arising from widespread viral risks represent an uninsurable risk for the private property casualty insurance industry. The magnitude of potential losses exceeds the claims paying resources of the industry while a lack of historical data impairs the ability of insurers to precisely model the frequency and severity of losses and determine premiums. This problem is exacerbated by the fact that the majority of business continuity losses are driven not by random events, but by the unprecedented and deliberate actions of thousands of public policymakers. The consequences of these actions are not insurable and potentially pose a systemic risk to the industry as a whole and the economy broadly.

The experience of COVID-19 suggests that apart from highly specialized, niche products, it is unlikely that business continuity coverage for pandemic risks can be provided to the mass market by private insurers. The ability to pool and redistribute losses within the private insurance sector is severely compromised. Consequently, any solution involving the financing of pandemic-driven business continuity losses will necessarily require widespread government protection, which could, in turn, encourage increased innovation of specialized products by private insurers and reinsurers.

Figure 1. Pandemic - An Insurable Risk?

Requirements of an Insurable Risk	Requirement Met? Yes/No
1. Large number of exposure units	No. While millions of individual businesses suffered business continuity losses arising from the COVID-19 pandemic, the pandemic's effects were global in scale and nearly simultaneous in scope, effectively reducing the number of exposure units to one—the business sector collectively.
2. Accidental/Random and unintentional loss	No. Pandemics are natural phenomena but the decisions by thousands of policymakers at all levels of government to close millions of businesses and restrict the movement of people was intentional.
3. Determinable and measurable loss	No. For insurers to determine losses, the scale and scope of losses for any given risk must be estimable. Business continuity losses from COVID-19, estimates for which remain highly uncertain and range into the trillions of dollars, are indeterminable due to their dependence on decisions made by thousands of policymakers at all levels of government, the pace at which consumers and businesses reengage in the economy and epidemiological developments.
4. No (ruinous) catastrophic loss	No. Unlike traditional catastrophe risks, pandemics by definition threaten all or most of the members of the risk pool simultaneously. The rapid aggregation of losses is destabilizing and potentially ruinous, threatening the solvency of individual insurers and the industry as a whole.
5. Calculable chance of loss	No. Pandemics have occurred throughout history but the policy response to COVID-19 is without precedent. Insurers traditionally rely on historical loss information and trends to estimate the frequency and severity (cost) for risks they insure. No such historical data exists for the policy response associated with the COVID-19 pandemic, hence premiums cannot be determined.
6. Economically feasible premium	No. Because pandemics by definition threaten all or most of the members of the risk pool simultaneously, the probability of loss is close to certainty. The high probability of loss combined with high claim severities necessarily lead to premiums that can approach or even exceed the cost of the claim itself.

Figure 2. Potential Monthly Business Interruption Losses for Small and Small-to-Medium-Size Enterprises



Sources: APCIA using publicly available data sources including Bureau of Labor Statistics, Insurance Services (Verisk Analytics, Inc.), Houston Chronicle, S&P Global Market Intelligence, and other published reports.