

The Efficacy of Safety–Critical Protections: The Subtle Connection Between Risk, a Hazardous Technology, COVID-19, and Multi-Lateral Trade Agreements

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Negative Externality (ECONOMICS)

Negative externalities exist when individuals bear a portion of the cost associated with a good's production without having any influence over the related production decisions.

—*Encyclopedia Britannica*

As we begin to comprehend the extent of economic carnage brought by COVID-19, we should better appreciate the value of protective systems put in place to mitigate the consequences of a pandemic. In the coming months and years, the United States will surely re-assess the design and governance of its health emergency response system to better protect us. The multi-trillion dollar cost of COVID-19 will surely stand as the most extensive negative externality the world economy has ever experienced.

Catastrophic externalities are nothing new, in cooperative society. Often associated with hazardous technologies such as chemical processing facilities and nuclear power plants. Here, government regulated protective systems are designed to overlay hazardous production technologies and protect the public from dire consequences, such as explosions and pollution releases, by interrupting potentially disastrous event chains. Protective systems

are typically a complex network of people and technologies jointly owned and managed by private enterprise and government. These systems act as circuit breakers following detection of (an often-seemingly innocuous) initiating event, quashing what might otherwise exceed to enormous cost to the public.

The efficacy of protection is regulated by government. Regulations, enforceable as law, ensure that compliant enterprises will operate hazardous technologies so as to pose an acceptable level of risk to the public. Here, public risk is popularly understood to be the magnitude (in dollars) and likelihood of occurrence of a negative externality (*i.e.*, *how likely is the public to pay a big bill when enterprise production decisions go badly*). Routine commerce dictates that we never live risk-free. And, it often happens that a potentially devastating initiating event is considered low risk if its likelihood of occurrence is deemed vanishingly small.

It is important to understand that the efficacy of protection is not simply a matter of designing comprehensive and reliable circuit breakers. A circuit breaker's protective benefit is reactive ... responding only to the presence of an initiating event and then limiting any ensuing economic consequence. And, while regulators seek to ensure that appropriate circuit breakers are in place, risk is also influenced by the likelihood of occurrence of initiating events. Here, regulators are proactive and seek to spread out the arrival of future initiating events so that they occur infrequently. Hence, improved efficacy is achieved by limiting both the magnitude of externalities and their frequency of occurrence.

We are, today, facing an unprecedented negative externality with COVID-19. Here, a hazardous production technology, China's poorly maintained and largely unregulated food supply chain, became the source of a zoonotic initiating event. The world has discovered that its protective systems, in particular the United State health emergency response infrastructure, are ill prepared for this global pandemic. The risk has exceeded our preparedness

to manage it.

Our coming discussions of pandemic preparedness should not be limited to circuit breakers. Of equal concern is how we, as a nation, can affect the arrival of future zoonotic events. Historically, the United States has been aggressive with its domestic regulatory oversight of food preparation and the food supply chain. Foodborne illnesses in the United States are relatively uncommon, and zoonotic events originating in its food supply chain are virtually unheard of. Yet, zoonotic events originating from risky foreign food production practices has, for decades, impinged on health and safety domestically (SARS, BSE, H1N1). While the United States has no direct regulatory oversight authority beyond its borders, we are not powerless to affect better production practices and mitigate risk.

Trade agreements offer the only practical leverage available to bring hazardous production operations up to acceptable risk profiles, as we look beyond our borders. Discussions of the “real cost” of trade must include the risk associated with profound negative externalities imposed events such as COVID-19. Bilateral trade agreements, of course, carry far less clout than strong multilateral agreements. Until cooperative society grasps that perfect economic efficiency is not the Holy Grail of trade agreements and that regulatory oversight is not a dirty word, we will suffer reduced efficacy in our protections from tragic externalities. A hard lesson learned from COVID-19 should be that, in trade negotiations with China, the cost of doing business will include what we expect to pay as a consequence of their risky production practices. Scientists have routinely warned of the zoonotic hazard presented by China’s “wet markets” since 2006. The starting point for a trade agreement should be verifiable regulation of wet markets and the hazard prone supply chains feeding them.

As President Trump engages in provocative accusations and blame casting, referring to COVID-19 as the “Chinese Virus”, we should be reminded that the United States has

historically ignored offshore hazardous production operations. So long as the resulting costs of negative externalities have been absorbed by someone else (*e.g.*, the 1984 Bhopal Disaster), we have regarded foreign-public safety as being beyond our concern. COVID-19 should be the wakeup call. A catastrophically expensive externality is now on our tab, and we did nothing *a priori* to address the risk ... even though multiple zoonotic events have arisen from this same source over the past two decades.

It is important for Americans to understand that our trade agreements are the result of our political process. Politicians speak and negotiate as our proxies. We should expect our politicians to act in our best economic interests which entail more than bilateral demands for market access and intellectual property protections and include the expected cost of externalities. To this end, we must all assume responsibility by electing politicians who are not simply reactive crisis managers, but are also policy negotiators who are proactively protecting the public through trade agreements designed to eliminate initiating events like COVID-19.