1

The United States federal government should:

- substantially increase production and global distribution of the COVID-19 Vaccine, specifically providing all necessary vaccines to India and South Africa, and

- cooperate with allies to achieve increased production and global distribution of the COVID-19 Vaccine.

The US should take the lead – otherwise, China and Russia will use vaccine diplomacy to advance foreign policy goals. The counterplan alone solves and reinvigorates US leadership.

Gayle et al 21. [(HELENE GAYLE is President and CEO of the Chicago Community Trust and has served in global health and development roles with CARE, the Centers for Disease Control and Prevention, and the Bill & Melinda Gates Foundation. GORDON LaFORGE is a Senior Researcher at Princeton University and a lecturer at Arizona State University's Thunderbird School of Global Management. ANNE-MARIE SLAUGHTER is CEO of New America and former Director of Policy Planning at the U.S. State Department) "America Can—and Should—Vaccinate the World," Foreign Affairs, March 19, 2021. https://www.foreignaffairs.com/articles/united-states/2021-03-19/america-can-and-should-vaccinate-world] TDI

These initiatives come not a moment too soon. In tackling the **worst global crisis** of a lifetime, the **United States has so far been upstaged**. Russia and China have aggressively marketed and distributed their vaccines to foreign countries, **largely to advance foreign policy goals**. Russia is using the jab to bolster its image and investment prospects and to drive a wedge between EU countries. China is donating doses to gain leverage in territorial disputes and expand its influence under the Belt and Road Initiative. Both Moscow and Beijing have **moved to undercut the United States in its own backyard by supplying vaccines to Latin America.** The Biden administration is right to want to take the lead in vaccinating the world, for a host of reasons both self-interested and altruistic. But it should not fall into the trap of trying to beat Russia and China at their own game—handing out vaccines to specific countries based on their geostrategic importance and the amount of attention they are receiving from rival powers. Rather, **Biden should pursue** abroad the sort of "all in" unity approach that he has proclaimed at home. His administration should focus less on strategic advantage than on vaccinating the largest number of people worldwide in the shortest amount of time. In so doing, the United States would **concentrate on what the world's peoples have in common—susceptibility to this and many other viruses**—regardless of the nature of their governments. ALL IN AND ALL OUT The United States has successfully mobilized its own and international resources to respond to regional crises in the past. In 2003, President George W. Bush started the U.S. President's Emergency Plan for AIDS Relief, the largest global health program focused on a single disease in history. PEPFAR brought together U.S. agencies, private companies, and local civil society groups to help sub-Saharan Africa and Southeast Asia get the AIDS crisis under control, saving millions of lives. In 2004, a tsunami in the Indian Ocean caused more than 220,000 deaths and billions in damage, and the United States led an urgent, similarly inclusive humanitarian relief and recovery effort that rescued victims, hastened reconstruction, and built lasting goodwill in South and Southeast Asia. Biden can improve on Bush's precedent by going global, and he has already taken steps toward doing so. Under President Donald Trump, the United States refused to participate in the COVID-19 Vaccine Global Access (COVAX) Facility, an international partnership that aims to guarantee COVID-19 vaccine access for the entire world. The Biden administration reversed this stance immediately and contributed $4 billion, making the United States the largest donor to the effort. Still, even if COVAX meets the ambitious target of delivering two billion doses to developing nations by the end of 2021, it will be able to vaccinate only 20 percent of those countries' populations. Just imagine, however, what could happen if Washington were to treat COVID-19 as the equivalent of the enemy in a world war or the pandemic as a global version of the regional AIDS and Ebola epidemics of years past. Imagine, in other words, what all-out mobilization would look like if the **United States treated the COVID-19 pandemic**

like the global threat that it is. The Biden administration is right to want to take the lead in vaccinating the world. Washington would lead a multilateral, whole-of-society effort to help COVAX vaccinate the world. The government would activate the military and call upon allies in the G-7 and NATO for a major assistance operation that speeds the flow of vaccine supplies and strengthens delivery systems. As it has pledged to do in the Quad summit deal, the U.S. government would use the State Department, U.S. Agency for International Development (USAID), Centers for Disease Control and Prevention (CDC), and other civilian agencies and development programs to help countries with their national vaccination programs. And it would enlist companies, nonprofits, and civil society organizations to help increase vaccine production, raise funding, and provide technical assistance to foreign counterparts. The U.S. government should undertake exactly such an effort, right now: an all-out response for an all-in global vaccination campaign. Such a campaign would advance U.S. economic and security interests and **reboot American global leadership** after years of decline. Rather than perpetuate the transactional, friend-by-friend vaccine diplomacy of China and Russia, a U.S.-led vaccine effort could **invigorate a new multilateralism** that is more pragmatic and inclusive than the twentieth-century international order and better adapted to tackling twenty-first-century global threats. Washington would do well to remember that if COVID-19 does come back, authoritarian governments will be able to lock down their populations more quickly and effectively than democracies will, so even in competitive terms, America's best bet really is to eradicate the novel coronavirus. The United States has a momentous **opportunity to prove both that democracy can deliver** and that American ideals truly are universal. By offering a model of global cooperation that draws on a far wider range of resources than any one government can provide, the United States can lead a vaccine effort that builds on the strengths of its **open and pluralist society.** President Biden would demonstrate unequivocally that the United States is not only "back" but looking—and **leading—far ahead.**

Maintenance of the ILO is key to reduce a host of existential threats – establishes great-power peace.

Brands 18. [(Hal Brands is a Henry Kissinger Distinguished Professor at Johns Hopkins University's School of Advanced International Studies, Scholar at the American Enterprise Institute. "America's Global Order Is Worth Fighting For, Bloomberg Opinion, Politics & Policy," August 14, 2018, Bloomberg. https://www.bloomberg.com/opinion/articles/2018-08-14/america-s-global-order-is-worth-fighting-for] TDI

The first argument is **easily disposed** of. Yes, the postwar world has been **thoroughly imperfect**, featuring nuclear arms races, genocides, widespread poverty and other scourges. But the world has **always been** imperfect, and by **any** meaningful **comparison**, the last **seven decades** have been a **veritable golden age**. The **liberal international** economic order has led to an **explosion** of **domestic** and **global prosperity**: According to World Bank data, both U.S. and global **per capita** income have increased **roughly three-fold** (in inflation-adjusted terms) since 1960, with U.S. gross domestic product increasing nearly six-fold. The U.S. **system** of alliances and forward military deployments has **contributed critically** to the **longest period** of **great-power peace** in modern history, and **the incidence of war** and conquest **more broadly** have dropped **dramatically**. The number of **democracies** in the world has **increased** from perhaps a dozen during World War II to well over 100 today; **respect for basic** human rights has also reached **impressive levels**. As a **bevy of scholarship** has shown, the policies that the U.S. has **pursued** and the **international order** it has built have contributed **enormously** and **directly** to these **outcomes**. If the **liberal international order** can't be considered a **smashing success**, no **international order** could be. The second critique is also overstated. It is true that Washington, like all great powers throughout history, has been willing to bend the rules to get its way. It is hard to reconcile Cold War-era interventions in Guatemala, Chile and other countries with a professed solicitude for human rights and democracy; the Iraq War of 2003 is only one instance in which the U.S. brushed aside the concerns of international organizations such as the U.N. Security Council. Likewise, when the U.S. government determined that the Bretton Woods system of monetary relations no longer suited its interests in the 1970s, it terminated that scheme and insisted on creating a more favorable one. But again, the proper standard here is not sainthood but reality. And the U.S. has **generally** enlisted its power in the **service** of **universal values** such as **democracy** and **human rights**; it has, more often than not, promoted **a positive-sum** international system in which **like-minded** nations can be **secure** and **wealthy**. This goes back to the very beginning of the liberal order: Washington did not seek to hold its defeated adversaries in subjugation after World War II; it rebuilt Japan and western Germany into

thriving, democratic allies that became fierce economic competitors to the U.S. The U.S. has taken this approach not simply because it wanted to do good in the world — powerful as this motivation is — but because of a hard-headed desire to do good for itself. In an interdependent global environment, American officials have long calculated, the U.S. cannot divorce its own well-being from that of the wider world. And in contrast to how other great powers — Imperial Japan, for instance, or the Soviet Union — ruled their spheres of influence, American behavior has been positively enlightened. It is this relatively benign behavior that has convinced so many countries to tolerate American leadership — and it is the emergence of a darker form of U.S. hegemony under the Trump administration that so profoundly worries them today. As for the third critique, the premise is right, but the **conclusion** can easily **go too far**. It is always **dangerous** to become **so enraptured** by past **achievements** that one **loses sight** of the **need for adaptation** in **the future**. This is particularly true today, because the strength of the liberal order is being tested from within and without, by issues ranging from unequal burden-sharing among American allies to the ambivalence of the American people themselves. There is **little evidence** to suggest, however, that either American power or **the liberal order** it supports have **eroded** so **dramatically** that **Washington**'s postwar project cannot be **sustained**. Quite the contrary — the U.S. is likely to remain the **world's strongest power** for **decades to come**.

2

Biotech industry strong now.

Cancherini et al. 4/30 [(Laura, Engagement Manager @ McKinsey & Company, Joseph Lydon, Associate Partner @ McKinsey & Company, Jorge Santos Da Silva, Senior Partner at McKinsey & Company, and Alexandra Zemp, Partner at McKinsey & Company), "What's ahead for biotech: Another wave or low tide?", McKinsey & Company, 4-30-2021, https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/whats-ahead-for-biotech-another-wave-or-low-tide] TDI

As the pandemic spread across the globe in early 2020, biotech leaders were initially pessimistic, reassessing their cash position and financing constraints. When McKinsey and BioCentury interviewed representatives from 106 biotech companies in May 2020,4 half of those interviewed were expecting delays in financing, and about 80 percent were tight on cash for the next two years and considering trade-offs such as deferring IPOs and acquisitions. Executives feared that valuations would decline because of lower revenue projections and concerns about clinical-trial delays, salesforce-effectiveness gaps, and other operational issues.

Belying this downbeat mood, , biotech has in fact had one of its best years so far. By January 2021, venture capitalists had invested some 60 percent more than they had in January 2020, with more than $3 billion invested worldwide in January 2021 alone.5 IPO activity grew strongly: there were 19 more closures than in the same period in 2020, with an average of $150 million per raise, 17 percent more than in 2020. Other deals have also had a bumper start to 2021, with the average deal size reaching more than $500 million, up by more than 66 percent on the 2020 average (Exhibit 3).6

What about SPACs?

The analysis above does not include special-purpose acquisition companies (SPACs), which have recently become significant in IPOs in several industries. Some biotech investors we interviewed believe that SPACs represent a route to an IPO. How SPACs will evolve remains to be seen, but biotechs may be part of their story.

Fundamentals continue strong

When we asked executives and investors why the biotech sector had stayed so resilient during the worst economic crisis in decades, they cited innovation as the main reason. The number of assets transitioning to clinical phases is still rising, and further waves of innovation are on the horizon, driven by the convergence of biological and technological advances.

In the present day, many biotechs, along with the wider pharmaceutical industry, are taking steps to address the COVID-19 pandemic. Together, biotechs and pharma companies have more than 250 vaccine candidates in their pipelines, along with a similar number of therapeutics. What's more, the crisis has shone a spotlight on pharma as the public seeks to understand the roadblocks involved in delivering a vaccine at speed and the measures needed to maintain safety and efficacy standards. To that extent, the world has been living through a time of mass education in science research and development.

Biotech has also benefited from its innate financial resilience. Healthcare as a whole is less dependent on economic cycles than most other industries. Biotech is an innovator, actively identifying and addressing patients' unmet needs. In addition, biotechs' top-line revenues have been less affected by lockdowns than is the case in most other industries.

Another factor acting in the sector's favor is that larger pharmaceutical companies still rely on biotechs as a source of innovation. With the top dozen pharma companies having more than $170 billion in excess reserves that could be available for spending on M&A, the prospects for further financing and deal making look promising.

For these and other reasons, many investors regard biotech as a safe haven. One interviewee felt it had benefited from a halo effect during the pandemic.

More innovation on the horizon

The investors and executives we interviewed agreed that biotech innovation continues to increase in quality and quantity despite the macroeconomic environment. Evidence can be seen in the accelerating pace of assets transitioning across the development lifecycle. When we tracked the number of assets transitioning to Phase I, Phase II, and Phase III clinical trials, we found that Phase I and Phase II assets have transitioned 50 percent faster since 2018 than between 2013 and 2018, whereas Phase III assets have maintained much the same pace. There could be many reasons for this, but it is worth noting that biotechs with Phase I and Phase II assets as their lead assets have accounted for more than half of biotech IPOs. Having an early IPO gives a biotech earlier access to capital and leaves it with more scope to concentrate on science.

Looking forward, the combination of advances in biological science and accelerating developments in technology and artificial intelligence has the potential to take innovation to a new level. A recent report from the McKinsey Global Institute analyzed the profound economic and social impact of biological innovation and found that biomolecules, biosystems, biomachines, and biocomputing could collectively produce up to 60 percent of the physical inputs to the global economy. The applications of this "Bio Revolution" range from agriculture (such as the production of nonanimal meat) to energy and materials, and from consumer goods (such as multi-omics tailored diets) to a multitude of health applications.

IPR key to innovation.

Bacchus 20 [(James, member of the Herbert A. Stiefel Center for Trade Policy Studies, the Distinguished University Professor of Global Affairs and director of the Center for Global Economic and Environmental Opportunity at the University of Central Florida. He was a founding judge and was twice the chairman—the chief judge—of the highest court of world trade, the Appellate Body of the World Trade Organization in Geneva, Switzerland) "An Unnecessary Proposal: A WTO Waiver of Intellectual Property Rights for COVID-19 Vaccines," Cato Institute, 12-16-2020, https://www.cato.org/free-trade-bulletin/unnecessary-proposal-wto-waiver-intellectual-property-rights-covid-19-vaccines] TDI

At the heart of this emerging trade debate is a belief by many people worldwide that all medicines should be "global public goods." There is little room in such a belief for consideration of any rights to IP. As one group of United Nations human rights experts expressed: "There is no room for … profitability in decision-making about access to vaccines, essential tests and treatments, and all other medical goods,

services and supplies that are at the heart of the right to the highest attainable standard of health for all."16

This view is myopic. Subordinating IP rights temporarily to pressing public needs during a pandemic or other global health emergency is one thing. Eliminating any consideration of "profitability" in all policymaking relating to "access to vaccines, essential tests and treatments, and all other medical goods, services and supplies" is quite another.17 To be sure, there is a superficial moral appeal in such a view. But does this moral appeal hold up if such a "human rights" approach does not result in meeting those urgent public needs?

With the belief that medicines should be "public goods," there is literally no support in some quarters for the application of the WTO TRIPS Agreement to IP rights in medicines. Any protection of the IP rights in such goods is viewed as a violation of human rights and of the overall public interest. This view, though, does not reflect the practical reality of a world in which **many medicines would simply not exist if it were not for the existence of IP rights and the protections they are afforded.**

Technically, IP rights are exceptions to free trade. A long-standing general discussion in the WTO has been about when these exceptions to free trade should be allowed and how far they should be extended. The continuing debate over IP rights in medicines is only the most emotional part of this overall conversation. Because developed countries have, historically, been the principal sources of IP rights, this lengthy WTO dispute has largely been between developed countries trying to uphold IP rights and developing countries trying to limit them. The debate over the discovery and the distribution of vaccines for COVID-19 is but the latest global occasion for this ongoing discussion.

The primary justification for granting and protecting IP rights is that they are incentives for innovation, which is the main source for long-term economic growth and enhancements in the quality of human life. IP rights spark innovation by "enabling innovators to capture enough of the benefits of their own innovative activity to justify taking considerable risks."18 The knowledge from innovations inspired by IP rights spills over to inspire other innovations. The protection of IP rights promotes the diffusion, domestically and internationally, of innovative technologies and new know-how. Historically, the principal factors of production have been land, labor, and capital. In the new pandemic world, perhaps an even more vital factor is the creation of knowledge, which adds enormously to "the wealth of nations." Digital and other economic growth in the 21st century is increasingly ideas-based and knowledge intensive. Without IP rights as incentives, there would be less new knowledge and thus less innovation.

Biopharmaceutical innovation is key to prevent future pandemics and bioterror. Marjanovic and Feijao 20

[(Sonja Marjanovic, Ph.D., Judge Business School, University of Cambridge. Carolina Feijao, Ph.D. in biochemistry, University of Cambridge; M.Sc. in quantitative biology, Imperial College London; B.Sc. in biology, University of Lisbon.) "How to Best Enable Pharma Innovation Beyond the COVID-19 Crisis," RAND Corporation, 05-2020, https://www.rand.org/pubs/perspectives/PEA407-1.html] TDI

As key actors in the healthcare innovation landscape, pharmaceutical and life sciences companies have been called on to develop medicines, vaccines and diagnostics for pressing public health challenges. The COVID-19 crisis is one such challenge, but there are many others. For example, MERS, SARS, Ebola, Zika and avian and swine flu are also infectious diseases that represent public health threats. Infectious

agents such as anthrax, smallpox and tularemia could present threats in a bioterrorism context.1 The general threat to public health that is posed by antimicrobial resistance is also well-recognised as an area in need of pharmaceutical innovation. Innovating in response to these challenges does not always align well with pharmaceutical industry commercial models, shareholder expectations and competition within the industry. However, the expertise, networks and infrastructure that industry has within its reach, as well as public expectations and the moral imperative, make pharmaceutical companies and the wider life sciences sector an indispensable partner in the search for solutions that save lives. This perspective argues for the need to establish more sustainable and scalable ways of incentivising pharmaceutical innovation in response to infectious disease threats to public health. It considers both past and current examples of efforts to mobilise pharmaceutical innovation in high commercial risk areas, including in the context of current efforts to respond to the COVID-19 pandemic. In global pandemic crises like COVID-19, the urgency and scale of the crisis – as well as the spotlight placed on pharmaceutical companies – mean that contributing to the search for effective medicines, vaccines or diagnostics is essential for socially responsible companies in the sector. 2 It is therefore unsurprising that we are seeing industry-wide efforts unfold at unprecedented scale and pace. Whereas there is always scope for more activity, industry is currently contributing in a variety of ways. Examples include pharmaceutical companies donating existing compounds to assess their utility in the fight against COVID19; screening existing compound libraries in-house or with partners to see if they can be repurposed; accelerating trials for potentially effective medicine or vaccine candidates; and in some cases rapidly accelerating in-house research and development to discover new treatments or vaccine agents and develop diagnostics tests.3,4 Pharmaceutical companies are collaborating with each other in some of these efforts and participating in global R&D partnerships (such as the Innovative Medicines Initiative effort to accelerate the development of potential therapies for COVID-19) and supporting national efforts to expand diagnosis and testing capacity and ensure affordable and ready access to potential solutions.3,5,6 The primary purpose of such innovation is to benefit patients and wider population health. Although there are also reputational benefits from involvement that can be realised across the industry, there are likely to be relatively few companies that are 'commercial' winners. Those who might gain substantial revenues will be under pressure not to be seen as profiting from the pandemic. In the United Kingdom for example, GSK has stated that it does not expect to profit from its COVID-19 related activities and that any gains will be invested in supporting research and long-term pandemic preparedness, as well as in developing products that would be affordable in the world's poorest countries.7 Similarly, in the United States AbbVie has waived intellectual property rights for an existing combination product that is being tested for therapeutic potential against COVID-19, which would support affordability and allow for a supply of generics.8,9 Johnson & Johnson has stated that its potential vaccine – which is expected to begin trials – will be available on a not-for-profit basis during the pandemic.10 Pharma is mobilising substantial efforts to rise to the COVID-19 challenge at hand. However, we need to consider how pharmaceutical innovation for responding to emerging infectious diseases can best be enabled beyond the current crisis. Many public health threats (including those associated with other infectious diseases, bioterrorism agents and antimicrobial resistance) are urgently in need of pharmaceutical innovation, even if their impacts are not as visible to society as COVID-19 is in the immediate term. The pharmaceutical industry has responded to previous public health emergencies associated with infectious disease in recent times – for example those associated with Ebola and Zika outbreaks.11 However, it has done so to a lesser scale than for COVID-19 and with contributions from fewer companies. Similarly, levels of activity in response to the threat of antimicrobial resistance are still

low.12 There are important policy questions as to whether – and how – industry could engage with such public health threats to an even greater extent under improved innovation conditions.

Bioterror causes extinction.

Millett & Snyder-Beattie '17 [(Piers Millett: Ph.D., Senior Research Fellow, Future of Humanity Institute, University of Oxford. Andrew Snyder-Beattie: M.S., Director of Research, Future of Humanity Institute, University of Oxford.) " Existential Risk and Cost-Effective Biosecurity," Health Security, 15(4), 08-01-2017, https://www.liebertpub.com/doi/full/10.1089/hs.2017.0028] TDI

In the decades to come, advanced bioweapons could **threaten human existence**. Although the **probability** of human extinction from bioweapons **may** be low, the **expected value** of **reducing** the risk could **still** be **large**, since such risks jeopardize the existence of **all future generations**. We provide an overview of biotechnological extinction risk, make some rough initial estimates for how severe the risks might be, and compare the cost-effectiveness of reducing these extinction-level risks with existing biosecurity work. We find that reducing human extinction risk can be more cost-effective than reducing smaller-scale risks, even when using conservative estimates. This suggests that the risks are not low enough to ignore and that more ought to be done to prevent the worst-case scenarios. How worthwhile is it spending resources to study and mitigate the chance of human extinction from biological risks? The risks of such a catastrophe are presumably low, so a skeptic might argue that addressing such risks would be a waste of scarce resources. In this article, we investigate this position using a cost-effectiveness approach and ultimately conclude that the expected value of reducing these risks is large, especially since such risks jeopardize the existence of all future human lives. **Historically, disease events have been responsible for the greatest death tolls** on humanity. The 1918 flu was responsible for more than 50 million deaths,1 while smallpox killed perhaps 10 times that many in the 20th century alone.2 The Black Death was responsible for killing over 25% of the European population,3 while other pandemics, such as the plague of Justinian, are thought to have killed 25 million in the 6th century—constituting over 10% of the world's population at the time.4 It is an open question whether a future pandemic could result in outright human extinction or the irreversible collapse of civilization. A skeptic would have many good reasons to think that existential risk from disease is unlikely. Such a disease would need to spread worldwide to **remote populations**, overcome **rare genetic resistances**, and **evade detection**, cures, and **countermeasures**. Even evolution itself may work in humanity's favor: **Virulence and transmission is often a trade-off**, and so **evolutionary pressures** could push against maximally lethal wild-type pathogens.5,6 While these arguments point to a very small risk of human extinction, they **do not rule** the possibility **out** entirely. Although rare, there are recorded instances of **species going extinct due to disease**—primarily in amphibians, but also in 1 mammalian species of rat on Christmas Island.7,8 There are also **historical examples of large human populations being almost entirely wiped out** by disease, especially when multiple diseases were simultaneously introduced into a population without immunity. The most striking examples of total population collapse include **native American tribes** exposed to European diseases, such as the Massachusett (86% loss of population), Quiripi-Unquachog (95% loss of population), and the Western Abenaki (which suffered a staggering 98% loss of population).9 In the modern context, no single disease currently exists that combines the worst-case levels of transmissibility, lethality, resistance to countermeasures, and global reach. But **many diseases are**

proof of principle that **each worst-case attribute can be realized independently**. For example, some diseases exhibit nearly a 100% case fatality ratio in the absence of treatment, such as rabies or septicemic plague. Other diseases have a track record of spreading to virtually every human community worldwide, such as the 1918 flu,10 and seroprevalence studies indicate that other pathogens, such as chickenpox and HSV-1, can successfully reach over 95% of a population.11,12 Under optimal virulence theory, **natural evolution** would be an **unlikely** source for pathogens with the **highest possible levels of transmissibility, virulence, and global reach**. But **advances in biotech**nology might allow the creation of diseases that **combine such traits**. Recent controversy has **already emerged** over a number of **scientific experiments** that resulted in viruses with enhanced **transmissibility**, **lethality**, and/or the ability to overcome **therapeutics**.13-17 Other experiments demonstrated that mousepox could be modified to have a 100% case fatality rate and render a vaccine ineffective.18 In addition to transmissibility and lethality, studies have shown that other disease traits, such as incubation time, environmental survival, and available vectors, could be modified as well.19-21 Although these experiments had scientific merit and were not conducted with malicious intent, their implications are still worrying. This is especially true given that there is also a **long historical track record** of**state-run bioweapon research** applying cutting-edge science and technology to design agents not previously seen in nature. The Soviet bioweapons program developed agents with traits such as enhanced virulence, resistance to therapies, greater environmental resilience, increased difficulty to diagnose or treat, and which caused unexpected disease presentations and outcomes.22 Delivery capabilities have also been subject to the cutting edge of technical development, with Canadian, US, and UK bioweapon efforts playing a critical role in developing the discipline of aerobiology.23,24 While there is no evidence of state-run bioweapons programs directly attempting to develop or deploy bioweapons that would pose an existential risk, the logic of deterrence and **m**utually **a**ssured **d**estruction could create such incentives in more unstable political environments or following a breakdown of the Biological Weapons Convention.25 The **possibility of a war** between great powers could also increase the pressure to use such weapons—during the World Wars, bioweapons were used across multiple continents, with Germany targeting animals in WWI,26 and Japan using plague to cause an epidemic in China during WWII.27

Case

[1] Restricting IP protections undermines innovation and profit margins – turns case by precluding vaccine distribution to developing countries.

Cueni 12/10 [(Thomas, Director General of IFPMA, chair of the AMR Industry Alliance, Industry Co-Chair APEC Biopharmaceutical Working Group on Ethics, MA in politics from the London School of Economics) "The Risk in Suspending Vaccine Patent Rules," New York Times, 12/10/2020] TDI

It is unclear how suspending patent protections would ensure fair distribution. But what is clear is that if successful, the effort would **jeopardize future medical innovation**, making us more vulnerable to other diseases.

Intellectual property rights, including patents, grant inventors a period of exclusivity to make and market their creations. By affording these rights to those who create intangible assets, such as musical compositions, software or drug formulas — people will invent more useful new things.

Development of a new medicine is **risky** and **costly**. Consider that scientists have spent decades — and billions of dollars — working on Alzheimer's treatments, but still have little to show for it. The companies and investors who fund research shoulder so much risk because they have a shot at a reward. Once a patent expires, generic companies are free to produce the same product. Intellectual property rights underpin the system that gives us all new medicines, from psychiatric drugs to cancer treatments.

In trying to defend these rights, the drug industry has made mistakes in the past that have lost people's trust. More than 22 years ago, for example, a group of drug companies sued the South African government for trying to import cheaper anti-AIDS drugs amid an epidemic. With price standing between patients and survival, the suit, which the companies eventually dropped, was a terrible misjudgment. The current situation is not parallel.

Several major drug companies, including AstraZeneca, GlaxoSmithKline and Johnson & Johnson, have pledged to **offer their vaccines on a not-for-profit basis** during the pandemic. Others are considering differential pricing for different countries. As of last month, four major pharmaceutical companies had already agreed to eventually produce at least three billion vaccine doses for low- and middle-income nations, according to one analysis.

In South Africa and India, pharmaceutical companies are already working with local partners to make their vaccines available. Johnson & Johnson has entered into a technology transfer partnership for its candidate vaccine with South Africa's Aspen Pharmacare, and AstraZeneca has reached a licensing agreement with the Serum Institute of India to develop up to 1 billion doses of its vaccine for low and middle-income countries.

Companies can afford to license patents for free, or sell drugs at cost, precisely because they know that their intellectual property will be protected. That's not a flaw in the system; it's how the system ensures that pharmaceutical research will continue to be funded.

[2] IP protections are key to pharmaceutical investment in developing countries.

Ezell and Cory 19 [(Stephen, vice president, global innovation policy, at the Information Technology and Innovation Foundation, B.S. from the School of Foreign Service at Georgetown University, **and Nigel,** associate director covering trade policy at the Information Technology and Innovation Foundation, former researcher in the Southeast Asia Program at the Center for Strategic and

International Studies, MA in public policy from Georgetown University**)** **"**The Way Forward for Intellectual Property Internationally," Information Technology and Innovation Foundation, 4/25/2019] TDI

Academic research also signals a strong correlation between IPR and technology transfer. Lippoldt showed that **IPR strengthening in countries—particularly with respect to patents—is associated with increased technology transfer via trade and investment**.34 Research has revealed that a country's level of intellectual property protection considerably affects whether foreign firms will transfer technology into it.35 That matters because the welfare gains from the importation of technology via innovative products, while differing across countries, can be substantial.36 For instance, **foreign sources of technology account for over 90 percent of domestic productivity growth in all but a handful of countries**.37 The research on this matter is clear and consistent. For example, a 1986 United Nations Conference on Trade and Development (UNCTAD) study found that direct investment in new technology areas such as computer software, semiconductors, and biotechnology is supported by stronger intellectual property rights policy regimes.38 (However, as this report later clarifies, subsequent UNCTAD reports have lamentably taken a more skeptical view toward IP.) A 1989 study by the United Nations Commission on Transnational Corporations (UNCTC) found that weak IP rights reduce computer software direct investment; and a 1990 study by UNCTC found that **weak IP rights reduce pharmaceutical investment**.39 Mansfield conducted firm-level surveys and found that perceptions of strong IP rights abroad have a positive effect on incentives to transfer technologies abroad. Likewise, survey research by the World Bank's International Finance Corporation found that, with variations by sector, country, and technology, **at least 25 percent of American and Japanese high-tech firms refuse to directly invest, or enter into a joint venture, in developing countries with weak intellectual property rights**; and a later study confirmed those survey findings with actual foreign direct investment data.40 And an Institute for International Economics study of World Bank data concluded that weak intellectual property rights reduce flows of all these commercial activities, regardless of nations' levels of economic development.41

Studies have also shown how the benefits of intellectual property extend to developing countries. Diwan and Rodrik demonstrated that stronger patent rights in developing countries give enterprises from developed countries a greater incentive to research and introduce technologies appropriate to developing countries.42 Similarly, Taylor showed that **weak patent rights in developing countries lead enterprises from developed countries to introduce less-than-best-practice technologies to developing countries**.43 Interestingly, the relationship goes in both directions. Branstetter and Saggi showed that strengthened IPR protection not only improves the investment climate in the implementing countries, but also leads to increased FDI in the country producing the original innovation.44 They concluded that IPR reform in the "global South" (e.g., developing countries) may be associated with FDI increases in the "global North" (e.g., developed countries). As northern firms shift their production to southern affiliates, this FDI accelerates southern industrial development, creating a cyclical feedback mechanism that also benefits the North. Another study by Liao and Wong, which focused on firm-level analysis, highlights the inter-relationship of IPR reform in developed and developing countries. Their study concluded that **developing countries can entice technology transfer from the North by providing IPR protection for incoming products** (although they note there is a need for redoubled R&D efforts in developed countries to spur needed innovations).45

[3] – Any risk for investors that IP protections can be violated sets bad past precedent: TRIPS waiver won't solve uncertainty

[4] A wholesale solution is key---the aff fails.

Stone 21. [(Judy Stone is an Infectious Disease specialist) "Covid Vaccine Equity - Developing Countries Need Our Help," Forbes, May 11, 2021. https://www.forbes.com/sites/judystone/2021/05/11/vaccine-equitydeveloping-countries-need-our-help/?sh=10939a363ec8] TDI

The real problem is that vax is a good retail (one at a time) solution, whereas **in a pandemic you need a wholesale, behavioral semi-solution: masks, ventilation, quarantine.** With its nationalistic approach to global problems the previous administration brokered deals that prohibited donation of supplies, in part due to liability concerns of the manufacturers or shortages of raw materials. There has been a **great deal of debate over whether we should waive intellectual property rights**, given the urgency of the Covid pandemic. Some in industry feel it will stifle their innovation. Others reply that public and non-profits have provided over $10 billion towards research and development of vaccines. Furthermore, the U.S. government holds the patent for a technique for modifying the coronavirus protein used in vaccines produced by the major U.S. manufacturers. Unlike his predecessor, President Biden understands that sharing vaccine with other countries is also in our best interest, and joined the international Covax program. Covax is led by WHO, Gavi (Global vaccine alliance), CEPI (Coalition for Epidemic Preparedness Innovations) and the UN's Children's Fund (UNICEF). So far, only 0.3% of the vaccines that have been administered have gone to low-income countries, according to the Director-General of the World Health Organization (WHO) Tedros Adhanom Ghebreyesus. Covax's goal is vaccinating 20% of the population of poorer countries. Covax had hoped to administer 2 billion vaccine doses in 2021 (that's more than 25% of the world's whole population); so far, they've only reached 29 million doses. We need at least a 70% vaccination rate to develop herd immunity and stop the pandemic. Another problem is that even if the patent protections are waived, allowing companies to have the "recipe" for producing vaccines, many **lack the technical know-how or experience to do so.** WHO is proposing a technology transfer hub to assist in this process.

[5] Overreliance on vaccines hurts overall pandemic response.

Lovelace 1/13 [(Berkeley, health-care reporter for CNBC, mainly covering pharmaceuticals and the Food and Drug Administration) "WHO says Covid vaccines aren't 'silver bullets' and relying entirely on them has hurt nations," CNBC, 1-13-2021, https://www.cnbc.com/2021/01/15/who-says-covid-vaccines-arent-silver-bullets-and-relying-entirely-on-them-has-hurt-nations.html] TDI

The World Health Organization said Friday that coronavirus vaccines aren't "silver bullets" and relying solely on them to fight the pandemic has hurt nations. Some countries in Europe, Africa and the Americas are seeing spikes in Covid-19 cases "because we are collectively not succeeding at breaking the chains of transmission at the community level or within households," WHO Director-General Tedros Adhanom Ghebreyesus said during a news conference from the agency's Geneva headquarters. With global deaths reaching 2 million and new variants of the virus appearing in multiple countries, world leaders need to do all they can to curb infections "through tried and tested public health measures," Tedros said. "There is only one way out of this storm and that is to share the tools we have and commit to using them together." The coronavirus has infected more than 93.3 million people worldwide and killed at least 2 million since the pandemic began about a year ago, according to data compiled by Johns Hopkins University. The virus continues to accelerate in some regions, with nations reporting that their supply of oxygen for Covid-19 patients is running "dangerously low," the WHO said. Some countries, including the U.S., have focused heavily on the use of vaccines to combat their outbreaks. While vaccines are a useful tool, they will not end the pandemic alone, Mike Ryan, executive director of the WHO's health emergencies program, said at the news conference. "We warned in 2020 that if we were to rely entirely on vaccines as the only solution, we could lose the very controlled measures that we had at our disposal at the time. And I think to some extent that has come true," Ryan said, adding the colder seasons and the recent holidays also may have also played a role in the spread of the virus. "A big portion of the transmission has occurred because we are reducing our physical distancing. ... We are not breaking the chains of transmission. The virus is exploiting our lack of tactical commitment," he added. "We are not doing as well as we could." Dr. Bruce Aylward, a senior advisor to the WHO's director-general, echoed Ryan's comments, saying, vaccines are not "silver bullets" "Things can get worse, numbers can go up," he said. We have vaccines, yes. But we have limited supplies of vaccines that will

be rolled out slowly across the world. And vaccines are not perfect. They don't protect everyone against every situation." In the U.S., the pace of vaccinations is going slower than officials had hoped. As of Friday at 6 a.m. ET, more than 31.1 million doses of vaccine had been distributed across the U.S., but just over 12.2 million shots have been administered, according to data compiled by the Centers for Disease Control and Prevention. Meanwhile, cases are rapidly growing, with the U.S. recording at least 238,800 new Covid-19 cases and at least 3,310 virus-related deaths each day, based on a seven-day average calculated by CNBC using Johns Hopkins data. On Thursday, President-elect Joe Biden unveiled a sweeping plan to combat the coronavirus pandemic in the United States. While his administration will invest billions in a vaccine campaign, it will also scale up testing, invest in new treatments and work to identify new strains, among other measures.

[6]vCorruption prevents South African recovery.

Egwu 21. [(Patrick Egwu is a Nigerian freelance journalist currently based in Johannesburg, where he is an Open Society Foundations fellow at the University of the Witwatersrand) "South Africa's Twin Crises Are Feeding Each Other," Foreign Policy, July 20, 2021. https://foreignpolicy.com/2021/07/20/south-africa-covid-19-struggles-deadly-third-wave-zuma-violence/] TDI

Corruption is certainly slowing South Africa's fight against the pandemic. Since last year, Corruption Watch, a South African anti-corruption organization, has been tracking corruption related to the pandemic. For instance, in April 2020, the organization raised concerns that corrupt officials might exploit the pandemic to their **personal advantage.** "You will expect some people to use every opportunity they see to **enrich themselves**," said Kavisha Pillay, the head of stakeholder relations and campaigns at Corruption Watch. "That is the situation now, and we are working with law enforcement, especially the financial crime department, to track cases of embezzlement around the pandemic." A report released in April by the Financial Transparency Coalition, a coalition of civil societies working to end illicit financial flows, reveals a **broad lack of accountability in the use of COVID-19 emergency funds.**

[7] No Link - COVID isn't solely to blame for economic instability in South Africa.

Fengler 21. [(Wolfgang Fengler is the World Bank's Lead Economist in Finance, Competitiveness and Innovation for Eastern Europe and Central Asia. Previously, he served as the World Bank's Lead Economist in the Nairobi office. Also written by Marie-Francoise Nelly, Indermit Gill, Benedicte Baduel, and Facundo Cuevas) "South Africa after COVID-19—light at the end of a very long tunnel," Brookings, July 13, 2021. https://www.brookings.edu/blog/future-development/2021/07/13/south-africa-after-covid-19-light-at-the-end-of-a-very-long-tunnel/] TDI

In this time of crisis, we are often reminded of a famous quote attributed to Winston Churchill during World War II: "If you're going through hell, keep going." While South Africa is not in the middle of a physical war, it is battling the COVID-19 crisis in full force. Like most other countries, South Africa could not escape the pandemic. It suffered the loss of lives and livelihoods. At the time of writing, in early July 2021, more than 64,000 South Africans have lost their lives. The third wave is hitting the country very hard and infections keep rising every day. But there is also light at the end of a very long tunnel. The government **responded swiftly and strongly to the crisis** while also spearheading an international alliance for the distribution of vaccines in Africa. If the South African government would carry out with the same determination long-standing economic reform as it was fighting the pandemic, COVID-19 could serve as a turning point in reenergizing South Africa's economy and labor market. While South Africa is set to emerge from the crisis weaker than it was going into it, the World Bank's South Africa Economic Update argues that the **reasons for low growth and high unemployment**

do not lie in the government's crisis response. Instead, the pandemic has exposed **long-standing structural weaknesses** that have progressively worsened since the global financial crisis of 2008–09. For 2021, the World Bank projects a gross domestic product (GDP) growth of 4 percent, followed by 2.1 percent in 2022 and 1.5 percent in 2023. South Africa's weak recovery is putting pressure on public finance. For the first time ever, public debt is now at almost 80 percent of GDP and under the current trajectory debt levels will not stabilize before 2026. However, the current global recovery is helping South Africa, especially the strong rebound in China and the United States—two of its key trading partners. As other emerging markets are recovering faster, South Africa's economy could have benefited more in 2021 if **integration** with the rest of the world was **stronger** (Figure 1). Figure 1. South Africa's contraction in 2020 was deep, and recovery in 2021 will be moderate Figure 1. South Africa's contraction in 2020 was deep, and recovery in 2021 will be moderate The crisis has exposed South Africa's biggest challenge: its job market. **Even in the best of times**, the labor market has been marked by high levels of unemployment and inactivity. Out of a working-age population of almost 40 million people, only 15 million South Africans are employed, which includes 3 million jobs in the public sector. The COVID-19 crisis has made a difficult situation worse because low-wage workers suffered almost four times more job losses than high-wage workers. In 2021, we saw a modest job recovery, but it is at risk due to the third wave. Against the odds, there are also positive developments in the labor market, and young entrepreneurs are one of South Africa's best hopes to solve the jobs crisis. There are an increasing number of startups, especially in the digital sector, which are growing fast and could in the future become an engine of jobs growth. Cape Town alone, the "tech capital of Africa", has over 450 tech firms and employs more than 40,000 people. In 2020, a total of $88 million (1.2 billion rand) disclosed investments went into its tech startups. A focus on young entrepreneurs would also help South Africa to close its large gap in self-employment (own-account workers with own businesses, freelancers), which represents only 10 percent of all jobs—compared to around 30 percent in most upper-middle-income economies such as Turkey, Mexico, or Brazil (Figure 2). If South Africa were to match the self-employment rate of its peers, it could potentially halve its unemployment rates. Figure 2. Self-employment—South Africa's biggest opportunity to create jobs Figure 2. Self-employment—South Africa's biggest opportunity to create jobs South Africa's economy would benefit from measures to preserve macroeconomic stability, to revitalize the jobs market by improving the investment climate to build a better and more inclusive economy after the pandemic. There is a risk that the recovery leaves behind most of the potential economically active population, particularly young job seekers, which would mean that the pandemic permanently impaired the country's long-term development prospects. Conversely, if South Africa were to engineer a broad-based recovery, this decade could bring new prosperity. Related Books Cvr: Regional Integration in West Africa Regional Integration in West Africa By Eswar Prasad and Vera Songwe 2021 **Addressing structural constraints** to growth behind and at the border could support exports and higher growth, and so preserve the sustainability of public finances. The experience of major emerging economies shows that the two most potent factors for reducing public debt-to-GDP ratios are economic growth and primary surpluses. The implied priorities are self-evident: a better climate for investment and trade, and prudent fiscal policy. To generate employment, South Africa would have to address **three chronic problems in its labor market**: extremely high rates of inactivity, high rates of unemployment, and low levels of self-employment. Along with enacting carefully chosen regulations to improve the business climate and investing in the workforce through better education, the government can implement reforms to encourage self-employment and support the growth of micro- and small enterprises.