**1AC—FW**

**First, pleasure and pain are intrinsically valuable. People consistently regard pleasure and pain as good reasons for action, despite the fact that pleasure doesn’t seem to be instrumentally valuable for anything.**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

Let us start by observing, empirically, that **a widely shared judgment about intrinsic value and disvalue is that pleasure is intrinsically valuable and pain is intrinsically disvaluable.** **On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues.** This inclusion makes intuitive sense, moreover, for **there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have.** “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative.2 **The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values.** If you tell me that you are heading for the convenience store, **I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so**, not merely for the sake of going to the convenience store, but **for the sake of achieving something further that you deem to be valuable.** You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” **If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good.**3 As Aristotle observes**: “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.**”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for granted that if something is painful, we have a sufficient explanation of why it is bad. If we are onto something in our everyday reasoning about values, it seems that **pleasure and pain are both places where we reach the end of the line in matters of value.**

**Moreover, *only* pleasure and pain are intrinsically valuable. All other values can be explained with reference to pleasure; Occam’s razor requires us to treat these as instrumentally valuable.**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

I think several things should be said in response to Moore’s challenge to hedonists. First, **I do not think the burden of proof lies on hedonists to explain why the additional values are not intrinsic values. If someone claims that X is intrinsically valuable, this is a substantive, positive claim, and it lies on him or her to explain why we should believe that X is in fact intrinsically valuable.** Possibly, this could be done through thought experiments analogous to those employed in the previous section. Second, **there is something peculiar about the list of additional intrinsic values** that counts in hedonism’s favor**: the listed values have a strong tendency to be well explained as things that help promote pleasure and avert pain.** To go through Frankena’s list, life and consciousness are necessary presuppositions for pleasure; activity, health, and strength bring about pleasure; and happiness, beatitude, and contentment are regarded by Frankena himself as “pleasures and satisfactions.” The same is arguably true of beauty, harmony, and “proportion in objects contemplated,” and also of affection, friendship, harmony, and proportion in life, experiences of achievement, adventure and novelty, self-expression, good reputation, honor and esteem. Other things on Frankena’s list, such as understanding, **wisdom, freedom, peace, and security, although they are perhaps not themselves pleasurable, are important means to achieve a happy life, and as such, they are things that hedonists would value highly.** **Morally good dispositions and virtues, cooperation, and just distribution of goods and evils, moreover, are things that, on a collective level, contribute a happy society, and thus the traits that would be promoted and cultivated if this were something sought after.** To a very large extent, the intrinsic values suggested by pluralists tend to be hedonic instrumental values. Indeed, pluralists’ suggested intrinsic values all point toward pleasure, for while the other values are reasonably explainable as a means toward pleasure, pleasure itself is not reasonably explainable as a means toward the other values. Some have noticed this. Moore himself, for example, writes that though his pluralistic theory of intrinsic value is opposed to hedonism, its application would, in practice, look very much like hedonism’s: “Hedonists,” he writes “do, in general, recommend a course of conduct which is very similar to that which I should recommend.”24 Ross writes that “[i]t is quite certain that by promoting virtue and knowledge we shall inevitably produce much more pleasant consciousness. These are, by general agreement, among the surest sources of happiness for their possessors.”25 Roger Crisp observes that “those goods cited by non-hedonists are goods we often, indeed usually, enjoy.”26 What Moore and Ross do not seem to notice is that their observations give rise to two reasons to reject pluralism and endorse hedonism. The first reason is that if **the suggested non-hedonic intrinsic values are potentially explainable by appeal to just pleasure and pain** (which, following my argument in the previous chapter, we should accept as intrinsically valuable and disvaluable), **then—by appeal to Occam’s razor—we have at least a pro tanto reason to resist the introduction of any further intrinsic values and disvalues. It is ontologically more costly to posit a plurality of intrinsic values and disvalues, so in case all values admit of explanation by reference to a single intrinsic value and a single intrinsic disvalue, we have reason to reject more complicated accounts.** **The fact that suggested non-hedonic intrinsic values tend to be hedonistic instrumental values does not, however, count in favor of hedonism solely in virtue of being most elegantly explained by hedonism; it also does so in virtue of creating an explanatory challenge for pluralists.** The challenge can be phrased as the following question: **If the non-hedonic values suggested by pluralists are truly intrinsic values in their own right, then why do they tend to point toward pleasure and away from pain?**27

**Thus the standard is maximizing expected well-being. Prefer additionally:**

**1] Only consequentialism explains degrees of wrongness—if I break a promise to meet up for lunch, that is not as bad as breaking a promise to take a dying person to the hospital. Only the consequences of breaking the promise explain why the second one is much worse than the first. Intuitions outweigh—they’re the foundational basis for any argument and theories that contradict our intuitions are most likely false even if we can’t deductively determine why**

**2] Reductionism – empirics prove.**

**Parfit 84** [Derek Parfit, cool hair. “Reasons and Persons” 1984. Brackets for gender]

Some recent medical cases provide striking evidence in favour of the Reductionist View. Human beings have a lower brain and two upper hemispheres, which are connected by a bundle of fibres. In treating a few people with severe epilepsy, surgeons have cut these fibres. The aim was to reduce the severity of epileptic fits, by confining their causes to a single hemisphere. This aim was achieved. But the operations had another unintended consequence. The effect, in the words of one surgeon, was the creation of ‘two separate spheres of consciousness.’

This effect was revealed by various psychological tests. These made use of two facts. We control our right arms with our left hemispheres, and vice versa. And what is in the right halves of our visual fields we see with our left hemispheres, and vice versa. When someone’s hemispheres have been disconnected, psychologists can thus present to this person two different written questions in the two halves of [their]~~his~~visual field, and can receive two different answers written by this person’s two hands.

**Use epistemic modesty for evaluating the framework debate: that means compare the probability of the framework times the magnitude of the impact under a framework. Prefer:**

**A] Substantively true since it maximizes the probability of achieving net most moral value—beating a framework acts as mitigation to their impacts but the strength of that mitigation is contingent.**

**B] Clash— we don’t know if our frameworks are true, but we can debate the topical question. That incentivizes debating both layers instead of solely focusing on framework.**

**Moral uncertainty means preventing extinction should be our highest priority.**   
**Bostrom 12** [Nick Bostrom. Faculty of Philosophy & Oxford Martin School University of Oxford. “Existential Risk Prevention as Global Priority.” Global Policy (2012)]   
These reflections on**moral uncertainty suggest**an alternative, complementary way of looking at existential risk; they also suggest a new way of thinking about the ideal of sustainability. Let me elaborate.¶**Our present understanding of axiology might**well**be confused. We may not**nowknow — at least not in concrete detail — what outcomes would count as a big win for humanity; we might not even yet**be able to imagine the best ends**of our journey.**If we are**indeedprofoundly**uncertain**about our ultimate aims,then we should recognize that**there is a great**option**value in preserving**— and ideally improving —**our ability to recognize value and** to **steer the future accordingly. Ensuring**that**there will be a future**version of**humanity**with great powers and a propensity to use them wisely**is**plausibly**the best way**available to us**to increase the probability that the future will contain**a lot of**value.**To do this, we must prevent any existential catastrophe.

**Reducing the risk of extinction is always priority number one.**   
**Bostrom 12** [Faculty of Philosophy and Oxford Martin School, University of Oxford.], Existential Risk Prevention as Global Priority.  Forthcoming book (Global Policy). MP. [http://www.existenti...org/concept.pdf](http://www.existential-risk.org/concept.pdf)Even if we use the most conservative of these estimates, which entirely ignores the   possibility of space colonization and software minds, **we find that the expected loss of an existential   catastrophe is greater than the value of 10^16 human lives**.  **This implies that the expected value of   reducing existential risk by a mere one millionth of one percentage point is at least a hundred times the   value of a million human lives.**  The more technologically comprehensive estimate of 10  54 humanbrain-emulation subjective life-years (or 10  52  lives of ordinary length) makes the same point even   more starkly.  Even if we give this allegedly lower bound on the cumulative output potential of a   technologically mature civilization a mere 1% chance of being correct, we find that the expected   value of reducing existential risk by a mere one billionth of one billionth of one percentage point is worth   a hundred billion times as much as a billion human lives. **One might consequently argue that even the tiniest reduction of existential risk has an   expected value greater than that of the definite provision of any ordinary good, such as the direct   benefit of saving 1 billion lives.**  And, further, that the absolute value of the indirect effect of saving 1  billion lives on the total cumulative amount of existential riskâ€”positive or negativeâ€”is almost   certainly larger than the positive value of the direct benefit of such an action.

**1NC – Econ DA**

**Economy’s recovering now – Delta and inflation are challenges but surmountable**

**Sully 8/19** - Evan Sully, 8/19/21, Reuters, U.S. leading indicator points to further economic recovery in July, https://www.reuters.com/world/us/us-leading-indicator-points-further-economic-recovery-july-2021-08-19/ WJ

(Reuters) -**A gauge of future U.S. economic activity increased in July, suggesting the economy continued to expand from the recession caused by the coronavirus pandemic even in the face of a resurgence in cases fueled by the Delta variant**.

**The Conference Board on Thursday said its index of leading economic indicators (LEI) rose 0.9% last month to 116.0. Economists polled by Reuters had expected an increase of 0.8**%.

Even though the U.S. economy is forecast to grow this year at its fastest pace since the 1980s, **there are signs the recovery could be cooling off.** **Supply-chain bottlenecks continue to slow manufacturing growth, and consumer sentiment plummeted in early August to a decade-low** as **Americans gave faltering outlooks on everything from personal finances to inflation and employment**.

Meanwhile, consumer price increases slowed in July, the Labor Department said last week, but **inflation overall remained at a historically high level amid supply-chain disruptions as well as stronger demand for travel-related services**.

"The U.S. LEI registered another large gain in July, with all components contributing positively," said Ataman Ozyildirim, the Conference Board's senior director of economic research. "**While the Delta variant and/or rising inflation fears could create headwinds for the U.S. economy in the near term, we expect real GDP** (gross domestic product) growth for 2021 **to reach 6.0% year-over-year, before easing** to a still robust 4.0% growth rate for 2022."

The LEI's coincident index, a measure of current economic conditions, rose 0.6% in July after increasing 0.4% in June.

But the lagging index increased 0.6% last month after being unchanged in June and increasing 0.8% in May.

"**Even with more moderate growth in the second half of the year, the economy’s momentum remains encouraging with constraints on labor supply easing, a trove of excess savings still waiting to be drawn down, and strong vaccine numbers that will insulate the economy from the worsening health situation more so than prior waves**," said Mahir Rasheed, U.S. economist at Oxford Economics.

**Biotech is resilient and fundamentals are strong – but this trend relies on innovation and investment**

**Cancherini et al 21** -- Laura Cancherini is a consultant in McKinsey’s Brussels office; Joseph Lydon is an associate partner in the Zurich office, where Jorge Santos da Silva is a senior partner and Alexandra Zemp is a partner, McKinsey, What’s ahead for biotech: Another wave or low tide?, April 30, 2021, https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/whats-ahead-for-biotech-another-wave-or-low-tide WJ

**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**.

**Pharma collapses without strong IP protections**

**Buckland 17** - Danny Buckland (award-winning journalist who writes about health, general features and news, shortlisted for the prestigious Mind Media Awards for his work covering mental health issues), April 26, 2017, “Patents are lifeblood of pharmas”, https://www.raconteur.net/legal/intellectual-property/patents-are-lifeblood-of-pharmas/ WJ

**Pharmaceutical companies are staffed by ranks of attorneys, and the intellectual property (IP) specialist is now a pivotal position in the research and development (R&D) cycle that keeps a company profitable** and new drugs flowing to patients.

**Tighter regulatory frameworks** and even tighter purse strings controlled by healthcare systems **are putting the squeeze on pharma returns and limiting R&D budgets**. Figures from analysts Deloitte in 2016 reported projected return on investment was at a six-year low while development costs had risen by almost a third.

The litany of market changes is vexing for the industry. **The generation of blockbuster drugs, with massive returns**, **has ended,** national healthcare budgets are receding, traditional management methods are being challenged and new players, such as electronics and software companies, are entering the arena.

“**For pharmaceutical companies, the patent system is its lifeblood and it simply wouldn’t survive without it**,” says Simon Wright, a patent attorney with J A Kemp and chairman of the Chartered Institute of Patent Attorneys’ life sciences committee. “**The cost of getting a product to market is high and there is a high failure rate**, so you are not going to get investment unless you can protect your product and innovation. **Quite frankly, it would all collapse without good IP**.”

**Biopharmaceutical research is the bedrock of our economy – even minor reductions in income result in mass unemployment and butterfly effects**

**Sullivan 11** – Thomas Sullivan (Thomas Sullivan is Editor of Policy and Medicine, President of Rockpointe Corporation, founded in 1995 to provide continuing medical education to healthcare professionals around the world. Prior to founding Rockpointe, Thomas worked as a political consultant), July 12, 2011, Study Shows Importance of Biopharmaceutical Jobs For US Economy,” Policy and Medicine, http://www.policymed.com/2011/07/study-shows-importance-of-biopharmaceutical-jobs-for-us-economy-for-every-20-billion-loss-in-revenue.html WJ

**Biopharmaceutical research companies produce the highest-value jobs**, the types of jobs Americans want in the 21st century economy, the kinds of jobs that can drive future economic growth. **No other sector has the ability to drive innovation, create high-quality jobs and provide new life-saving medicines for patients.**

According to a recent report from the Battelle Technology Partnership Practice (TPP), “nationwide, the biopharmaceutical sector supported a total of 4 million jobs in 2009, including nearly 675,000 direct jobs. Battelle is the world’s largest non-profit independent research and development organization, providing innovative solutions to the world’s most pressing needs through its four global businesses.

TPP has an established reputation in state-by-state assessment of the biopharmaceutical sector, and has recently undertaken major impact assessment projects for the Human Genome Project, the nation’s biotechnology sector, and major bioscience organizations such as Mayo Clinic. TPP has also been active in provision of analysis to industry organizations, including the Council for American Medical Innovation, PhRMA and BIO-the Biotechnology Industry Organization.

**Each job in a biopharmaceutical research company supported almost 6 additional jobs in other sectors**, ranging from manufacturing jobs to construction and other building service jobs to contract researchers and child care providers. Together, **this biopharmaceutical sector-related workforce received $258 billion in wages and benefits in 2009**.

“Battelle also found that across all occupations involved in the biopharmaceutical sector, **the average wage is higher than across all other private sector industries**, due to the sector’s role as a ‘high value-added sector.” Specifically, the annual average personal income of a biopharmaceutical worker was $118,690 in 2009 as compared to $64,278 in the overall economy.

Additionally, the **biopharmaceutical sector’s total economic output** (including direct, indirect and induced impacts) was $918 billion in 2009. The sector generated an estimated $85 billion tax revenues in 2009—$33 billion in state and local and more than $52 billion in federal. This impact **comprises $382 billion in direct impact of biopharmaceutical businesses and $535 billion in indirect and induced impacts** (an output multiplier of 2.4—meaning that every $1 dollar in output generated by the biopharmaceutical sector generates another $1.4 in output in other sectors of the economy).

To put this export volume into perspective, 2010’s total biopharmaceutical exports of $46.7 billion compares favorably to other major U.S. exports including: automobiles ($38.4 billion in 2010 exports); plastics and rubber products ($25.9 billion); communications equipment ($27 billion) and computers ($12.5 billion).

In addition, the U.S. Congressional Budget Office noted that, “**the pharmaceutical industry is one of the most research-intensive industries in the United States** and that pharmaceutical firms invest as much as five times more in research and development, relative to their sales, than the average U.S. manufacturing firm.”

At over $105,000 in biopharmaceutical R&D per employee, **the sector is way ahead of the average across all U.S. manufacturing** which stands at about $10,000 per employee—and is far ahead of the second and third ranked sectors of “communications equipment” and “semiconductors, which respectively spend $63,000 and $40,000 per employee in R&D annually.

PhRMA Statement on Battelle Report

Consequently, Pharmaceutical Research and Manufacturers of America (PhRMA) President and CEO John J. Castellani issued a statement discussing the results from this report and the biopharmaceutical research sector’s impact on jobs and the American economy.

Castellani asserted that, “at a time when the U.S. is facing a jobs crisis, evidenced by the terrible employment numbers from last Friday, **it is critical that our policymakers embrace dynamic and innovative business sectors such as the biopharmaceutical research sector and refrain from stifling job growth** **through shortsighted proposals** **such as government-mandated price controls** in Medicare Part D.”

Specifically, the PhRMA CEO pointed to a new paper from the Battelle Technology Partnership Practice, which underscored the pharmaceutical sector’s tremendous contribution to America’s economy. Castellani recognized that, “**startling potential job losses would result from undermining the business foundations of biopharmaceutical companies**.”

He noted that the Battelle report estimated “**that a $20 billion per year reduction in biopharmaceutical sector revenue would result in 260,000 job losses across the U.S. economy**” and a $59 billion reduction in U.S. economic activity. As a result, Castellani recognized that, “as the President and Congressional leaders negotiate an important agreement on the debt ceiling and the future of the nation’s economy, it is critical that the jobs crisis is not exacerbated.”

For example, Castellani noted how “the President and some in Congress have proposed including government-mandated rebates in Medicare Part D as part of a debt ceiling agreement.” However, he recognized that “such a provision would have a dramatic negative effect on the economy and patients, and could undermine the success of the Part D program, which has very high beneficiary satisfaction and has cost far less than original government projections.”

He pointed to the “**Battelle numbers, which clearly demonstrated that reducing the biopharmaceutical sector’s annual revenue by $20 billion would be a serious blow to employment**.” Castellani added that, “while the research is not specific to any one policy or event, proposals being considered, such as government-mandated Part D rebates, would be expected to have revenue impact of this magnitude.”

Moreover, he noted that, “Part D is an unparalleled success, providing unprecedented access to life-saving medicines for seniors.” Accordingly, Castellani asserted that PhRMA does not “believe **policies that discourage R&D and cutting-edge science** and **that will inevitably slow the development of needed new medicines are fair for seniors waiting for new treatments against our most challenging and costly diseases**.”

Battelle Report

The Battelle Report quantifies the economic impact of the biopharmaceutical sector on the U.S. economy and jobs using input/output analysis, measures the direct and indirect impacts of the biopharmaceutical sector, and quantifies the economic impacts that would occur if biopharmaceutical revenues increase or decrease from significant changes in the business operating environment.

The report also highlights some of the functional impacts of the sector—the wide-ranging benefits provided through the biopharmaceutical sector’s contributions to enhancing human health, improving life spans and sustaining the high quality-of-life that Americans enjoy—and assesses the contributions of the biopharmaceutical sector to key areas of importance to our economy— innovation, product exports and quality of jobs produced.

The Battelle Report starts by recognizing that the biopharmaceutical sector has all of the characteristics for an ideal industry for economic growth and sustainability in the U.S. Specifically, the biopharmaceutical sector:

Grows in output and employment even in tough economic times

Provides high wage, good quality jobs

Is innovative and deploys high-technology to generate comparative advantage for U.S. companies

Generates significant exports that boost the U.S. economy

Has a strong supply chain that drives further economic growth across the economy through “multiplier effects”

Builds on America’s long-standing strengths and investment in fundamental and applied research

Encourages capital flows to sustain growth, and is profitable to provide funds for reinvestment into the research and development (R&D) cycle;

Generates federal, state and local taxes and other economic contributions that support public services

Is sustainable and not a major drain on global resources

Is geographically dispersed, providing opportunities for job creation and economic growth across many areas of the nation, not just a few selected places

Produces a product of value to society, something that improves the quality of life for humankind, including

Improved life spans (personal longevity)

Improved productivity resulting from prevention and effective management of disease and chronic conditions; and

Reductions in unnecessary hospitalizations resulting in potential cost-offsets elsewhere in the health care system.

Fundamental to major progress in human longevity, reducing the marginalization of individuals from disease and disability, and generally improving our quality-of-life, biopharmaceuticals are a unique contributor to societal and individual well-being.

Moreover, **the output of the biopharmaceutical sector is highly valued by society because the sector develops and manufactures a broad-range of unique products to treat disorders and diseases that, were they to go untreated, can ruin individual quality of life, personal abilities and productivity**. In many instances, biopharmaceuticals are central to helping to prevent and treat a range of public health issues, address pandemic risk and thereby support national economic security.

For example, innovation in the biopharmaceutical sector, combined with the diagnostic and treatment skills of U.S. healthcare professionals, has contributed to a lengthening of the average life span of Americans. In 1900, the expected life span of an American at birth was just 47.3 years. With the advent of more modern medicines and advanced medical knowledge, life expectancy at birth has seen a steady increase rising to 69.7 years in 1960, and 77.9 years in 2007.

In fact, the National Bureau of Economic Research reports that “there is a highly statistically significant relationship between the number of new molecular entities [drugs] approved by the FDA and increased longevity.” Furthermore, Lichtenberg found in a study of FDA data that “approval of priority-review drugs—those considered by the FDA to offer significant improvements in the treatment, diagnosis, or prevention of a disease—has a significant positive impact on longevity.”

Additionally, the American Hospital Association (AHA) notes that “advances in medicine contribute to national economic growth by helping Americans recover more quickly from injury and illness, avoid lost or ineffective work time due to flare-ups of chronic conditions, and live longer with higher quality of life.” **Without effective medicines and treatments for illnesses, injuries, pain and chronic conditions, the productivity of the U.S. economy would clearly be greatly impaired**. **Biopharmaceuticals are a key contributor to a more productive and healthy America and U.S. economy**.

Beyond direct employment in biopharmaceutical companies, the biopharmaceutical sector is the foundation upon which one of the United States’ most dynamic innovation and business ecosystems is built. A large part of the modern biomedical economy is built upon a robust foundation of biopharmaceutical companies that perform and support advanced biomedical and technological R&D, and act as the funnel and distribution engine for getting life-saving and quality-of-life-sustaining therapeutics to the marketplace.

Providing R&D impetus and funding, capital resources, technology licensing opportunities, and a sophisticated market access and distribution system, the biopharmaceutical sector is of central importance to the much broader biomedical and life sciences economy.

**Fueled by private investment capital, venture capital investments, and public/private collaborations, and enabled by the U.S. open market system**, the nation has been able to advance biomedical innovation, which in turn has led to new start-up companies, business growth and exports across the world.

Conclusion

Despite the tremendous success in the biopharmaceutical industry, emerging infectious diseases continue to present new challenges and a substantial volume of long-standing diseases such as cancer, diabetes, neurodegenerative diseases, psychiatric diseases, immunological diseases, etc. continue to demand novel treatments and improved therapeutics. There are millions of people suffering from diseases and disorders for which a therapy has yet to be found. **The need for ongoing biopharmaceutical research and development is simply enormous**.

The only way the U.S. economy can stay ahead of international competition is by using advanced R&D and innovation to drive the growth of high value-added industries. By leveraging investment in federal lab, university and industry R&D, our nation is able to produce high-value, typically technologically advanced products that the rest of the world values highly. In recent decades, **life sciences have come to the fore as a leading driver of U.S. technological innovation and competitive advantage, and the biopharmaceutical sector is a key foundation of the life sciences innovation ecosystem**.

**Bipoharma collapse causes economic meltdown – it’s far worse than previous recessions**

**Howrigon 17** -- Ron Howrigon “(President and Founder of Fulcrum Strategies. He earned a Bachelor's degree in Business Administration from Western Michigan University and a Master's in Economics from North Carolina State University, focusing in the area of Health Economics) http://www.kevinmd.com/blog/2017/01/health-care-crash-u-s-economy.html, January 19 2017, WJ

In recent history, **the U.S. economy has experienced the near catastrophic failure of two major market segments**. The first was the auto industry and the second was the housing industry. While each of these reached their breaking point for different reasons, they **both required a significant government bailout to keep them from completely melting down**. What is also true about both of those market failures is that, looking back, it’s easy to see the warning signs. What happens **if health care is the next industry to suffer a major failure and collapse?**It’s safe to say that **a health care meltdown would make both** **the automotive and housing industries’ experiences seem minor** in comparison. While that may be hard to believe, it becomes clear if you look at the numbers. The auto industry contributes around 3.5 percent of this country’s GDP and employs 1.7 million people. This industry was deemed “too big to fail” which is the rationale the U.S. government used to finance its bail out. From 2009 through 2014, the federal government invested around $80 billion in the U.S. auto industry to keep it from collapsing. **Health care is five times larger than the auto industry in terms of its percentage of GDP, and is ten times larger than the auto industry in terms of the number of people it employs**. The construction industry (which includes all construction, not just housing) contributes about 6 percent of our country’s GDP and employs 6.1 million people. Again, the health care market dwarfs this industry. It’s three times larger in terms of GDP production and, with 18 million people employed in the health care sector, it’s three times larger than construction in this area, too. **These comparisons give you an idea of just how significant a portion health care comprises of the U.S. economy**. **It also begins to help us understand the impact it would have on the economy if health care melted down like the auto and housing industries did**. So, let’s continue the comparison and use our experience with the auto and housing industries to suggest to what order of magnitude the impact a failure in the health care market would cause our economy. The bailout in the auto industry cost the federal government $80 billion over five years. Imagine **a similar failure in health care that prompted the federal government to propose a similar bailout program**. Let’s imagine the government felt the need to inject cash into hospital systems and doctors’ offices to keep them afloat like they did with General Motors. Since health care is five times the size of the auto industry**, a similar bailout could easily cost in excess of $400 billion**. That’s about the same amount of money the federal government spends on welfare programs. To pay for a bailout of the health care industry, **we’d have to eliminate all welfare programs in this country**. Can you imagine the impact it would have on the economy if there were suddenly none of the assistance programs so many have come to rely upon? **When the housing market crashed, it caused the loss of about 3 million jobs** from its peak employment level of 7.4 million in 1996. Again, if we transfer that experience to the health care market, we come up with a truly frightening scenario. **If health care lost 40 percent of its jobs** like housing did, **it would mean** **7.2 million jobs lost.** That’s more than four times the number of people who are employed by the entire auto industry — an industry that was considered too big to be allowed to fail. The loss of 7.2 million jobs would increase the unemployment rate by 5 percent. That means **we could easily top the all-time high unemployment rate for our country**. OK, now it’s time to take a deep breath. I’m not convinced that health care is fated to unavoidable failure and economic catastrophe. That’s a worst-case scenario. The problem is that at **even a fraction the severity of the auto or housing industry crises we’ve already faced, a health care collapse would still be devastating**. Health care can’t be allowed to continue its current inflationary trending. I believe we are on the verge of some major changes in health care, and that how they’re implemented will determine their impact on the overall economic picture in this country and around the world. **Continued failure to recognize the truth about health care will only cause the resulting market corrections to be worse than they need to be**. I don’t want to diminish the pain and anguish that many people caught up in the housing crash experienced. I think an argument can be made, though, that if **the health care market crashes and millions of people end up with no health care**, **the** resulting **fallout could be could be much worse than even the housing crisis**.

**Extinction**

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Several **recent works** on China and Sino–US relations **have made** substantial **contributions to the current understanding of how and under what circumstances** a combination of **nuclear deterrence and economic interdependence may reduce the risk of war between major powers**. At least four conclusions can be drawn from the review above: first, those who say that **interdependence may both inhibit and drive conflict** are right. **Interdependence raises the cost of conflict** for all sides **but** **asymmetrical or unbalanced dependencies and negative trade expectations** may **generate tensions leading to trade wars among inter-dependent states that** in turn **increase the risk of military conflict** (Copeland, 2015: 1, 14, 437; Roach, 2014). The risk may increase if one of the interdependent countries is governed by an inward-looking socio-economic coalition (Solingen, 2015); second, the risk of war between China and the US should not just be analysed bilaterally but include their allies and partners. Third party countries could drag China or the US into confrontation; third, in this context it is of some comfort that the three main economic powers in Northeast Asia (China, Japan and South Korea) are all deeply integrated economically through production networks within a global system of trade and finance (Ravenhill, 2014; Yoshimatsu, 2014: 576); and fourth, **decisions for war** and peace **are taken by very few people, who act on the basis of their future expectations**. International relations theory must be supplemented by foreign policy analysis in order to assess the value attributed by national decision-makers to economic development and their assessments of risks and opportunities. **If leaders** on either side of the Atlantic **begin to seriously fear or anticipate their own nation’s decline** then **they may blame** this on **external dependence, appeal to anti-foreign sentiments, contemplate the use of force to gain** respect or **credibility, adopt protectionist policies, and** ultimately **refuse to be deterred by** either **nuclear arms or prospects of socioeconomic calamities. Such a dangerous shift could happen abruptly**, i.e. under the instigation of actions by a third party – or against a third party. Yet as long as there is both nuclear deterrence and interdependence, the tensions **in East Asia** are unlikely to escalate to war. As Chan (2013) says, all states in the region are aware that they cannot count on support from either China or the US if they make provocative moves. **The greatest risk is not** that **a territorial dispute** leads to war under present circumstances **but that changes in the world economy alter those circumstances in ways that render inter-state peace more precarious**. If China and the US fail to rebalance their financial and trading relations (Roach, 2014) then a trade war could result, interrupting transnational production networks, provoking social distress, and exacerbating nationalist emotions. **This could have unforeseen consequences in the field of security, with nuclear deterrence remaining the only factor to protect the world from Armageddon, and unreliably so**. **Deterrence could lose its credibility**: one of the two **great powers might gamble that the other yield in a cyber-war or conventional** limited **war**, or third party countries might engage in conflict with each other, with a view to obliging Washington or Beijing to intervene.