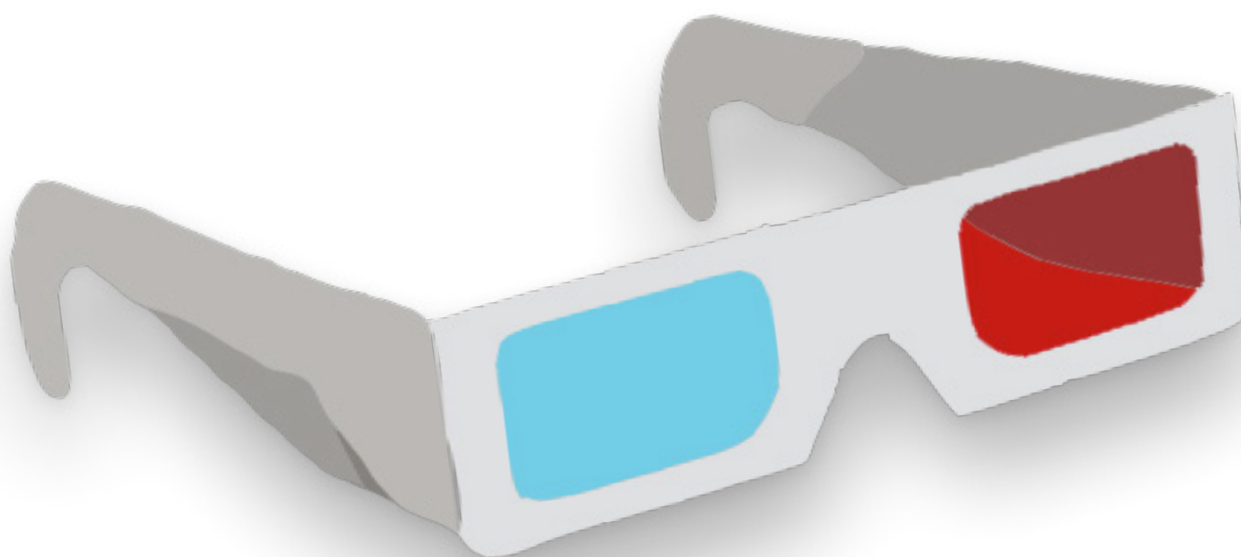


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Issue 7

# equilibrium



## IN THIS ISSUE

Questioning the Efficacy of the Carbon Market • The Case for a Cigarette Tax • Streamer Wars: The Return of the Oligopoly • More

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# TABLE OF CONTENTS

<b>4</b>	From the Editors’ Desk	<b>10</b>	Streamer Wars: The Return of the Oligopoly
<b>5</b>	Questioning the Efficacy of the Carbon Market	<b>13</b>	Stratified Effects of Corporate Greenwashing
<b>7</b>	The Case for a Cigarette Tax	<b>16</b>	Fall 2021 Undergraduate Essay Contest
		<b>17</b>	Fall 2021 High School Contest

Mission Statement: In Berkeley Economic Review, we envision a platform for the recognition of quality undergraduate research and writing. Our organization exists to provide a forum for students to voice their views on current economic issues and ultimately to foster a community of aspiring economists.

Disclaimer: The views published in this magazine are those of the individual authors or speakers and do not necessarily reflect the position or policy of Berkeley Economic Review staff, the UC Berkeley Economics Department and faculty, or the University of California, Berkeley in general.

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# FROM THE EDITORS' DESK

Dear BER Reader,

From disruptive supply chain shocks and inflationary pressures to labor shortages and tax hikes, the global economy has undergone massive changes over the past year. As countries set their sights on recovering from the COVID-19 pandemic, these stark economic frictions have challenged policymakers, business leaders, and academic luminaries with the tireless task of studying and understanding their impacts. In a year as unprecedented as 2021, quality economic research is more pertinent than ever.

Here at the Berkeley Economic Review, we believe that undergraduate students have endless contributions to offer the field of economics. To demonstrate this, we strive to foster a team of budding economists at the University of California, Berkeley and highlight their contributions through our magazine, Equilibrium. As you read through their articles, we hope that our magazine will not only teach you something new about today's most pressing questions, but also impart to you the passion that drives our dedicated undergraduate team. Moreover, we hope that you will find our publication accessible and relatable.

In this edition, our writers will provide you with a deep-dive into myriad current topics that warrant examination. Within the following pages you will be briefed on key issues such as the continuing debate around cigarette taxation through a data-oriented lens. We address the urgency for practical solutions to the climate crisis and examine carbon markets while also investigating age-old questions around industrial organization as technological firms gain increasing market power. Between the carefully selected array of topics and the robustness of our work, we are confident that Equilibrium will prepare you to engage with modern economic challenges and help you in beginning to form your own investigations.

Our dedicated team has worked faithfully to bring you this completed product, which we hope can serve as a testament to our love for economics. With gratitude and pride, we present to you the 7th issue of Berkeley Economic Review's magazine, Equilibrium.

Sincerely,

Douglas Koehler and Pearleen Wang  
Editors-in-Chief  
Berkeley Economic Review



# QUESTIONING THE EFFICACY

BY KAREENA HARGUNANI

After years of companies treating carbon emissions as a negative externality of market interactions, former governor of Bank of England Mark Carney and Standard Chartered Chief Executive Bill Winters are spearheading a task force to expand the market for carbon offsets. Consisting of experts from the sustainability and finance fields, corporate leaders, and pioneering environmental organizations, the Taskforce on Scaling Voluntary Carbon Markets (TSVCM) hopes to replace previous failed attempts by a successful carbon market valued at \$100 billion by the end of the decade.

In this market, carbon is traded as a commodity; big businesses that emit millions of tons of carbon dioxide and other greenhouse gases into the atmosphere each year can balance out the harmful effects of their industrial activities by purchasing carbon offset “credits.” Each credit corresponds to one ton of carbon dioxide, signifying that the purchase of one credit results in the removal of exactly one ton of CO<sub>2</sub>. Organizations like The Nature Conservancy and BlueSource are on the other side of this trade: receiving funding from big businesses for environmental projects including the conservation of forests and the development of direct carbon capture technology.

The trade of credits is viewed by writer George Monbiot as a modern-day form of purchasing indulgences from the Roman Catholic church. Indulgences were analogous to pardons for one’s sins and the sins of deceased loved ones, granting eternal salvation to those who could afford it. The popularity of indulgences was based on two central concepts: (1) absolution alone couldn’t entirely forgive the guilt of sin and (2) the existence of a purgatory, where individuals would continue to repent for their sins posthumously.

The exchange of money for the remission of sin cemented the commodification of personal confession, calling into question the soundness of the Roman Catholic church. If the attainment of salvation could be reduced to, say, financing the construction of St. Peter’s Basilica, what couldn’t be solved by the creation of a market for trade in souls?

Monbiot exposes the apparent parallels between indulgences and carbon credits, thereby implying that the past exploitation of indulgences could foreshadow a corrupted carbon market. According to Monbiot, the reasons for the rise of the carbon market are similar to the underlying principles that called for the rise of indulgences. Carbon credits are a relatively inexpensive way for big businesses to abide by their emissions restrictions without having to spend too much time and money on research and development. By offloading the responsibility of mitigating their CO<sub>2</sub> emissions to other organizations, big businesses are able to continue carrying operations in the same way despite tightening environmental regulations. Hence, these businesses are absolving themselves of their environmental sins by paying others to bear their penance.

In 1989, Applied Energy Services (AES), a global company that distributes power to 15 countries, engaged in the first carbon offset program by funding an agriforest in Guatemala to counteract the negative environmental impact of its new coal-fired power plant. However, a natural question arose from this transfer: how did the development of an agriforest in Guatemala affect carbon emissions from industrial activity in Connecticut? The market for carbon offsets works in the way that reductions in CO<sub>2</sub> emissions anywhere can be viewed as having a countering effect on the release of CO<sub>2</sub> and other greenhouse gases in the atmosphere. As a result, AES contributed \$2 million (\$4.424 million in the present-day) to the intended removal of 16 million tonnes of carbon through a project that aimed to plant 51 million trees in the South American country. In comparison to the cost of developing and implementing new technologies that reduce climate change, AES incurred a cost of mere pennies, paying only \$0.13/ton C (\$0.2765/ton C). The development of a wind farm, on the other hand, currently costs \$20 per removal of one ton of carbon, indicating a vast difference in the price between carbon credits and other methods of combating global warming.

The 1997 Kyoto Protocol encouraged more projects like the one led by AES by officially launching the first “carbon market”: allowing countries that were bound by its stipulated greenhouse gas emissions restrictions to trade carbon as a commodity. It placed restrictions on developed countries, encouraging trade

between developing countries that were reducing their carbon emissions and developed countries that could pay to offset their carbon footprint. However, the plan was poorly structured as it excluded developing countries from reduction requirements and failed to set guidelines for the terms of trade. As a result, many countries, including the United States, withdrew from the agreement, reducing demand for carbon credits so that the market failed to gain enough traction. Moreover, the market was rampant with corruption: a 2015 study found that 80% of projects were of low environmental quality and actually induced an increase of 600 million metric tons of carbon.

While the first carbon offset project took place more than thirty years ago, the market has only recently evolved to include influential environmental players supplying carbon credits and big businesses demanding them. One of the largest environmental organizations involved in the market is the Nature Conservancy, which partners with landowners around the globe to tackle climate change through nature based solutions, promoting smart clean energy policies, building resilience, and inspiring productive conversations.

Recent studies find that carbon offsets are being used to fund projects that would have been implemented regardless of the cost to large corporations. The Nature Conservancy has recruited landowners who do not plan to carry out deforestation anyway, calling the efficacy of carbon offsets into question. Many of the Conservancy's projects cite that the areas receiving aid are expected to be "heavily harvested" without the Conservancy's help, but a discussion with landowners proves that this may not be true. One example is Hawk Mountain, a forest in Philadelphia that attracts thousands of visitors each year and hasn't been harvested in over 85 years. Director Laurie Goodrich stated that Hawk Mountain would operate in the same way it did before without the money from carbon credits, explaining that the money primarily enables the organization to enhance the forest's health. Project documents, on the other hand, show that carbon credits were generated under the conjecture that the trees would have been cut down without the funding.

This instance is just one of many indicating that there is no concrete evidence that carbon offsets prevent climate change and mitigate the ongoing risk that big businesses pose to the environment. Researchers

at CarbonPlan, a non-profit organization that analyzes solutions to climate change, found that \$400 million were spent on carbon credits in California without actually removing a single ton of carbon dioxide. Consequently, each credit does not necessarily correlate to the removal of one ton of carbon dioxide from the atmosphere. The positive effects of carbon offsets are often exaggerated, falsely creating an illusion of net emissions neutrality.

During the first ten months of 2020, more than 55.1 million carbon credits were used, a 28% increase from the same period in 2019. This increase marks an expansion of the voluntary carbon market, indicating that more companies are utilizing carbon credits as a way to cover their carbon footprint. Since these carbon offsets actually lead to less change than they boast, companies are likely making less environmental improvements than claimed.

The commodification of carbon offsets may also detract from focusing on using clean energy and reusable materials. With corporations utilizing carbon offsets as a simpler way to ease their environmental impact, companies are less motivated to invest in the development of green energy. Owen Hewlett, a member on the advisory board of Science Based Technologies initiative (SBTi), claims that "you can't offset your way to net zero," explaining that in a net zero world, there shouldn't exist carbon credits that can be transferred. Each country needs to be able to reduce its own carbon footprint rather than allowing other countries to bear this responsibility in exchange for funding.

The concerns outlined above indicate that it is wise to approach Carney and Winters' plan to expand the carbon market with caution, as it could potentially become a loophole through which corporations are able to make emboldened claims of carbon neutrality. Similarly to how money tainted the value and purpose of eternal salvation via indulgences, money threatens the goal of reaching net zero emissions and reducing the impacts of climate change.



# THE CASE FOR A CIGARETTE TAX

BY NATRAJ VAIRAVAN

## Background

According to the CDC, in 2019, approximately 34.1 million adults living in the United States smoked cigarettes regularly, making smoking a very prevalent public health crisis in our country today. Undeniably, smoking causes many significant health issues for a person, such as an increased risk of death, deteriorated lungs, and cardiovascular disease. As a result, the question we have to ask ourselves is what policy we can implement in order to reduce smoking among adults. One such answer to this question could be to raise federal taxes on cigarettes, which could potentially disincentivize people from buying more.

Whether or not cigarettes are an elastic or inelastic good is still somewhat unclear. Using data from Spain between 2002 to 2016, cigarettes are, in the long-run, an elastic good, and the authors suggest policymakers can increase taxes and central prices to influence the choice of buying cigarettes. On the other hand, an article written in 1999 by professor Sam Wylie at the Tuck School of Business, Dartmouth suggests that cigarettes are indeed inelastic goods and notes the deadweight loss is great. As a result, whether or not raising taxes on cigarettes will reduce smoking is still obscure.

## Data

I decided to look at historical data from the year 1995 to see the effect of prices and taxes on cigarettes really did reduce the consumption of cigarettes. The dataset I used is from the Applied Econometrics with R package, and it contains data on real prices of cigarette packs, real excise taxes on cigarette packs, and the average amount of cigarette packs bought in a year—this dataset also encompasses all 50 states, and so it gives us a holistic picture of the United States as a whole.

Although the data is from 1995, generally speaking, the results could still have policy implications on how an increase in cigarette taxes could influence consumer behavior today.

## Method

I created the following models:

1.  $\text{RealPrice} = \beta_0 + \beta_1 \text{RealExciseTax} + \varepsilon$
2.  $\text{Packs} = \beta_0 + \beta_1 \text{RealPrice} + \beta_2 \text{RealExciseTax} + \varepsilon$
3.  $\text{Packs} = \beta_0 + \beta_1 \text{RealPrice} + \varepsilon$
4.  $\text{Packs} = \beta_0 + \beta_2 \text{RealExciseTax} + \varepsilon$

RealPrice is the price of a cigarette pack in 1995 dollars. RealExciseTax is the dollar amount of the sales tax placed on a pack of cigarettes, again adjusted for 1995 dollars. Packs is the variable I use to denote the number of cigarette packs bought per capita in 1995.  $\beta_0$  is the y-intercept of the linear regression equations I use in my models.  $\beta_1$  and  $\beta_2$  are coefficients of a certain variable in my models.  $\varepsilon$  stands for the error in my model.

## Discussion

The first model looks at the relationship between RealPrice and RealExciseTax. If we can deduce that an increase in taxes is correlated with prices, then it is very likely that, all else held constant, there is a causal relationship here.

In the second model, I look at the impact of both prices and taxes on the number of packs bought. This is the model I will use to determine if the effect of a change in prices on cigarette pack consumption drowns out the effect of a change in taxes on cigarette pack consumption, meaning the change in prices has a more significant effect.

In the third model, I solely look at the relationship between prices and packs. Because the second model also accounts for tax, I must isolate the effect of a change in price on a change in consumption in the third model. The fourth model simply isolates the impact of a rise in taxes on packs, similar to the third model. The third and fourth models allow me to look at the individual effects of the two variables RealPrice and RealExciseTax on Packs to determine if one has more influence than the other.

The final section of the discussion is about elasticity, in which I use the data from 1995 to calculate the elasticity coefficient to show the effect of price changes on quantity demanded.

Model 1  
First, we must confirm that there is a strong relationship between RealPrice and RealExciseTax.

```
t test of coefficients:
      Estimate Std. Error t value Pr(>|t|)
(Intercept) 99.90619    3.51760 28.4018 < 2.2e-16 ***
rtaxdiff     3.79113     0.61371  6.1774 1.569e-07 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Given that the variable and y-intercept are statistically significant (p-values of  $1.569e^{-7}$  and  $2.2e^{-16}$ , respectively), it is clear that as taxes rise, prices rise as well and that just accounting for tax increases in price increases is enough. The OLS shows us that for every \$1 tax increase, there is an associated \$3.79 increase in real prices for cigarette packs.

Model 2  
The second model observes the relationship between Packs, RealPrice, and RealExciseTax.

A t-test of the second model is shown below:

```
t test of coefficients:
      Estimate Std. Error t value Pr(>|t|)
(Intercept) 217.35295    27.01773  8.0448 2.967e-10 ***
rprice      -1.03931     0.26759 -3.8840 0.000334 ***
rtaxdiff     0.73535     1.61520  0.4553 0.651106
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Our results are statistically significant except for the tax difference variable (RealPrice has a p-value of 0.0003, but RealExciseTax has a p-value of 0.65). This is possibly because the tax difference is already accounted for in our price, and so RealPrice does indeed drown out RealExciseTax. In order to isolate each variable's effects, I run the test again, but this time separating the effect of taxes and prices on cigarette pack consumption.

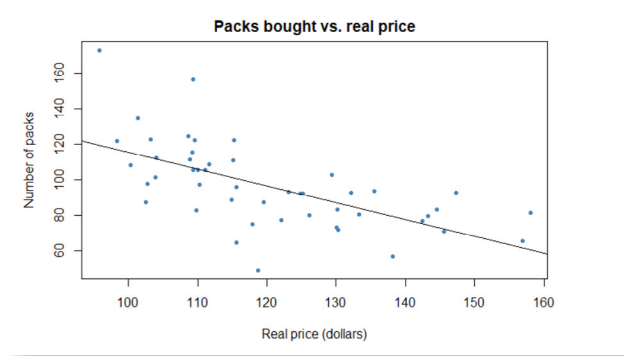
Model 3  
The third model looks the relationship between Packs and RealPrice.

A t-test of the third model is shown below:

```
t test of coefficients:
      Estimate Std. Error t value Pr(>|t|)
(Intercept) 210.33418    22.30273  9.4309 2.537e-12 ***
rprice      -0.94814     0.17546 -5.4037 2.243e-06 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

As we can see, our results are statistically significant (p-values are  $2.243e^{-6}$  for RealPrice and  $2.537e^{-12}$  for the y-intercept), and for every \$1 increase in real prices, there seems to be, approximately, a one pack decrease in cigarette consumption. This relationship is also illustrated

in the graph below:



There is a somewhat strong negative correlation between real prices and packs bought, suggesting that an increase in prices could affect consumer behavior in the desired way.

Model 4  
The fourth model looks at the relationship between Packs and RealExciseTax.

A t-test of the fourth model is shown below:

```
t test of coefficients:
      Estimate Std. Error t value Pr(>|t|)
(Intercept) 113.5192     7.1060 15.9752 < 2e-16 ***
rtaxdiff     -3.2048     1.0662 -3.0058 0.00428 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Our results are statistically significant to the point where  $p < 0.001$  (0.04 for RealExciseTax and  $2e^{-16}$  for the y-intercept), which is still very significant. This shows us that for every \$1 increase in real taxes, there is an estimated three pack decrease in cigarette consumption.

Elasticity

Using the below formula for elasticity, we calculate that the price elasticity of demand for cigarettes is approximately 0.95, which shows that this good is very close to unit elastic. First, I took the mean of RealPrice and and Packs—let us call those variables  $RealPrice_{mean}$  and  $Packs_{mean}$ . We compute  $(RealPrice_{mean} + 3) / (RealPrice_{mean})$  for  $(\% \Delta P)$  because each \$1 increase in taxes corresponds to a \$3 increase in prices, so we add 3. On the other hand, we calculate  $(Packs_{mean} - 3) / (Packs_{mean})$  for  $(\% \Delta Q)$  because this is the corresponding decrease in packs demanded after the tax (and subsequent price) increase. We divide  $(\% \Delta Q)$  by  $(\% \Delta P)$  to get our elasticity of 0.95.

$$\epsilon = |(\% \Delta Q) / (\% \Delta P)|$$

$\epsilon$  is the variable we use to show the elasticity coefficient.  $(\% \Delta Q)$  is the percent change in quantity demanded for a good.  $(\% \Delta P)$  is the percent change in price for a good. We divide  $(\% \Delta Q)$  by the  $(\% \Delta P)$  in absolute value to find our elasticity coefficient.

Conclusion

Based on the data presented in 1995, our findings in the first model were that if there is a \$1 increase in taxes, there is an approximate \$3-4 increase in prices for cigarette packs. This is consistent with the third model, which suggests that a \$1 increase in prices leads to a one pack decrease in consumption. Thus, for every \$1 increase in taxes, we will see a decrease in consumption of about 3 packs, which is what the fourth model shows us. On the topic of elasticity, what the results show us is that because cigarettes were unit elastic.

Even though the data was collected in 1995, these insights are important for health policy today because of the general principle that human behavior stays relatively consistent. This research shows that

increasing taxes on cigarettes slightly could potentially reduce the amount of cigarettes an adult purchases. However, this alone will not solve the smoking crisis, as made evident above in the elasticity calculations—an increase in taxes will only have a minimal effect of the reduction of cigarette consumption. This policy is just the first step. We must implement other policies such as educational programs to prevent people from smoking and offer counseling programs to those who need help quitting in order to achieve a healthier society.





# STREAMER WARS: THE RETURN OF THE OLIGOPOLY

BY RIA BHANDARKAR

It wouldn't be hyperbolic to say that the entertainment industry is experiencing one of the biggest disruptions of any sector in the American economy. Since well before the COVID-19 pandemic, more and more films and television series have been distributed on streaming platforms rather than cable, network channels, or theaters. However, after the pandemic began, and as more and more viewers wanted easy access to content without venturing outside of their homes, streaming services have exploded. Online video streaming services reached over a billion subscriptions in 2020. That's 50% more than before the pandemic.

While it seems to be smooth sailing for streaming platforms, there are plenty of caveats to consider when quantifying the dominance of Netflix, HBO Max, Hulu and other streaming platforms. Some streaming services, such as Apple TV+, are vague about their total subscribers and views per content. For example, Netflix counts a user watching two minutes of a movie as a view, meaning that relatively highly viewed content may not be retaining many subscribers. As a result, the massive numbers reported by these platforms can't be taken at face value; there is still plenty of room for growth.

Meanwhile, the success of the streaming industry as a whole doesn't mean that each firm is doing well. There have been plenty of exits (Quibi and YouTube Premium) and mergers (WarnerMedia and Discovery) which are slowly lowering the number of competitive services available. In a world where there are a few, powerful services, each with their own successful content library, the number of exclusive contracts with creators will increase, leaving less content available on multiple platforms. Unlike theater chains, which generally show the same films as their competitors, streaming services are unique and users have to choose which media is worth signing up for. This is reminiscent of the old studio system in Hollywood, where individual studios owned theaters and exclusive access to actors and directors. Is the entertainment industry slowly working its way back to that oligopoly or are there too many constraints for that to be inevitable?

Where They Stand

Netflix, Hulu, and Amazon Prime dominated

the pre-pandemic streaming market, with Netflix being practically synonymous with the idea of streaming. In 2020, Netflix remained

the most dominant streaming service but its share dropped below 50% for the first time. Competitors have started eating into its share and the platform reported that it had added two million fewer users than forecasted for the first quarter of 2021. Its shares subsequently fell by 10%. Luckily, Netflix finally became truly profitable in 2020, and no longer borrows money to fund its content. As far as streaming platforms go, despite the increasingly competitive terrain it operates in, Netflix is in good shape.

Newer services are using innovative strategies to secure a consistent user base. Hulu has survived with a unique model of having a regular plan and a cheaper ad-supported plan. This system previously helped attract new subscribers when the platform was considered a novelty. However, company recently it would be increasing Disney is a majority Hulu and is similarly ESPN+. Meanwhile, its

the announced that its prices by a dollar. stockholder in raising prices for competitor Amazon

Prime is launching more services around the world, such as Mubi in India. Its strategy is to become more global, rather than producing more original content.

Numerous other platforms launched during the pandemic and the results have been mixed. Successful endeavors include Disney+, WarnerMedia's HBO Max, Paramount Plus, and Peacock. Disney+ surpassed 100 million subscribers after being available for less than a year and a half, likely since it had the strongest brand name and most popular IP. It debuted with a Marvel series such as WandaVision and The Mandalorian, which takes place in the Star Wars universe. Disney+ is proof that success for a streaming service requires a signature series and high profile content to make it to the top.

HBOMax was similarly successful, adding more subscribers than Netflix during the first quarter of 2021. The company announced a new strategy this year where it would be releasing major Warner Bros. films on its site the same day that they are theatrically released. Although this is likely the reason why more users joined the platform, there was backlash from theater owners, agents and filmmakers, with notable directors such as Christopher Nolan refusing to work with the studio in the future.

Paramount Plus and Peacock also survived the pandemic. Paramount Plus reached 36 million global subscriptions since launching in 2021; however, their long-term strategy is still unclear since the company has restructured its leadership team. NBC's Peacock initially struggled but made a leap after Netflix's rights to stream The Office expired, allowing the show to be available on Peacock. The service also benefited from airing clips of the Olympics.

Only Quibi and YouTube Premium have exited the market, for very different reasons. Quibi began as a more expensive alternative to TikTok, featuring short episodes of original television shows. Its budget mainly went to attracting major stars for its projects. Unfortunately, the pandemic meant that there was less of a need for short form content and the service did a poor job marketing, with one survey indicating that people thought it was a food delivery service. YouTube Premium, on the other hand, cancelled most of its original

programming to avoid market competition.

The increased number of services doesn't just indicate that the streaming industry has become more competitive, but also that the entertainment industry as a whole is being transformed. Now that content can only be seen on one platform, media distribution is looking more and more like a small group of companies hoarding film and television.

The New Old Hollywood

On May 4, 1948, the Supreme Court ruled in the Paramount Consent Decree that one company could not own both a film studio and theater chain. This ended the widespread practice of "block booking," when studios would force theaters to purchase a package of movies from a studio. Since then, each film has had to stand on its own in terms of profitability. On November 20, 2019, that ruling was re-reviewed by the Department of Justice so that companies no longer have to apply for exceptions, a consequence of the Trump administration's move toward deregulation. Now companies can buy movie theaters to air their movies, leading to vertical integration.

Even without the end of the Paramount Decree, the return of the Old Hollywood oligopoly was already in the works. The decree's goal was to separate content creation from content distribution and to make all content equally accessible; now, each platform has exclusive rights to certain television shows or films, similar to how studios used to own theaters. The Hollywood industry was already comparable to Big Tech and the dominance of Facebook, Google, and Amazon. With the Biden administration setting an antitrust agenda that specifically targets those large tech companies, the future could have more obstacles for streamers and create more market competition.

A study done by the University of Cambridge suggests that streamers shouldn't expect the landscape to remain stagnant. The authors differentiate between the "commitment logic" used by viewers who prioritize watching films on the big screen and the "convenience logic" which helps fuel streamers. Commitment logic is defined by the need to heighten the film-viewing experience by being in a theater with better sound quality and a larger screen. Meanwhile, convenience logic encourages viewers to prioritize the most accessible method of seeing a film. The study concludes that rather than one overpowering the other, a third system will emerge. Maybe that alternative will look like streaming service-owned theaters. Netflix has purchased multiple theaters in the United States which exclusively show their films since chains like Regal and AMC are unwilling to partner with them. In essence, rolling



back the Paramount Decree could turn the entertainment industry from being similar to the old studio system to being exactly like it.

The True Underdog: Theaters

Clearly, theaters have been at the mercy of production companies since the early days of the film industry. Their existence depends on whether or not studios can cooperate with them, even if there is little incentive to do so. The film industry is no longer a place where producers focus on films that sell the most tickets, and the television industry is not about ratings. Rather, streaming services care more about providing consistent content to gain and retain consumers. As seen with Disney+ and its Marvel and Star Wars universe shows, streaming services need original content viewed exclusively on their platforms to increase their subscriber bases. Sending a movie to the theaters would be counterproductive.

Some data indicate that theaters aren't at the end of their lifespan. An EY study revealed that consumers who use streaming services the most are also frequent theatergoers. However, even though film and television lovers might go out of their way to maximize the number of films they see every year, that still doesn't take into account the fact that different content is available in theaters versus online platforms. In a world where Netflix shows their films in theaters or films go straight to streaming services as soon as they are released,

will the study's conclusion remain true in the long term?

The one beacon of hope for theatrical releases comes in the form of blockbusters, which many viewers prefer to see on a larger screen. During the pandemic, Disney+ and the aforementioned HBOMax released films in theaters and online on the same day. The Marvel film Black Widow was able to have a \$80 million opening weekend in theaters despite being available for purchase on Disney+, where it made \$60 million. However, large studio films are still the exception. It remains to be seen if theaters can live on while only showing major tentpole releases.

Conclusion

The rise of streaming services will inarguably transform the way that film and television are produced and distributed. However, instead of entering a new era, the entertainment industry may be simply slipping back into an old one. The current battle between streaming services is more similar to the battle between old studios such as MGM, RKO, Paramount, and 20th Century Fox. The main difference is the addition of the Internet: now, the convenience of watching content from home could destroy theaters, the least powerful factor in the equation.

The streaming industry as it exists goes against antitrust principles by consolidating content to a few giant companies such as Disney, WarnerMedia and ViacomCBS, who merge with

smaller services such as Starz and Discovery+ to slowly increase their market shares. Meanwhile, the existence of streamer-owned theaters goes against the very ideals which led to the Paramount Decree, a policy which was held for over eighty years.

Now, the best hope for creating a more competitive market is the Biden administration increasing regulation of the industry. That is still a big task to undertake and must come with the oversight of the big tech industry as a whole. Until then, consumers will have to decide where to get their money's worth as the choices available seem to simultaneously increase and decrease.

# STRATIFIED EFFECTS OF CORPORATE GREENWASHING

BY LEA YAMASHIRO

Perhaps not quite as old activists foresaw, the ever-relevant, rapid mainstreaming of environmentalism had spawned a new age of consumerism. Thrift stores are the new strip malls; millions of consumers boycott corporate giants with one post on TikTok; eco-labels representing the lifecycle of everyday products take center-stage in our purchasing decisions. We've collectively stopped ignoring climate change, as it is no longer a future prospect, but a crisis of the present – and consumers increasingly demand that their everyday purchases align with their collective environmental conscience.

The average consumer – slowly but surely – is going green.

Many nationwide studies have verified that on average, somewhere around 50% of American shoppers are willing to pay more for sustainable products – ones that we define to provide more environmental and social benefits than their conventional counterparts. But a wholesale lifestyle change obviously proves unaffordable for many (or most), which only contributes to the decades-old gatekeeping of environmentalism as a wealthy-white-dominated movement. Sadly, in the sphere of economic elitism surrounding sustainability, there is more yet threatening to render the average individual's perceived power of ethical consumerism completely obsolete.

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The green-consumer consciousness shift starting in the 1990s has come with many changes to the industry from all sides of the economy. As awareness of individual environmental impact has risen, so has consumers' desire for their purchasing power to go towards goods and services that minimize environmental harm. According to a study by public relations firm and Porter Novelli affiliate CONE, over 90% of global consumers want companies to address social and environmental issues. Consequently, companies have ascertained that with some fundamental manufacturing, distribution, and marketing changes, they could satisfy the ethical desires of their consumers and turn a profit (hence benefitting from improving their general social image). And it works – a study found that from 2013-2018, for products with visible sustainability claims, sales grew 5.6 times faster than those that did not.

But producing sustainably takes financial tolls on businesses. Why?

In the past, when calculating production costs, companies never accounted for the financial value of their environmental harm, known as "environmental externalities." Sustainable production requires that companies actually take the cost of these externalities into account, no longer treating natural resources (and the damage done to natural ecosystems as a result of production, like waste management) as monetarily free. These higher manufacturing costs, along with higher and more ethical labor costs, in addition to a general lack of demand, results in businesses having to up their prices.

With prices increased for sustainable products, fewer people can afford to consume what they believe to be ethically and environmentally sound. A Kearney report found that sustainable products are, on average, 75-85% more expensive than conventional ones. A different Telegraph piece found that on average green goods cost around 50% more – and this checks out. In 2020, a British financial institution called Nationwide Building Society surveyed 2000 people in which 59% reported financial incapability of making eco-friendly choices in their everyday lives.

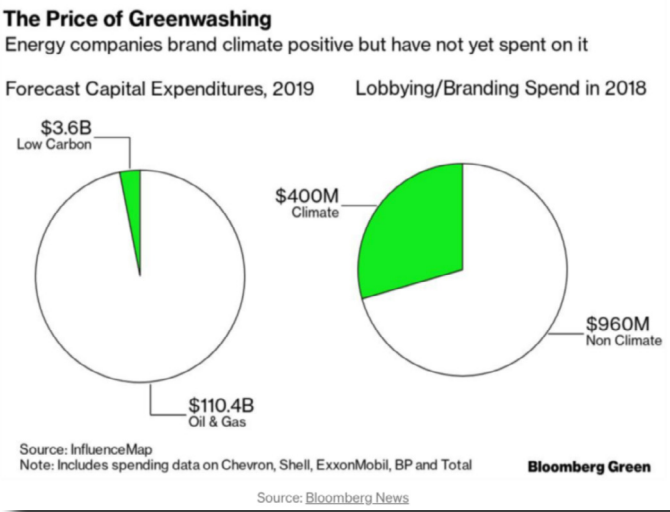
Basically, more than half of all people in developed countries like the U.K. cannot afford to "go green," which would make sense, if the average "green" good costs 75% more. Another comparatively optimistic study conducted by CGS found that only 35% of 1000 surveyed participants would pay for a sustainable good marked up at 25% of its conventional price, confirming that well over half of the population cannot afford to make "green" choices.

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With the obvious profitability of the green market and this increase in demand for sustainable goods has also come some disappointing behavior on the part of firms who engage in the phenomenon of "greenwashing" – the act of claiming a good has environmental benefits that are untrue or inaccurate as a marketing tool to make products more desirable to the average consumer. Essentially, companies are outright lying to consumers about the environmental impacts of their investments in order to increase profitability of their products. And it's categorically a bummer, because some companies will devote



a good chunk of their budget towards sustainability advertising without making real changes. The following graphic is a demonstration of this:



Through the years, many notable companies have been accused of and proven to be greenwashing, such as ExxonMobil, IKEA, Nestle, Coca-Cola, Starbucks, and others like them. The common thread was brands marketing their goods as “carbon neutral” or “sustainable” and making similar public statements with “ambitions” and long-term goals of being 100% recyclable or “getting all the plastic bottles back.” Yet simultaneously, these companies were found having made little or no infrastructural changes in manufacturing to offset or mitigate their pollution or waste. The claims proved baseless and performative; they were reaping the profitable benefits of going green without actually going green.

In 2021, the International Consumer Protection Enforcement Network (ICPEN) conducted a global “sweep” – essentially a credibility test – of almost 500 international websites marketing goods and services identified with environmental branding – either companies marketed their goods with catch-phrases like “eco,” “sustainable,” “all-natural,” “reusable,” or had labels and logos suggesting green practices. They found that on average, 4 in 10 of these companies either a) lacked evidence to back up their environmental practice claims, b) adorned brand or eco-logos not associated with any accredited third-party certification organization, or c) were actually hiding or omitting information about company practices, like a product’s pollution levels. The European Trade Commission (ETC) conducted a similar report on greenwashing in the European Union and came to a similar result (around 42%). So, based on these reports, we conclude that almost half of all businesses claiming to be sustainable (and likely charging a higher price because of it) were either lying or lacked clear evidence to support this classification.

To recap: we have a disparity in the ability to make eco-conscious choices, and a disparity in the validity

of those choices (companies engaging in the greenwash-technique take the role of fundamentally invalidating these choices.)

If sustainable goods cost on average 75% more, and 35% of consumers are willing to pay an extra 25%, then we have a minuscule amount of the population who can afford to pay, on average, for these products – as the CGS study reported, the 5% who were willing to pay for a 100% price increase.

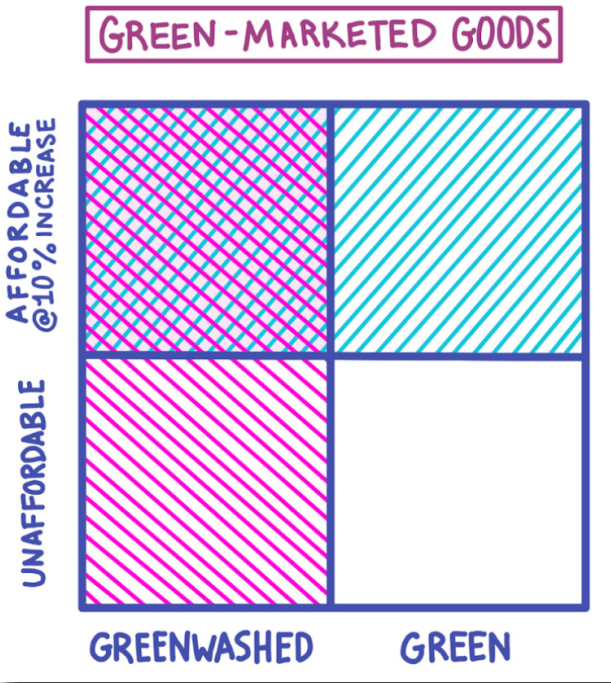
But let’s take a look at that lower 35% willing to pay an extra 25%. Following a normal distribution, we could say even 40% or 50% who are willing to pay for a 5-10% price increase. This demographic would encapsulate those for whom sustainable-consumption is generally out of reach with the exception of goods located just within an affordable price range to match their willingness to spend guided by their environmental conscience.

If we distribute the probability of the previously-discussed greenwashing evenly across all green-marketed goods (let’s just say 50/50), this 50% who are just able to afford a price hike are still, only about half of the time, going to be spending on goods whose production truly aligns with their values. The other half of the time, that extra 10% in value they paid for the “green good,” which, for the average consumer, means a lot in the long run, is not going towards a business or business practices that align with their environmental values, but rather is solely going towards the business in the form of profit, delivered on a basis of corporate lies. The greenwashing companies are therefore profiting both from sustainable marketing and irreversible environmental harm, while this well-intentioned, middle-or-lower-class consumer ends up 10% in the hole.

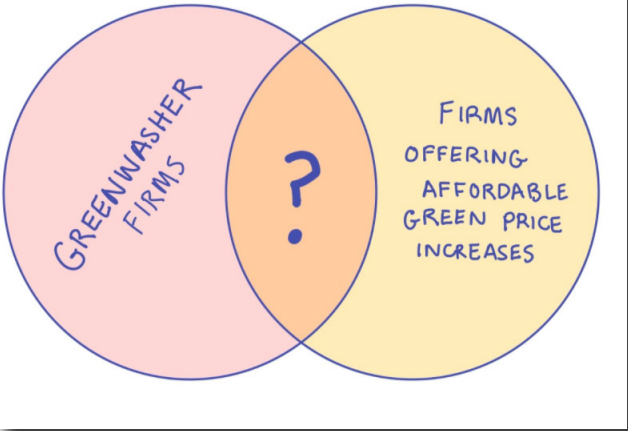
This leaves some questions worth further inquiry – looking at the more affordable green goods (with price increases in the 5-10% range), what percentage of the companies producing them are accused of greenwashing? I would postulate it is more than 50%, as larger companies that sell goods at lower price points have more to gain from small price increases under the guise of “environmentalism,” and probably are bigger, more powerful and can afford the potential social blow of being caught, which would likely take form as relatively only a few customers compared to their entire consumer base.

And of the companies that are indeed greenwashing, how much are they profiting from doing so? Do the majority of profits come from the more modest consumer comfortable with the 10% price increase, or from the smaller wealthy percentage of buyers willing to pay for upwards of a 100% price increase? Are companies perhaps using these metrics to target certain demographics (perhaps those with fewer resources, less education) with untruthful environmental ad campaigns knowing certain people do not have the resources to question their truth and validity?

One way we could attempt to narrow down these questions is to examine firms within the greenwashing-accused group, determine the internal factors (holding external factors such as regulation and social pressure constant), that drive them to engage in this behavior, and cross reference with the firms within this cohort offering more affordable green-motivated price increases. According to a report done at Columbia University, there are many internal drivers of greenwashing. Some are more associative (like a firm’s public history and internal guilt associated with bad pollution practices) and others can amount to varying “incentive structures” and “ethical climates.” These are defined as structures where employees at higher managerial levels are rewarded for achieving arbitrary monetary goals, and climates due to company norms with differing goals for maximization, respectively. “[Greenwashing] is more likely to occur among brown firms with egoistic, rather than benevolent or principled, ethical climates.” Egoistic firms are characterized as having “norms that support the satisfaction of self-interest.” It is not hard to infer where certain well-known corporations might fall on this scale of ethics and incentive structures.



Let’s take a company like Coca-Cola, for example, a historic multinational firm currently valued at around \$230 billion (Coca-Cola has been accused of greenwashing.) The average 6-pack of Coke drinks costs \$2.67. At a human population of almost 8 billion, each human consumes at least one Coca-Cola product every 4 days. Recent data states that adults with under \$10,000 in their bank accounts make up 53% of the global population. It suffices to say that the average consumer in that 53% can afford to buy a coke or even a pack. Now let’s say Coca-Cola implements a 3% price increase on their average \$0.99 coke due to what they claim is a supply-chain switch-up



that rendered their production practices for all cokes in the world more “environmental,” and brand it as such; in this situation, consumers of all income brackets could feel just that much better about what they were buying – it’s not a lot, but it’s meaningful.

We could expect a negligible change in demand but a meaningful increase in consumer satisfaction, both with respect to the company and with respect to themselves – ethical, environmental fulfillment for those who can afford it the least. Sure, it would only raise the price to \$1.01, adding 2 cents. But with our highly-simplified numbers, Coca-Cola would be making at least \$40 million more a day, just by claiming their product was more green than before. Massive corporations selling products at low price points have the most to gain from a little greenwashing. But this also means that, if greenwashing occurs with large corporations with at least the same frequency as it did in the ICPEN study, those in the lower 50% are more likely to be tricked into believing that they’re doing something positive (no matter how small) in the fight for climate change; it would mean that the majority of people being robbed of getting to truly put their “money where their mouth is” are the lowest-income people in our society. This would require further research, but we get the picture.

We already know that consumer-based environmentalism is locked by a form of economic-gatekeeping that only lets the wealthy elite make ethically, socially and environmentally gratifying consumption decisions. But for the larger portion of our society that can afford just a small amount of price change with the hopes that it is going towards protecting, preserving and ensuring the survival of our planet, an even smaller portion is being given the true, honest gratification and resolve of their money doing just that. Environmentalism was already being gate-kept by price differences in the market; greenwashing just makes environmentalism that much more inaccessible.

# UNDERGRADUATE ESSAY CONTEST:

GIVEN THE RISING PROMINENCE OF CRYPTOCURRENCIES, THERE HAVE BEEN CONCERNS RAISED OVER THE USE OF DIGITAL ASSETS.

DISCUSS THE ADVANTAGES AND DISADVANTAGES OF CRYPTOCURRENCIES. SHOULD THE US GOVERNMENT

ENACT MORE REGULATIONS ON THE ESTABLISHMENT AND THE TRADE OF CRYPTOCURRENCIES?

## BY AKSHAR KATARIYA

Digital assets such as Bitcoin give gold, fiat, and central bankers a run for their worth. Experts predict that the market capitalization of Bitcoin will surpass that of gold by the end of 2030. But, as the case is with many innovations, it has its shortcomings. This essay will discuss the possible flaws of digital assets and whether the US government should intervene.

In March 2021, Tesla allowed customers to buy its cars using bitcoin, the most valued and traded digital asset, a policy that was not only short-lived but also an unintentional irony to Tesla's pledge of zero emissions. Bitcoin mining consumes 0.55 % of global energy production. This huge proportion of energy being devoted to a digital asset begs the question: Does Bitcoin do more good than harm? This question gets more relevant by the day as countries pledge Billions of dollars investing in renewable energy post the COP26 summit.

An Australian study found that 44 % of all transactions are associated with illegal activity. The volume of this illicit trade is comparable to that of the US market for illegal drugs. These unlawful activities interfere with the current monetary systems as people find novel ways to send money offshore for tax avoidance and money laundering. Digital asset transactions are anonymous. This promotes the fundamental right to privacy. But, this anonymity, or lack of surveillance, paved the way for making digital assets a haven for illicit activities.

However, the need for cryptocurrency is understandable. The underlying technology in most digital assets is based on the blockchain framework, which promotes the decentralization of power. This shared database of transactions ensures no third-party involvement. Assurance of such sophistication is not found in fiat currencies.

Moreover, people have begun to question the validity and are frustrated by the extent of loose monetary policies. This has deepened since the pandemic as countries' policy response was to give out stimulus packages that were financed by printing currency. This has led to the onset

of inflation. USA and India, whose citizens hold most of the cryptocurrencies in circulation, are seeing inflationary tendencies. In a situation where the value of your currency depreciates by the day, citizens will be prompted to invest in a currency whose intrinsic value is not a function of politics.

Digital assets are promising, but right now, they are causing negative externalities. Research in public economics tells us that government intervention is necessary to reduce the extent of this externality or to eliminate it. Climate change is the gravest danger to humanity. Countries are stepping up, switching to cleaner fuels, and, to the world's surprise, changing policies at the cost of their vote bank. In this context, sustaining a wasteful digital asset is not a clever choice. Governments must intervene in the establishment of digital assets. Norms must be set which put a cap on energy, land, and water consumption. Entities must be fined appropriately for any violations. Lawmakers should understand the urgency of such policies instead of abstaining from recognizing the presence of digital assets. Only when they formally recognize it will they be able to place policies to regulate the establishment of such assets.

Owing to the bulk of illicit transactions using digital assets puts people at risk of fraud, risks a country's national security. This gives governments cause to regulate and monitor the digital asset trade. However, governments must proceed with caution as doing so would also compromise the privacy and autonomy of people— the very principles of blockchain technology. Proponents of digital assets believe that regulation is harmful and don't consider that regulation also leads to increased openness and fairness. These attributes are essential for new entrants into the market, given that digital assets are relatively new to people and governments.

# HIGH SCHOOL CONTEST:

THE U.S. HAS BEEN RAISING THE DEBT CEILING FOR DECADES. DISCUSS THE ECONOMIC IMPLICATIONS OF THE

CURRENT DEBT CEILING CRISIS. WHAT ARE SOME LONG-TERM SOLUTIONS THAT COULD BE IMPLEMENTED?

## BY ADITI PAVULURI

Come December, politicians will once again be faced with funding a costly infrastructure and social welfare investment plan, approving several expenditures amounting to trillions of dollars, and revisiting the age-old debt ceiling crisis. With President Biden's plans for high-cost legislation in the near future, raising the debt ceiling is imperative to avoiding a potential recession if the US were to default on its debt. The Treasury is running out of emergency liquidity to finance its monetary obligations after the most recent suspension. The debt ceiling isn't a good measure of the current state of the economy, it gives way to misguided policy making and political warfare, and it can cause serious damage if not lifted. Therefore, government officials must devise a solution to escape this destructive cycle - ideally, by either raising the spending limit extremely high through budget reconciliation, or by abolishing the debt ceiling altogether.

At the time of its creation, the debt ceiling was far less of a political tool than it was an economic instrument. Simply put, economic objectives such as expenditures, taxes, and borrowing were rarely subject to political controversy. The appeal of minimizing debt was a widely accepted notion, and federal spending was miniscule compared to what it is now. Conversely, the debt ceiling currently measures no comprehensive economic value, failing to be adjusted for inflation, and ignoring trillions of dollars worth of assets held by the federal government. It also only takes into account gross debt, which includes debt that the federal government owes itself. Consequently, the debt limit doesn't in reality stop Congress from increasing debt, merely obstructing the Treasury from paying back its creditors and investors to whom money is owed (Stein).

Though the federal debt limit should be a representative measure of the government's duty to pay back the excessive debt that it owes, the debt ceiling has instead become a political weapon. As the deadline to come to a consensus on whether the debt ceiling should be raised is inching closer, the constant back-and-forth between political parties is undermining the confidence that global investors have in US treasuries. Additionally, the debt ceiling argument has had debilitating effects on the economy following recessions. For example, following the financial crisis of 2008, caps on federal spending significantly hindered a successful economic recovery. An inherent

lack of fiscal stimulus was issued, and a federal spending austerity ensued, causing the country's rehabilitation to be harrowingly lengthy (Bevins). A similar pattern could be observed following the pandemic. If government stimulus were to halt due to the exhaustion of the debt allowance, it could result in a barrier to the country's complete economic recuperation.

Though both parties agree that defaulting on financial obligations would be extremely damaging, neither party can come to a conclusion on this crisis, opting to continuously raise the ceiling, which proves to be a costly process. Treasury Secretary Janet Yellen has warned that the ongoing debt crisis could hurt the nation's financial stability in the long run. If the debt ceiling is allowed to bind government spending in the upcoming vote, a default could be devastating to financial markets, which are still struggling to fully recover from the pandemic. Investors and banks holding U.S. debt could fail, and the value of the US dollar would plummet. In addition to the monetary devaluation and a likely surge in inflation, the dollar could lose its spot as the "global unit of account" (Humphries). This adverse combination would create immense difficulties for the US to sustain its imports, and as a result, Americans' standard of living would fall.

Even from an economic standpoint, the political game of "chicken" that is the debt crisis could have serious implications if not resolved. Given all of its shortcomings, the most effective solution would be to get rid of it altogether. However, for a more politically palatable solution, through budget reconciliation, Congress could also raise the debt ceiling to an arbitrarily large number. Similar to countries like Denmark, this would effectively abolish it. Similar to the Danish, Congress should raise the debt ceiling to a level high enough that it isn't of any concern in the foreseeable future. With the decision regarding the debt ceiling looming closer, and the ability to solve the debt crisis once and for all, Congress and the Biden administration should do future politicians a favor - solve the crisis before it does any further damage.

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