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## How “Market Failure” Arguments Lead to Misguided Policy

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### EXECUTIVE SUMMARY

“**M**arket failure” is a common justification for new government policies. Proponents of interventions love to point to instances of apparently imperfect markets and assume that government taxation, subsidies, and regulation can seamlessly perfect them, thus maximizing social welfare.

Academic economists have long doubted this way of thinking. Comparing market outcomes to some unattainable and unidentifiable ideal is not useful in a world of imperfect knowledge and government failure. It is far better to compare outcomes from an intervention against actual realistic alternatives. Yet public debate often seems stuck on this rudimentary understanding of what market failure is and how it should be dealt with.

Worse, in many instances this basic framework of market failure is misused, leading to misguided policies. Government services, for example, are often labeled

public goods even when they do not fulfill economists’ definition of public goods as being nonrivalrous and nonexcludable, and in situations where markets have clearly found means of delivery without government. This creates the public perception that some goods and services must be provided by government simply because they are or could be.

Likewise, proponents of Pigouvian taxation to address negative externalities often exaggerate how high these taxes should be by including private costs (such as lost productivity) as external costs, failing to apply the logic of dealing with externalities consistently, and ignoring how taxes affect the demand for substitute products, which themselves can generate negative externalities. Externality arguments are also often used to justify uniform consumption taxes even when only certain consumption levels generate the external costs, and they are increasingly used to justify outright bans on various goods. Both responses can lower social welfare.

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## INTRODUCTION

“Market failure” is regularly used as justification for government spending, taxes, and regulation. In policy areas ranging from schooling to the consumption of sugar, claims that unfettered markets do not achieve socially optimal outcomes allow advocates of various government policies to argue that those interventions are economically necessary and beneficial. Yet there is a huge chasm between how market failure is used in public debate and how modern academic economists think about the efficacy of markets.

Advocates for intervention often implicitly define market failure using the theoretical framework presented in introductory economics textbooks. Markets are said to fail if they are not perfectly competitive, with prices equating to the marginal cost of production. This requires the market to be characterized by full and complete information, an absence of externalities or transaction costs, and by the free entry and exit of firms.

Given that few markets live up to this ideal, market failure defined this way is ubiquitous. Most commonly, markets are said to underdeliver public goods and fail to account for how production or consumption affects third parties (which economists refer to as positive or negative externalities).

Proponents of intervention then jump to assuming government can correct these failures by providing goods or services or by imposing taxes, regulations, or mandates. Indeed, thinking of market failure as an aberration from perfect competition implies that markets can be perfected through targeted intervention. The expansive definition of market failure is thus crucial in justifying interventionist policies.

But academic economists have long recognized the inadequacy of this framework. Models of perfect competition are not, in fact, guides to the real world. They can be useful for heuristic purposes, allowing comparison of real outcomes against some imagined ideal. But finding deviations from some imagined perfect world is not reason enough for intervention.

One reason for this is “government failure.” Just as perfect competition is unrealistic, believing markets to be perfectible by intervention requires highly questionable assumptions about government. To identify and account for market failures requires policymakers to be rational, consistent, fully informed, and not self-interested or beholden to vested interests, but focused solely on maximizing social welfare.<sup>1</sup> Clearly, these assumptions do not always hold.

Often, too, bad outcomes arise not because markets fail but because they are absent. Clear property rights and contracts can open the way for mutually beneficial trade. The 1991 Nobel Prize-winning economist Ronald Coase famously observed that, absent transaction costs, externality problems could be traded away in markets. His work had two implications. First, that simply taxing or subsidizing various activities based on who caused them would often not lead to efficient results. Second, that rather than trying to replicate some theoretical ideal market through taxes or subsidies, governments should assess means of reducing transaction costs. Only if this proves difficult or does not work at all should direct interventions be used. Even then, careful cost-benefit analysis should try to find the intervention with the biggest net social benefits.

Accordingly, economists today broadly understand market failure in a simpler way: “the failure of the market to bring about results that are in the best interests of society.”<sup>2</sup> As the economist and libertarian theorist David Friedman has written, there are situations in markets where “individual rationality does not lead to group rationality.”<sup>3</sup> To spell this difference out clearly: the definition of market failure often used by policy advocates judges markets against a theoretical world of perfect competition. On the other hand, high-quality economic analysis now compares outcomes from an intervention against actual realistic alternatives, rather than an “unattainable and unidentifiable ideal.”<sup>4</sup>

Sadly, public debates are still dominated by the rudimentary understanding of market

failure and the belief that government can easily correct market inadequacies. Politicians and commentators often consider it sufficient to exclaim “Public good!” “Externality!” and “Monopoly!” to justify new interventions, taxes, and regulations. The remainder of this paper shows six specific, yet common, misuses of the concept of market failure in public debate, focusing on public goods and externalities, which can result in bad policy conclusions.

### **WRONGLY LABELING ALL GOVERNMENT ACTIVITY AS PUBLIC GOODS**

One type of potential market failure involves the provision of public goods. Economists define these goods as having specific characteristics. First, they are nonrivalrous in consumption, meaning use by one person does not prevent or restrict use by others. Second, they are nonexcludable, meaning it is impossible to prevent someone from using the good once it has been produced.<sup>5</sup> Classic cited examples are missile defense systems and radio signals. In both cases, once provided or emitted, it is difficult to stop any one individual from enjoying the benefits of either. Also, one person’s protection from a missile defense system or reception of a radio signal does not “use up” defense or radio signals, meaning others do not have less access. Hence those goods are nonexcludable and nonrivalrous.

In the traditional market-failure paradigm, a public good constitutes a market failure because, although the community would be better off if it were produced, it would likely be underprovided in a free market. People have an incentive to “free ride” by consuming the good without paying, wagering that they could enjoy the benefits of provision at no cost. Hence, at a societal level, not enough is spent on the good’s provision.

Yet in public debate the term “public good” is often used to refer to government-provided goods and services that do not hold these clearly defined characteristics.<sup>6</sup> Libraries, museums, highways, and even K–12 and higher

education, for example, have all been variously described as public goods, but are clearly either rivalrous, excludable, or both.<sup>7</sup>

One can deny entry to libraries and museums, for example, for those who refuse to pay or register. Beyond a certain capacity, the cost base of the museum and congestion within it increases as the number of guests rises, meaning consumption at any given time becomes rivalrous. One might have to queue to either enter an exhibit or to get close enough to enjoy an attraction (as anyone who has visited the Louvre in Paris in peak hours to see the Mona Lisa will attest). While there may be other theoretical justifications for government support for the arts, arguing that museums and libraries are public goods in the economic sense is not convincing.

Highways and bridges likewise suffer from the congestion problem beyond a certain point, and the existence of toll roads and road or congestion pricing systems around the world shows that access can be restricted and the “user pays” principle imposed. In Virginia, for example, the Dulles Greenway opened in 1995, having been financed entirely privately. So, too, were the toll lanes on the I-495 Capital Beltway financed overwhelmingly by private investment.<sup>8</sup>

Claims made by Sen. Bernie Sanders (I-VT) notwithstanding, education and schooling clearly do not possess either characteristic of a public good.<sup>9</sup> As the Cato Institute’s Corey DeAngelis has outlined, putting an additional child into a classroom or university not only necessitates new resources, but also reduces the amount of personalized education time a teacher or tutor can grant to each child.<sup>10</sup> One can deny service to someone who fails to pay or fails to adhere to the conditions required to be taught within a school.

That is not to say that no goods exist that meet the public-good criteria. Knowledge itself can be nonrivalrous and nonexcludable, at least in theory. Although most knowledge accrues as a kind of side effect or externality arising from business ventures, prominent economists have argued that some

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components of scientific know-how might be underprovided in a free market, given that innovators or inventors are unable to capture the rewards associated with their research.<sup>11</sup> (This will be discussed in greater detail in the next section.) Very large national parks might be another example of a good that gets close to fulfilling these characteristics, although even here it is possible to put fences around them.

Yet it's clear that politicians and commentators frequently mislabel goods currently provided by government, or that they desire to be provided by government, as public goods even when that label is inappropriate.

In part this might just be because non-economists use the term incorrectly. But another explanation has been offered by economist Frances Woolley.<sup>12</sup> She explains that, because of the nonexcludability characteristic, determining whether something is a public good is really a question of whether the technology exists to make a good or service excludable. For instance, because governments have been unable or unwilling to enforce exclusion for some goods or services in the past, this is often taken as indicative of the impossibility or undesirability of doing so. In other words, as Woolley says, because “actual exclusion is so much easier to conceptualize than hypothetical excludability,” many wrongly presume that government-financed goods provided free of charge are innately public goods.

One can certainly argue that certain goods and services have social benefits beyond the private benefits to individuals, and thereby make the case for taxpayer support because of these supposed positive externalities. (See later sections.) But the term public goods implies specific characteristics. Very few goods that government provides are public goods. And just because the government deigns not to impose exclusion for various goods does not mean that it *cannot* exclude.

By misusing the concept of public goods, the public is misled into believing the government must provide various goods, and that these should be provided free at the point of delivery, even when this makes little sense economically.

## MARKETS SOMETIMES CAN FIND WAYS TO PROVIDE PUBLIC GOODS

Even goods with the apparent characteristics of being nonrivalrous and nonexcludable (public goods in the economist's sense) are often, in fact, delivered by private-market activity. Consider TV transmission signals picked up by aerials. Signals used to be transmitted free-to-air via broadcast towers, meaning one person watching TV didn't affect the ability of others to do so. Also, it was difficult to prevent someone with an aerial connected to a TV from tuning in. Terrestrial television could therefore have been argued to be nonrivalrous and nonexcludable—a true public good. The case for public broadcasting was therefore strong according to the market-failure paradigm.

And yet markets found ways to deliver seemingly adequate TV and radio broadcasts absent extensive government provision. One means was to tie in the costs of the transmission to either the purchase of the TV itself or to a receiver. This roughly approximated the users of the service paying the price associated with its delivery. Alternatively, TV and radio have been funded via advertising revenues, with companies and their customers willing to shoulder the costs of service to reach TV and radio audiences with their product messages.<sup>13</sup>

As new technologies, such as digital decoders, have proliferated, the transaction costs involved with individual contracting and tailored television packages have fallen substantially. TV providers are now able to exclude nonpaying customers easily. As a result, television is better thought of as a “club good.” It is still nonrivalrous at the point of consumption, but the service can be restricted to paying customers via subscription or pay-per-view requirements.<sup>14</sup> As a result of these technological developments, public-service broadcasters such as the United Kingdom's BBC have shifted from justifying their government subsidy by saying they are a public good to emphasizing the supposed external benefits from their output. This is a completely different argument.<sup>15</sup>

A similar example of private activity delivering a seemingly nonrivalrous and nonexcludable good was documented in a classic paper by Ronald Coase.<sup>16</sup> He examined the history of general navigation lighthouses in Britain, which economists before and afterward held up as an example of a classic public good. Coase's research found that through the late 18th and 19th centuries large numbers of lighthouses were, in fact, built privately. The funding stream for lighthouses came from dues on per voyage payments for all vessels arriving at or departing from ports in Britain (with limits applied after a certain number of journeys) or annual payments for other types of vessels for which per voyage payments were impractical.

In more recent years, there has been some intellectual push-back against Coase's view. David van Zandt's research showed that while English lighthouses were indeed privately owned, building them required government permission, and their viability was dependent on government-bestowed monopoly privileges and government-mandated fees.<sup>17</sup> Yet whether this proves lighthouses would not be provided independently of government, or simply reflects the historical role government had actively decided to play, is an open question.

Evidence on the private operation of the world's first modern lightship suggests the latter. The *Nore*, which ultimately became a series of lightships, was first launched in 1732 to mark a dangerous sandbar, also known as the Nore, where the River Thames meets the North Sea. In a recent paper, Rosolino Candela and Vincent Geloso showed that the *Nore* originally operated privately, profitably, and without the need for government enforcement on payments. The pair argue that private provision was subsequently crowded out by the public authority responsible for lighthouses in England and Wales.<sup>18</sup>

Today one of the most important ongoing debates around public goods occurs in the discussion of knowledge, particularly scientific knowledge. Accumulated knowledge, to the extent that it is available, is nonrivalrous and nonexcludable in consumption. Knowledge is

easy to share, does not get "used up," and once provided cannot be taken away. This led economists, such as Richard Nelson and Kenneth Arrow, to argue that private entities will be reluctant to undertake their own research and development through fear of competitors copying them. Research, in other words, would be underprovided in a free market because of the high fixed costs of undertaking original research against the low marginal cost of production or replication.<sup>19</sup> A classic example might be research into new drugs within the pharmaceuticals industry.

Even in the case of knowledge, though, subsequent analysis, not least by 2018 Nobel Prize-winning economist Paul Romer, acknowledged that market mechanisms, such as basic corporate secrecy, can allow firms to capture the gains of their own endeavors. Private research societies, think tanks, and universities have long existed, and at least part of what they do can be considered pure research. If knowledge is underprovided in free markets but is crucial to growth, how does one explain the Industrial Revolution in England, where government support for research was limited, and yet observers such as Adam Smith documented extensive innovation by private entities?<sup>20</sup>

One theory advanced by biochemist Terence Kealey concludes that the public-good "problem" associated with knowledge was overcome through knowledge-sharing institutions such as the Royal Society, which made the results of research a "contribution good." Clubs of scientists or researchers can band together, benefiting from the spillovers of knowledge to each other, but with broader excludability to those outside of the group. Researchers have incentives to undertake their own research to obtain the tacit knowledge and permission to access the research of others. This substantially increases their probability of discovering something worthwhile, which can be commercialized.

This is one example of markets developing institutions to create excludability. More recently, types of contracts, such as noncompet-

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clauses, have arisen as ways to prevent trade secrets from being transferred to other companies through the transfer of employees. All these mechanisms, as well as some government-supported institutions, such as patents, make investment in scientific knowledge less of a public good.

These practical and historical examples highlight that even goods or services that themselves appear to be nonrivalrous and nonexcludable can be delivered privately if payment can be tied to a complementary product or service, or when technological, clubs, or contractual institutions can significantly reduce the transaction costs associated with delivering excludability. Yet still many commentators misuse the market-failure framework by simply pointing at things with public-good characteristics as slam-dunk justifications for government provision.

### **EXAGGERATING EXTERNAL COSTS, OR NOT APPLYING THEIR LOGIC CONSISTENTLY**

Economic consumption or production decisions often impose costs or benefits on third parties. In public debate, these are described as a market failure because private consumers and producers, it is believed, only consider the private costs and benefits to themselves, and not these external effects, when deciding whether to consume or produce. As such, goods and services with broader external benefits might be underproduced in a free market, and those with external costs overproduced.

The classic recommended government remedy for this problem is to try to calculate the marginal external costs or benefits associated with a given activity (beyond the private costs or benefits) and implement taxes or subsidies so these externalities are priced in when consumption or production decisions are made.<sup>21</sup> Joseph Stiglitz’s Nobel lecture is a good description of this policy solution.<sup>22</sup>

Given the pervasiveness of externalities, applying this logic consistently and universally would result in an extremely intrusive

government. Yet, in public debate, externalities are often exaggerated by stretching the definition of external costs to cover effects that are not truly external or else cannot be easily quantified or measured. The most obvious example of this comes in relation to so-called “sin” products, such as junk food, soft drinks, and alcohol.

Alcohol consumption, for example, can clearly impose external costs.<sup>23</sup> The costs of alcohol-related crime and drunken driving are borne by people other than the drinker. There may be net external costs relating to health care, too, given that alcohol-related diseases and incidents could necessitate higher taxpayer subsidies or insurance premiums. (Although, to be applied consistently, one must also account for the effects of alcohol consumption on longevity. Excessive alcohol consumption may reduce the lifetime Social Security and health care costs of a drinker, relative to a nondrinker, thus resulting in taxpayer savings.)<sup>24</sup>

Most would accept that alcohol consumption could have net external costs. Seeking to account for these is defensible. Taxation may even be the most efficient way of achieving this goal.<sup>25</sup> But those campaigning for alcohol tax hikes sometimes expand the charge sheet of alcohol’s external costs to include things that primarily affect consumers rather than third parties.

A 2015 report by the Centers for Disease Control and Prevention estimated, for example, that alcohol consumption costs the United States \$25 billion per year from crime-related activity, \$13 billion for collisions, and \$28 billion for health care. Yet these were all dwarfed by what they identified as the major cost to the economy: a reduction in workplace productivity accounting for \$179 billion.<sup>26</sup> Yet little of a reduction in workplace productivity is really an external cost. If individuals’ alcohol consumption affects their work performance, or their human capital accumulation, the vast proportion of that cost would ultimately be borne by the individuals themselves through worse employment prospects and lower wages. Some people may prefer (hard as it is for

public health campaigners to believe) a work-life balance where they stay out later to socialize and drink, rather than maximizing at-work productivity. As such, acting on their preferences improves their economic welfare rather than detracting from it.<sup>27</sup>

It is certainly true that some part of that productivity deterioration would hurt the individual's employer or the ultimate consumer of the product. Lost productivity could also be considered at least partially an external cost in that lower wages or worse employment prospects may reduce an individual's net tax contribution. If this necessitates higher tax contributions from other taxpayers to maintain government revenues, there is a clear fiscal third-party effect.

But applying such reasoning consistently would profoundly change the scope of economic policymaking. Many decisions throughout our lives affect our measured productivity, pecuniary rewards, and net tax contributions. Implicitly assuming a baseline in which all individuals maximize measured productivity and net fiscal contributions, and considering deviations from this to be a market failure, would be an absurd principle. Taking time off to have children or to care for a sick relative, regularly staying up late to watch TV and being tired at work, or choosing not to invest in one's own human capital might all reduce measured productivity or earnings, or both, and so reduce one's net tax contributions. This is to say nothing of career choices. Opting to become a French teacher or a public-interest lawyer, even when the opportunity exists for one to be a Wall Street trader, means people clearly do not always make decisions to maximize their net tax contributions. Yet in a free society such decisions are rightly considered within the realm of free choice. Singling out the productivity effects of alcohol consumption as a unique externality in need of correction, when every day individuals make decisions that affect their productive potential and, indirectly, their net tax contributions, would be unworkable, arbitrary, and wrong.

Nevertheless, in the public health literature,

chalking up lost productivity as an external cost is increasingly common. A recent paper from academics at the University of Oxford, calculating supposed optimal tax rates on red and processed meat, cited productivity losses from mortality and morbidity for those aged under 65 as one of the costs requiring corrective taxation.<sup>28</sup>

Again, the lion's share of any effect would represent private costs, and not external costs. The most obvious potential external effect is on net tax contributions, but here we should note that mortality or morbidity itself may also result in some fiscal savings (through lower lifetime Social Security and Medicare payments). The most important point is this: the implication that policy should encourage us to maximize our productivity levels would result in thousands of taxes and subsidies on all kinds of activities.

External costs exist. Where things such as alcohol consumption are concerned, they may even be significant. It can be appropriate to levy taxes as a least-bad means of attempting to account for this marginal external harm, such that the full social costs of activities are reflected in prices.

But too often in policy debates, campaigners misuse the concept of externality-induced market failure by defining external costs too broadly. By including effects that are primarily private costs, they advocate corrective taxation at far too high a rate than what is justified by the genuine external costs of an activity. In what contexts to consider certain effects externalities also appears arbitrary and inconsistent.

### **CHAMPIONING UNIFORM TAXES WHEN EXTERNALITIES ONLY OCCUR FOR SOME CONSUMPTION**

For the reasons outlined in the last section, identifying negative externalities can be extremely difficult. But, once identified, it is often treated as a matter of faith that a simple, uniform tax can be applied to "internalize" the

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externality and shift us to some socially optimal level of consumption. Such reasoning has been applied to sugar or soda taxes (to account for obesity), alcohol taxes (to account for costs associated with drunken driving), and more recently to red-meat taxes (to account for health-related costs).

Yet even acknowledging external effects, externalities can be corrected efficiently using *uniform* taxes only if all levels of consumption generate the same external costs. Otherwise, one would only want to tax consumption that generates external costs. Yet sin taxes, such as those on sugar, soda, alcohol, and red meat, apply to all consumption, regardless of whether there are external effects.

People who drink one can of soda per month to replenish their energy levels after a long run are likely to impose minimal health costs on others. Someone drinking gallons of soda every day while already being obese and covered by a federal health program may, on the other hand, be imposing much larger external costs on other taxpayers. If we want to reach efficient levels of consumption, we'd want a system of taxation or regulation that accounts for this heterogeneity, increasing the price of consumption units that impose external costs.

Of course, it would be extraordinarily costly (and possibly illegal) to impose such price discrimination through taxes, even if it were theoretically possible. It is also difficult to ascertain how much an individual's health outcome is affected by marginal soda consumption. Indeed, where obesity is concerned, it is unclear what the rationale is for taxing one potential cause of the perceived problem and ignoring the broader diet or exercise. Why taxes on soda, but not subsidies for kale smoothies or gym memberships? If sugar is regarded as the key cause of obesity, why not have taxes on drinks such as milkshakes? Again, there appears to be an inconsistency in the way externalities are considered where policy is concerned.

If ultimately obesity itself is believed to be the problem, perhaps a more rational solution would be to impose taxes on obese people

themselves (although this would clearly be socially unacceptable). But in other lifestyle areas, there are more options for dealing with the external costs associated with heterogeneity among consumers.<sup>29</sup>

Consider alcohol consumption. Some drinkers consume alcohol regularly without ever driving under the influence, while others drive under the influence often. Ideally, we would impose financial penalties only on those who impose the risks and external costs on others.

In a world with perfect detection, this could take the form of direct penalties and fines for drunken drivers. Even without perfect detection, one could impose larger fines on those caught and convicted (although given low detection rates these fines could be financially ruinous for many). Eventually, it could be technologically feasible and cost-effective to install breathalyzer equipment within cars, too, linking the drivers' alcohol levels with their ability to start the car.

The problem with alcohol taxes and other sin taxes is that they impose the same marginal charge on both responsible and irresponsible consumers. This can worsen economic efficiency overall if irresponsible drinkers' consumption behavior is less responsive to the increase in price than responsible drinkers. Academic research tentatively suggests this is the case. A review of the literature by Jon P. Nelson of Pennsylvania State University found that only 2 of 19 studies on the consumption behavior of heavy drinkers found “a significant and substantial negative price response.”<sup>30</sup>

In short, identifying external costs relating to an activity is a necessary, but not a sufficient condition, for uniform consumption taxation to advance us to a socially efficient level of consumption. Unless consumption or production of the good at every level produces the same external costs, this type of taxation will certainly not take us to the theoretical perfectly competitive market outcomes described above. In some cases, it may still increase overall economic welfare, but in other areas it might worsen it. Policy proponents and commentators misuse the market-failure



framework by ignoring that external costs often are not the same at all levels of consumption. As a result, they advocate for uniform taxes to be applied to consumption or production activities even when this will clearly not maximize social welfare.

## IGNORING THE EFFECTS OF INTERVENTIONS ON OTHER MARKETS

Taxes and regulation designed to account for externalities can also fail to acknowledge tradeoffs caused by the intervention. Consider childcare. Intervention and regulation in this sector are often justified by arguments that high-quality childcare provides broader “positive externalities,” such as improved child development, and that support for it can incentivize mothers of young children to return to work. Greater maternal attachment to the labor force is sometimes said to bring other external benefits, such as boosting female productivity and net fiscal contributions. All these factors have been used to justify minimum staff–child ratio regulation, qualification requirements for workers, and, more recently, childcare subsidies.

Yet by raising the costs of provision, regulations on staffing reduce the number of infant centers, particularly in poor areas.<sup>31</sup> This raises prices and reduces the availability of care. The increased cost and lack of available care can, in turn, lead to substitution toward other forms of care, such as home daycare, the quality of which could conceivably be worse. Even if the regulation ensured higher quality care for those using formal centers, then the effect on prices and the availability of care could mean that, overall, the quality of care available to the population could fall.

Similar unintended consequences could come from subsidizing childcare with a desire to improve mothers’ labor force participation. Even if a planner could estimate the external benefits of parents working, parents should not be incentivized to work unless the social value of their market output is greater than the

social value of activities they might otherwise be engaged in. This could include any positive parental role to the development of their own children (which could have broader external benefits), or broader external welfare gains from engaging in charitable or family activity.

Yet often the discussion of externalities is partial, with little attempt to think about the external effects of the intervention itself.

Consider the recent debate around plastic-bag fees, taxes, and bans. The National Council of State Legislatures documents that California and Hawaii, as well as a host of major cities, have enacted legislation to ban or tax the bags.<sup>32</sup> These actions are usually justified according to environmental externalities associated with plastic bags, such as carbon emissions in production, spillovers from landfill sites, and, most emotively, visible pollution and harm caused to natural habitats and ocean wildlife.

According to the traditional market-failure paradigm, a tax or fee should account for the marginal external cost of the next bag to the environment. The tax should make consumers face the full social cost associated with its consumption.

Nevertheless, proponents of taxes or fees seem to consider their use in isolation, rarely acknowledging that increasing the price of plastic bags causes substitution to other means of transporting groceries. These also have environmental effects.

One of the reasons plastic bags are so cheap, for example, is because they are energy- and water-efficient to produce. For an equivalent amount of groceries, the National Center for Policy Analysis has estimated that production of paper bags consumes three times as much energy.<sup>33</sup> Paper bags also produce substantially more landfill waste, potentially higher greenhouse gas emissions, and more waterborne wastes than their plastic cousins.<sup>34</sup>

Some studies have tried to compare the environmental effects of different bags. One UK government study found that reusable plastic tote sacks and cotton bags would need to be reused more than 11 and 131 times, respectively, before they yielded net environmental

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benefits (as measured by their contribution toward climate change) compared to single-use plastic bags.<sup>35</sup> But cotton bags tend to only be reused around half that amount, making them worse for the environment, on net, than plastic bags. A Danish study assessing the life-cycle of bags estimated that, looking across all environmental effects, to provide the same performance as an average single-used plastic bag (used once before being used as a bin liner), paper bags would have to be used 43 times and cotton bags 7,100 times.<sup>36</sup>

The point here is not to downplay some of the environmental externalities associated with plastic bag use. It is to show that, by considering the consumption of one good in isolation, policy proponents misuse the framework of market failure with potentially damaging policy consequences. All goods and their substitutes here entail production processes using chemicals and water, and have the potential for pollution, carbon emissions, and much else besides. Advocating for taxes or bans associated with one type of product on the basis of externalities, without considering the environmental consequences of substitutes, can lead to policies that reduce social welfare.

### USING EXTERNALITIES TO CALL FOR BANS

Environmental externalities can be real and significant. But of late, the existence of external costs from certain activities has been used to justify banning or curtailing the availability of products entirely. This represents a misuse of the concept of social cost and goes against the insights of the market-failure paradigm, practically ensuring social welfare is not maximized.

The most recent example of this mistake relates to the “War on Plastic.” In July 2018, Seattle banned plastic straws and utensils from bars and restaurants.<sup>37</sup> Restrictions have also been implemented in certain Californian towns, too, such as Malibu and San Luis Obispo. Beginning in 2019, California will prohibit restaurants from providing these utensils unless customers explicitly ask for them.<sup>38</sup> In the United

Kingdom, the government will ban the sale of single-use plastic straws starting in 2019.<sup>39</sup>

The driver for this policy seems to be the evident pollution from straws in the world’s oceans, which can cause physical harm to marine wildlife. Awareness of this damage has already led many individuals and restaurants to voluntarily cease or cut down use of plastic straws. But, self-evidently, large numbers of businesses and consumers continue to use them, implying that they perceive the benefits of doing so exceed the costs.

Although it is difficult to estimate the environmental damage caused by marginal straw use, a reasonable policy prescription here would be to impose a tax on the straws themselves. In doing so, one must consider that substitute products may come with their own environmental costs. And there may be deleterious dental costs from making plastic straws more expensive, which could have effects on people through higher dental insurance premiums, for example. But assuming one considered these effects, one could attempt to price in the external costs of straw use, difficult as they would be to estimate.

The goal of such taxation is not to eliminate use entirely. The point is to ensure that when individuals and businesses make consumption decisions, they do so bearing the external costs of their actions. Even with such a tax imposed, those who consider the marginal private benefits of using straws to be higher than the marginal social cost would continue to buy them.

The logic of banning or adopting prohibitively high sin taxes, in contrast, is that the optimal consumption level of anything with external costs is zero. This is an absurd principle, albeit one that is regularly espoused. It is common, for example, to hear commentators and policymakers advocate for a zero-carbon economy.<sup>40</sup> The UK government’s recent announcement that it plans to ban all gas and diesel vehicles by the year 2040 is an example of a policy that will almost certainly impose net social costs on society.

Yet consider those individuals with

disabilities who cannot drink a beverage without the assistance of a straw and so rely on plastic straws to be able to dine or drink in public. For these individuals, the private benefits from straw use are almost certainly high enough that they would be willing to pay a high tax per straw, and so face the full social cost of their actions. Yet with a plastic straw ban, they would not be able to use them.

Similar reasoning would arise if one considered banning gas-consuming automobiles. Many people would want to continue to drive their gas-consuming car even if all the external costs of gas consumption were embedded within the gas price. Yet, with a ban, those consumers for whom the benefits vastly exceed the social costs are no longer able to drive their gas-fueled automobiles.

Banning products therefore creates a situation where gains from trade go unfulfilled. Society as a whole is made worse off than if the external costs of the activity were appropriately priced. Again, using plastic straws and driving gas and diesel vehicles do impose externalities. If one believes these negative effects increase uniformly with consumption, then it is defensible to impose corrective taxation to price in the external costs when individuals make consumption decisions. But it is a complete misuse of the market-failure framework to go further and point at externalities as justification for banning activities. Trying to outlaw consumption of a product leads to a situation where the marginal social benefits exceed marginal social costs, meaning trades go unfulfilled and society as a whole is worse off than if externalities are priced in appropriately.

## CONCLUSION

Markets are imperfect. Sometimes government interventions, through taxes, subsidies, and regulations, can be used to improve social welfare in the face of evident problems. But this paper has shown that bad arguments by advocates of intervention often result in sub-optimal policies.

Armed with a rudimentary understanding of market failure and a belief that government is well placed to correct markets, policy advocates sometimes push for government provision of certain goods even when there is no economic rationale, or ignore evidence that markets themselves can deliver public goods. They often argue for Pigouvian taxes at rates much higher than necessary to account for genuine external costs, or fail to apply the logic of dealing with externalities consistently. They sometimes ignore the effects of taxes on markets for substitute goods or wrongly use externalities to justify outright bans. All these mistakes can lower social welfare.

The best academic economic analysis these days considers the effects of intervention on outcomes against real-world alternatives, including nonintervention and other policies, not against the outcomes of some theoretical perfectly competitive market. But, too often in public debate, advocates for intervention deem it sufficient to point out some market imperfection in order to justify government subsidies, taxes, or regulation. This simplistic approach—predicated on the idea that government can perfect markets—leads to more intervention or higher taxes than what is optimal and has significant unintended consequences.

“Banning products creates a situation where gains from trade go unfulfilled.”

## NOTES

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