



YOUNG EUROPEANS: HOW TO ACT ON THE CLIMATE CRISIS?

The corrective potential of suing Carbon Majors: an economic view on climate change litigation

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Abstract

The thesis of this paper is that the development of the legal liability of businesses for their past greenhouse gas (GHG) emissions could provide an important part of the answer for how we should act on the climate crisis. Using economic theory and empirical evidence we show that the widespread development of such liability has the potential to directly deter carbon-intensive production, influence the pricing structure of goods and services (to better reflect their carbon footprint), and make its way into investment decisions. This could have the effect of increasing the relative attractiveness of making climate-conscious consumer decisions and thus mobilise wide-spread involvement of communities in climate protection. Another benefit would be to correct the injustice of few companies (known as Carbon Majors) reaping the benefits of carbon-intensive production, while pushing the real cost of this production onto the vulnerable. A shift in investment would have the benefit of deterring financial markets from sinking resources into polluting activities and freeing up the much-needed investment for cleaner technologies. In order to test this hypothesis further, we present evidence of how EU consumer protection and environmental regulation historically affected EU producers' behaviour.

Current efforts to litigate against companies for their share of GHG emissions include cases filed by groups of people, such as counties, states and industry associations, against private companies – and Carbon Majors in particular (Ganguly et al., 2018). While until now, climate change litigation has yet to be successful, its chances are by no means seen as doomed within all legal literature (Ibid). We discuss the different types of environmental litigation and show that climate change litigation against firms has been developing rapidly. Overall trends in environmental legal cases show that new angles are being taken, such as those potentially conferring rights to nature. Developments in climate change litigation suggest that new ground might soon be broken there, too: progress in climate science, the new tendency to litigate on the basis of human rights, and the growing number of cases are some of the reasons to watch this space closely.

We then show that climate change litigation is a solution particularly well-suited to the current climate crisis due to multiple features of the problem. Firstly, in order to avoid catastrophic and irreversible climate change, we need to decrease GHG emissions as soon as possible, and yet sufficient international political will is lacking. This means that a solution based on the legal, and not political, international system might be better suited to immediate results. Secondly, climate change is a collective action problem whereby the costs of individual action far

outweigh its likely benefits to that individual, unless others follow suit. This means that a solution which allows people to group together and try to shift this allocation of costs and benefits can be particularly fitting. Furthermore, a change in prices in favour of goods with a lower carbon footprint can help to rectify the high costs to the individual of foregoing personal GHG emissions. Thirdly, the small number of Carbon Majors means that litigation can hope to address them all and thus have wide-reaching and global results. Lastly, the need for large-scale investment in order to reach the necessary reduction in emissions means that a mechanism likely to channel investment away from carbon-intensive activities is very much welcome. This approach has the distinctive virtue of targeting the investment calculus directly.

The paper concludes with policy recommendations. Given the arguments in favour of climate change litigation, efforts in this area should be supported where possible. Policy recommendations of this paper include reinforcing media coverage and public awareness of climate change as well as the emissions which most likely caused it. The development of scientific knowledge has been hailed as necessary in order to be better able to prove causality and thus make climate change litigation more likely to succeed. Public support of NGOs, counties, towns, states, and industry associations in their efforts as plaintiffs could also yield powerful results. Bolstering, and not violating, international human rights law will be of essence as many of climate change litigation cases follow this route. Finally, ceasing fossil fuel subsidies and discouraging private sector financing of carbon-intensive industries could help to allow the price and investment levels to get closer to internalising the externality of global GHG emissions.

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Young Europeans: how to act on the climate crisis?

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Section 1: Introduction

This paper responds to the question on how we should act on the climate crisis with an argument focused on a distinct area within legal liability. We examine the hypothesis that climate change litigation can provide a mechanism to shift the costs of production in favour of less heavily emitting processes and thus influence producer and consumer behaviour. While this alone has little chance of providing the magnitude of change needed to halt human-induced global warming, it has the potential to shift incentives rather quickly. Thus, one advantage of this mechanism is that it could start to influence the amount of emissions created by world-wide production processes before a global political consensus needed to influence them further is reached.

Our thesis is that climate change litigation, where directed against firms for the greenhouse gas (GHG) emissions they have created, can influence producers' and consumers' economic activity. Their likely response is investigated on the basis of microeconomic theory and empirical evidence, including through the analysis of how legal liability in the area of consumer protection changed firms' investment and pricing behaviour. The analysis of consumer protection is partially based on material housed at the Historical Archives of the European Union, and thus constitutes primary research.

We find that the conditions which would make the mechanism discussed here more likely to work are the following:

- climate change liability against firms must be wide-spread and threaten severe financial consequences;
- citizens worldwide need to be empowered to bring such legal claims to courts; this means they must know that it is possible to do so, and they must have the resources to individually or collectively bring their cases forward;
- cities, states, counties, non-governmental organisations (NGOs) and industry groups should be supported in their efforts to bring forward or influence such litigation;

- further development of climate science
- fossil fuel subsidies must not financially offset the fines resulting from climate change litigation cases.

Section 2 briefly introduces climate and environmental litigation, which is wide-reaching and rapidly expanding. Even though we limit the focus of our subsequent analysis to climate change litigation against firms and corporations, the consideration of recent developments in broader environmental litigation reveals significant evolution in legal instruments and the scope to re-define legal liability when it comes to environmental issues.

Analysis in section 3 suggests that multiple characteristics of the current climate change crisis render it especially amenable to being influenced by litigation against firms. These characteristics are: the need to act as soon as possible, and likely sooner than a global political consensus is likely to emerge; the problem being one of ‘collective action’; the need to align individual incentives to reward climate-conscious behaviour, notably in the area of prices; and the small number of companies responsible for a large percentage of GHG emissions in the last few decades.

In section 4, we examine the effects that climate change litigation could have on economic behaviour. We inspect the possible avenues of influence of such litigation even if it is unsuccessful, noting its potential to raise public awareness, result in financial losses and increase the pressure to disclose climate-related risks. This, or successful litigation resulting in high fines, could affect economic behaviour by directly deterring high-carbon production. We also discuss the likely effect on prices, consumer behaviour, and investment.

Section 5 briefly examines how economic behaviour changed in response to regulation and litigation in the area of consumer protection and draws parallels to climate change litigation.

Section 6 summarises the policy recommendations resulting from the analysis in this paper. An important policy recommendation coming out of this analysis is the need to support public awareness (of climate science, climate-related harms, as well as of the litigation cases themselves), as well as the group litigation efforts of local governments, cities and non-governmental organisations. Some of our analysis shows that a legal-based solution is likely to run into problems caused by structural inequalities between the involved parties, and thus is a second-best option to substantive regulation.

Section 7 concludes.

Section 2: Litigation with respect to the environment – the current situation

This section examines the current context of environmental litigation, positioning climate change litigation against firms within a wider – and quickly evolving – context.

Litigation in the area of environment is wide in scope and not exclusively focused on climate change, or even economic agents. It ranges from lawsuits filed against firms for various types of pollution to those filed for crimes against environmental activists¹. These areas have been undergoing significant shifts: recently, a group of prominent scientists made a public call to make the destruction of an environment a war crime² and a movement calling for assigning nature legal standing has been gaining traction. Notable wins in this area include granting legal protection to a lake in Toledo and over thirty-seven similar developments in the United States since 2006³. Thus, the establishment of new legal instruments in areas related to the environment is a blooming practice.

On the other hand, one might argue that the effectiveness and evolution of such instruments has been, respectively, low and slow. The idea of granting legal rights to nature emerged with a prominent essay by Christopher Stone entitled ‘Do plants have legal standing?’, written as early as 1972⁴. Subsequently to the amendment conferring rights onto the Toledo lake being accepted, Toledoan activists were prevented from intervening in a legal dispute on behalf of the lake⁵. The judge explained: “some may believe the law should confer legal standing upon natural objects and features ...but a district court—bound by Congress and higher courts—is not the appropriate body to take that leap.”⁶ Thus, for the moment it seems that there are still considerable limits to legally protecting the environment without an injured party suing for damages done to their human self.

Litigation related specifically to climate change is a more recent phenomenon, and one growing in speed. Worldwide, there have been 1,328 cases where a government or a company sued for

¹ Garside, “On the Frontline: Why Has Environmental Journalism Become so Dangerous?”

² Multiple authors, “Stop Military Conflicts from Trashing Environment.”

³ Mogensen, “Environmentalism’s Next Frontier: Giving Nature Legal Rights.”

⁴ Stone, “Should Trees Have Standing--Toward Legal Rights for Natural Objects.”

⁵ Mogensen, “Environmentalism’s Next Frontier: Giving Nature Legal Rights.”

⁶ Mogensen.

causing or failing to prevent climate change up to May 2019⁷. A vast majority of these (1,023) took place in the United States⁸.

But climate change litigation goes both ways and cannot be treated as a tool which is uniformly ‘pro-climate’. Firstly, court verdicts vary in their direction. In the US, of the 41 decided cases, “three were decided in favour of the Trump administration’s deregulation efforts and therefore ‘hindered’ climate change policy”⁹. The remaining cases were ruled to uphold climate change regulation¹⁰. However, “outside the United States, 43 per cent of the 305 cases brought between 1994 and May 2019 have led to an outcome that is considered favourable to advancing climate change efforts”¹¹ – so fewer than half of the cases had a favourable outcome. Some climate change litigation cases are brought against governments for regulation seeking to curb emissions, notably when it threatens business¹². Thus, we cannot treat ‘climate change litigation’ as a tool uniformly geared towards protecting the climate.

Furthermore, not all cases with a pro-climate outcome will have the effect of deepening climate protection – some might only go as far as to protect the fragile status quo. Much of climate change litigation in the US since 2017 has been aimed at preventing the climate change deregulation attempted by the Trump administration¹³. These kinds of cases serve to safeguard the important gains which have already been made in climate policy, rather than providing increasing climate protection, which is the focus of this paper.

A large majority of climate change litigation cases are brought against governments: according to one analysis, 85% in the US and 81% worldwide¹⁴. Landmark cases in this area include the Dutch people suing their government for a breach of the duty of care and the decision of a Pakistani court which accepted that the delay in implementing climate change regulation by the Federation of Pakistan violated its human rights obligations (both in 2015)¹⁵. Similar cases were also filed in Belgium, India, United States¹⁶, Philippines, Austria, and South Africa¹⁷.

⁷ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 3.

⁸ Setzer and Byrnes, 3.

⁹ Setzer and Byrnes, 4.

¹⁰ Setzer and Byrnes, 4.

¹¹ Setzer and Byrnes, 4.

¹² Adler, “U. S. Climate Change Litigation in the Age of Trump: Year Two,” 25.

¹³ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 6.

¹⁴ Setzer and Byrnes, 4.

¹⁵ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 844.

¹⁶ Ganguly, Setzer, and Heyvaert, 844.

¹⁷ Peel and M. Osofsky, “A Rights Turn in Climate Change Litigation?”

These represent a departure from previous litigation as “the new cases demonstrate an increasing trend for petitioners to employ rights claims in climate change lawsuits, as well as a growing receptivity of courts to this framing”¹⁸. This stands in contrast to the previous litigation’s focus on statutory interpretation avenues¹⁹.

Climate change litigation cases brought against governments have the potential of changing industrial behaviour if they incentivise policymakers to create stricter regulations or standards. They could support the creation of stringent regulation governing emissions and expanding their inclusion in permit regimes, or cause the suspension of permits and licenses²⁰. These cases have the potential to be extremely important but are out of scope of this paper.

Our analysis focuses on the less often discussed effects of climate change litigation against companies. In such cases, a firm might be sued for having produced emissions which have then caused (a part of) climate-change-related adverse effects to a particular individual’s or group’s living and/or working environment. Such cases have been growing in number and geographical scope in recent years²¹, seeking billions of dollars in damages, often seeking that fossil fuel companies cover the costs of climate change adaptation²².

Current prominent efforts to litigate against companies for their share of GHG emissions include “cases filed by two Californian counties [and a city] against 37 oil, natural gas and coal companies and trade groups in 2017 ... and a lawsuit filed by New York City against the world’s five largest Carbon Majors (ExxonMobil, Shell, BP, Chevron and Conoco-Phillips)”²³. The survivors of the typhoon in the Philippines, supported by lawyers and NGOs, filed a petition with the Commission on Human Rights of the Philippines; other cases are filed on a regular basis²⁴.

What is immediately apparent from a survey of these cases is that very few are brought forth by private individuals. Many of the lawsuits are brought by state governments or municipalities²⁵. This is unusual, as within broader climate change litigation, non-

¹⁸ Peel and M. Osofsky.

¹⁹ Peel and M. Osofsky.

²⁰ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 843.

²¹ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 1.

²² Setzer and Byrnes, 8.

²³ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 850.

²⁴ Ganguly, Setzer, and Heyvaert, 850.

²⁵ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 8.

governmental organisations have traditionally been the main plaintiff in pro-climate protection cases. Recent analysis by Adler, looking at cases in the United States in 2017 and 2018, found that NGOs filed 77% of such cases (though municipal, state, or tribal government entities were involved in a fourth of all pro-climate cases)²⁶. Towards the end of 2018, the first climate change litigation case filed by a private industry group was brought in by the Pacific Coast Federation of Fishermen’s Associations against Chevron Corporation (for losses to crabbers)²⁷. The group demands that fossil fuel companies cover the costs of transition of the crabbing industry²⁸ – thus potentially resulting in a significant bill.

This tendency for climate change litigation to be brought collectively, albeit in changing group configurations, is significant for our analysis. It will be re-examined in section 3.2, where we discuss the characteristics of climate change as a collective action problem, as well as in section 5.1, which notes the effectiveness of class action lawsuits in the area of consumer rights protection.

Legal experts note that we are currently in the second wave of climate change litigation aimed at corporations²⁹. While the first wave was based on public nuisance claims, this second wave “is characterised by a broader range of arguments and litigation strategies than its predecessor, and unfolds within a rapidly evolving scientific, discursive and constitutional context”³⁰. This scientific context is based on an increasing understanding of the connection between emissions and climate impacts³¹, as well as on the fact that climate change has started to affect human livelihoods. As stated by IPCC, “many land and ocean ecosystems and some of the services they provide have already changed due to global warming”³², and the typhoon in the Philippines is just one example.

Furthermore, as discussed in more detail in section 3.3, there is increasing evidence to suggest that a small number of firms is responsible for a large proportion of recent emissions³³. This makes it much more likely that the amount emitted by one of the Carbon Majors can be estimated with some degree of accuracy. Coupled with the increasing knowledge about the

²⁶ Adler, “U. S. Climate Change Litigation in the Age of Trump: Year Two,” 25.

²⁷ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 9.

²⁸ Setzer and Byrnes, 9.

²⁹ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 842.

³⁰ Ganguly, Setzer, and Heyvaert, 842.

³¹ Ganguly, Setzer, and Heyvaert, 844.

³² Allen and Mustafa, “Global Warming of 1.5 C, Summary for Policy Makers,” 7.

³³ Griffin, “The Carbon Majors Database. CDP Carbon Majors Report 2017,” 8.

relationship between emissions and climate-related harms, this means that lawsuits which rely on proving causality might have a growing chance of success. Ganguly et al. argue that this can provide “new opportunities for judges to rethink the interpretation of existing legal and evidentiary thresholds for claimants to meet the burden of proof”³⁴. Setzer, too, expects that “courts might be more open to the notion of individual corporate responsibility for climate harm if partial or contributory causation can be scientifically proven with respect to the defendant’s conduct”³⁵. Thus, while until now climate change litigation has yet to be successful, its chances are by no means seen as doomed within the legal literature.

Another argument in favour of the possibility of future success of such cases is that they are increasingly appealing to the human rights ‘angle’, and thus could benefit from the clearer international enforcement mechanisms present in this area (as contrasted with the less precise workings of international environmental justice)³⁶. Recent cases framed in this way include the inquiry attempting to determine Carbon Majors’ responsibility for the climate effects on human rights in the Philippines, as well as the May 2019 case brought by the Torres Strait Islanders against the Australian government brought before the UN Human Rights Committee³⁷.

Finally, the likelihood of a climate change litigation case succeeding will increase as the frequency of these cases increases, and this is likely to happen due to the increasing number of climate harms taking place. A recent study revised the estimate of homes which are likely to be flooded before 2050 with a three-fold increase, landing at the figure of 300 million people who are likely to be affected³⁸. This scenario estimates the cut in emissions as equal to this promised under the Paris Agreement, meaning that the actual figure could be much higher if these policy goals are not delivered.

It is worth noting that climate change litigation against governments and firms can be intimately related. In the more prevalent cases against governments, new legal ground is being broken on how to establish causation between the emissions of a specific region or country and

³⁴ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 842.

³⁵ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 9.

³⁶ Setzer and Byrnes, 8.

³⁷ Setzer and Byrnes, 8.

³⁸ Kulp and Strauss, “New Elevation Data Triple Estimates of Global Vulnerability to Sea-Level Rise and Coastal Flooding.”

damages done by global climate warming, notably in the case against Netherlands³⁹. The approach of that case is being adopted in a lawsuit against Shell.

The next section examines the possible future effects of these, and similar, cases.

Section 3: Why legal liability matches the nature of the climate change problem

This section outlines why climate change litigation against private actors might be important in the global fight against irreversible and catastrophic climate change. It addresses various characteristics of the problem and contrasts the advantages of potential successful legal liability with those of other notable solutions.

Crucially, this paper is by no means suggesting that climate change litigation and its potential responses within the private sector are a panacea. In fact, the value of the contribution of this mechanism to some extent depends on other policies widely understood to be necessary, such as increasing public awareness and stopping government subsidies to fossil fuel companies. However, our analysis reveals that there are a number of ways in which climate change litigation against firms matches the specificities of the current challenge.

This section provides evidence for the following argumentation:

- The symptoms of the problem are global in scale and scope;
- The solutions require international coordination, which is currently insufficient and undermined by collective action problem at the national level;
- The chief offenders are multinational and few in number;
- Litigation can be executed at a smaller scale and coordinate interests to join via group litigation;
- At the same time, there can be international spill-overs in the precedents set by national-level cases, inspiring action elsewhere and allowing the climate change litigation practice to snowball internationally.

³⁹ de Rechtspraak, “Uitspraken.”

Section 3.1: The need to decrease emissions as soon as possible, and globally, amidst limited successful international cooperation

In order to prevent irreversible climate change, wide-reaching action needs to be undertaken before 2030 and to intensify thereafter; the advantage of climate change litigation in this context is that it can potentially have effects quite quickly, independently of the international political consensus. The magnitude of the task ahead calls for all hands on deck; it will require “heavy-duty interventions: sweeping bans on polluting activities, deep subsidies for green alternatives, pricey penalties for violations, new taxes, new public works programs, reversals of privatisations”⁴⁰. In reference to the above list, climate change litigation against firms can potentially provide the “heavy penalties” before the “violations” are globally outlawed.

Furthermore, the required changes are of a global nature and thus at least some of the solutions will accordingly need to be unconstrained by different national circumstances. The actions required in order to halt climate change before it reaches dangerous and unstoppable levels require fundamental changes in how the global economy functions. In 2018, the IPCC described the scale of the changes needed to limit global warming to 1.5°C above pre-industrial levels as “rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems [which] are unprecedented in terms of scale, but not necessarily in terms of speed”⁴¹. Huge emission reductions need to take place in all sectors⁴², and global emissions need to start declining well before 2030⁴³. As shown by the examples of the lawsuits being brought before the UN as well as the geographic diversity of the plaintiffs in climate change litigation cases, this mechanism carries a ‘global’ potential. This is further supported by the defendants being multinational corporations.

The current lack of a sufficient international political consensus and ambition, amidst the need to act quickly, is another reason why a global mechanism independent of governmental action is needed. Heartbreakingly, the international commitments present since the Paris Agreement in 2016 are not enough to limit global warming to under 1.5°C above pre-industrial levels, even if far more ambitious emission reductions take place after 2030 than currently predicted⁴⁴. Global warming above 1.5°C will lead “to irreversible loss of the most fragile ecosystems, and

⁴⁰ Klein, *This Changes Everything: Capitalism vs. the Climate*, 39.

⁴¹ Allen and Mustafa, “Global Warming of 1.5 C, Summary for Policy Makers,” 17.

⁴² Allen and Mustafa, 17.

⁴³ Allen and Mustafa, 20.

⁴⁴ Allen and Mustafa, 20.

crisis after crisis for the most vulnerable people and societies”⁴⁵. A difference between 1.5°C of warming versus 2°C means, for example, losing 70–90% of currently existing coral reefs, versus over 99%⁴⁶ (respectively). Thus, global warming of 2°C or more is likely to have irreversible effects on marine and coastal ecosystems⁴⁷. Furthermore, “depending on future socio-economic conditions, limiting global warming to 1.5°C compared to 2°C may reduce the proportion of the world population exposed to a climate change-induced increase in water stress by up to 50%, although there is considerable variability between regions”⁴⁸. To summarise, unless more than the currently promised reductions take place, by 2030 it will be too late to avoid some critical climate change effects.

In an era of Trump presidency, which ushered in attempts of climate change deregulation⁴⁹ in the world’s second largest GHG emitter country⁵⁰, and the above-mentioned insufficiency of the nationally-determined targets agreed at the Paris Agreement, adequate international cooperation seems a long way away.

The advantage of climate change lawsuits against firms is that they could potentially affect emissions without being underpinned by an international political agreement. If the mechanisms described in section 4 come into existence, they will be based on increased monetary or reputational costs to fossil fuel companies, brought about by damages claims. This would likely work better if supported by policy, but ultimately relies on the international legal rather than political system.

Section 3.2: The collective action problem and perverse incentives for individual action

This section examines the extent to which climate change litigation can deal with the fact that climate change is a collective action problem, requiring collective solutions. In its 2014 report, the IPCC noted:

“Climate change has the characteristics of a collective action problem at the global scale, because most GHGs accumulate over time and mix globally, and emissions by any agent (e.g., individual, community, company, country) affect

⁴⁵ Masson-Delmotte et al., “Global Warming of 1.5 C,” vi.

⁴⁶ Allen and Mustafa, “Global Warming of 1.5 C, Summary for Policy Makers,” 10.

⁴⁷ Allen and Mustafa, 10.

⁴⁸ Allen and Mustafa, 11.

⁴⁹ Adler, “U. S. Climate Change Litigation in the Age of Trump: Year Two.”

⁵⁰ European Political Strategy Centre, “10 Trends Reshaping Climate and Energy,” 11.

other agents. Effective mitigation will not be achieved if individual agents advance their own interests independently. Cooperative responses, including international cooperation, are therefore required to effectively mitigate GHG emissions and address other climate change issues. The effectiveness of adaptation can be enhanced through complementary actions across levels, including international cooperation. The evidence suggests that outcomes seen as equitable can lead to more effective cooperation.”⁵¹

Indeed, stopping GHG emissions from taking place has the classic characteristics of a collective action problem, where “because the results of the participation are non-excludable and indivisible (that is, they are a collective good), it is rational for individuals to free-ride on the participation efforts of others, reaping the benefits without incurring the costs”⁵². This means that it would be incredibly difficult for individual action and conscious consumer choices alone to prevent catastrophic climate change in time.

The balance of costs and benefits to an individual forgoing personal emissions in the current world economy supports this diagnosis. A simple comparison of train versus flight prices between European cities and the pricing of lentil- versus beef-based dishes shows that the current pricing structure does not reflect the emissions inherent in the production and consumption of different products. The cheapest electric car to be found on BuyaCar in October 2019 cost £7,990⁵³. Climate change activist Greta Thunberg’s recent emission-free journey across the Atlantic highlighted that there are few sea-based alternatives to flights, and there are only a few carbon neutral boats in the world, hardly providing an affordable choice⁵⁴. Renewable heating is made less expensive in some countries thanks to government subsidies, but the cheapest options for heating a home are usually gas mains or oil-fuelled central heating tank (for rural areas)⁵⁵. A recent piece of journalistic research as to the possibility of going green on a limited budget argued, on the basis of first-hand attempts, that “in order for people to make eco-conscious choices, there has to be an eco-conscious choice available for them to

⁵¹ Pachauri and Meyer, *Climate Change 2014 Synthesis Report-Summary for Policymakers*, 17.

⁵² Rydin and Pennington, “Public Participation and Local Environmental Planning: The Collective Action Problem and the Potential of Social Capital,” 157.

⁵³ BuyACar Team, “Cheapest Used Electric Cars.”

⁵⁴ Phelan, “Greta Thunberg’s Voyage Is Admirable but Not Practical.”

⁵⁵ Ovo Energy, “Heating Fuel Comparison.”

make. For many places, especially in rural and impoverished America, those choices simply don't exist"⁵⁶.

The benefits of cutting one's personal GHG emissions, on the other hand, will not be realised unless a sufficient number of people (and within a few years, all people) similarly forgo emitting greenhouse gases. For these reasons, among others, public choice literature "is generally highly sceptical of the prospects for improving the delivery of environmental policy objectives through an expansion of public participation"⁵⁷. There are a few simple changes that can be made in individual behaviour at a low (or even negative⁵⁸) cost in order to reduce one's personal carbon footprint, and individual efforts are laudable and do matter. However, given the size of the required decrease of global emissions, it is unfortunately unlikely that the world's consumers will be able to solve the issue of climate change in time with a sufficient amount of personally costly, spontaneous action.

The benefit of climate change litigation in this context is that it potentially provides a mechanism to correct the global pricing structure, aligning individual incentives with climate protection. The arguments showing that price effects would shift in response to frequent climate change litigation resulting in heavy fines are explored in more detail in section 4.3.

It is worth noting that, while the price structure might correct to take a better account of emissions, this can hinder social justice if the poorest within society are disproportionately affected – this provides a possible downside of climate change litigation. This is likely to happen if lower-emissions technologies do not develop in time to provide low-cost renewable energy. Given that the roll-out rates of renewable infrastructure required for this would be heroic, governments might need to step in in the interim period to provide financing to cover the extra costs of energy for the most vulnerable. Education on climate change and the need to change lifestyles in order to meet the required 2030 emission reduction could also help to decrease demand, for example for transport or some agricultural products. The financial support to the most vulnerable to cover the cost of some emitting behaviours should be carefully targeted: while heating at peak demand times might necessitate the use of fossil fuels in order to prevent deaths of the fuel-poor, the same level of justification cannot be made for subsidising fossil-fuel based leisure activities.

⁵⁶ Sine, "Can You Afford to Be Green When You're Not Rich? I Kept a Diary to Find Out."

⁵⁷ Rydin and Pennington, "Public Participation and Local Environmental Planning: The Collective Action Problem and the Potential of Social Capital," 159.

⁵⁸ Vandenbergh, Barkenbus, and Gilligan, "Individual Carbon Emissions: The Low-Hanging Fruit."

One more benefit of climate change litigation in the face of the collective action problem of climate change is that it provides a mechanism for people to pull their interests together. While it may be irrational for an individual to forgo their emissions in isolation, this might no longer be the case for a group of states involved in a high-profile climate lawsuit. Such cases could exploit media coverage to increase stigmatisation of the consumption behaviour, tilting the consumer calculus slightly towards unilateral change. High-profile lawsuits could also increase the public scrutiny of polluting firms and the states that oversee them; successful lawsuits can re-internalize firms' environmental externalities by imposing direct financial costs. The scrutiny arising from unsuccessful lawsuits imposes further reputational costs on firms and governments. Thus, litigation increases the incentives to behave well and decreases the benefits of behaving badly, for economic and governmental groups on both sides of the case – not least due to the amplified public scrutiny and decreased feelings of hopelessness and impunity.

Section 3.3: The small number of Carbon Majors

Not only does the structure of the global economy disincentivise individual climate-conscious action; it also allows for a large proportion of GHG emissions to be created by a small group of industrial actors. Thus, climate change litigation, if resulting in a significant transfer of funds from companies to affected individuals, has the potential to bring about a correction of a highly unjust global situation.

The Carbon Majors Report 2017 provides evidence that “25 corporate and state producing entities account for 51% of global industrial GHG emissions. All 100 producers account for 71% of global industrial GHG emissions”⁵⁹. In a release from October 2019, Climate Accountability Institute showed that only twenty companies emitted 480 billion tonnes of GHG, amounting to 35% of world-wide fossil fuel and cement emissions produced since 1965⁶⁰. When looking at all historic emissions, the picture changes very little; “103 fossil fuel and cement entities emitted 1,221 GtCO₂e, or 69.8% of global since 1751 (1.75 TtCO₂e); of which the Top Twenty companies are responsible for 526 GtCO₂e, or 30% of all fossil fuel and cement emission since 1751”⁶¹.

This means that a mechanism which makes these companies liable to pay the cost of climate adaptation and cover damages, while also correcting prices to include the social cost of

⁵⁹ Griffin, “The Carbon Majors Database. CDP Carbon Majors Report 2017,” 8.

⁶⁰ Heede, “Carbon Majors: Update of Top Twenty Companies 1965-2017,” 1.

⁶¹ Heede, 2.

emissions (and thus help consumers make more climate-conscious choices more cheaply) provides a particularly appropriate solution from the point of view of social justice. This would allow wide participation, as well as a rectification of the injustice of few companies benefiting from production which will bring huge costs, initially largely to poorer nations in addition to the poor and disadvantaged members of richer societies⁶².

It is important to consider that such high concentration of actors responsible for global emissions (and, presumably, an equally concentrated distribution of the profits from emitting them) is likely to mean formidable opposition when it comes to climate change lawsuits. This concentration of power calls for as wide-reaching support for climate change lawsuits as possible – an important policy recommendation.

Section 3.4: The need to affect investment

Preventing catastrophic climate change is likely to require a large shift in investment, and there are reasons to believe that climate change litigation could have an effect on capital and financial markets.

The scale of investments which need to take place likely requires multiple avenues of pressure on both governments and companies. IPCC makes clear that “substantial reductions in emissions would require large changes in investment patterns ... annual investments in low carbon electricity supply and energy efficiency in key sectors (transport, industry and buildings) are projected in the scenarios to rise by several hundred billion dollars per year before 2030”⁶³. Specifically, the additional investment required yearly between 2016 and 2050 in order to prevent a rise of temperatures beyond 1.5°C from pre-industrial levels would need to be of the magnitude of around \$830 billion⁶⁴, in addition to the investment already put behind the policies announced in 2018⁶⁵. In total, the investment necessary to achieve this goal is projected to amount to about 2.5% of world GDP between 2016 and 2035⁶⁶.

⁶² Masson-Delmotte et al., “Global Warming of 1.5 C,” 11.

⁶³ Allen et al., “Technical Summary: Global Warming of 1.5° C. An IPCC Special Report on the Impacts of Global Warming of 1.5° C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty,” 30.

⁶⁴ Ranging from 150 billion to 1700 billion USD2010 (at 2010 \$US prices).

⁶⁵ Allen et al., “Technical Summary: Global Warming of 1.5° C. An IPCC Special Report on the Impacts of Global Warming of 1.5° C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty,” 18.

⁶⁶ Allen et al., 24.

This kind of investment will require “appropriate enabling environments”⁶⁷. IPCC advises that policy solutions aim to mobilise the resources by both market and non-market instruments, noting the challenges of “implementation, including those of energy costs, depreciation of assets and impacts on international competition, and utilizing the opportunities to maximize co-benefits”⁶⁸. Climate change litigation could provide a way to induce at least part of this shift in investment, as well as a just way to shift the burden of the investment costs to those responsible for the problem.

Section 4.4 discusses the extent to which climate change litigation might affect investment decisions.

Section 4: Anticipated economic response to climate change litigation

Section 4.1: Avenues of direct and indirect influence

Economic theory and evidence would suggest that climate change litigation cases brought against corporations have the potential to impact the behaviour of the private sector by providing direct incentives to pollute less, influence prices and the consumer response, as well as affect decisions about future investments.

Some climate change litigation cases are made specifically with such impacts in mind. A recent report on the global trends in these lawsuits notes that climate change litigation can be divided into two types: strategic and routine⁶⁹. The strategic cases are described as those which are more high-profile and aimed at making the kind of potential impact which we investigate in this paper⁷⁰. Though these types of cases “are in the minority, [they] receive considerable attention from academics, state and non-state actors”⁷¹. The routine cases might be smaller in scope and related to, for example, planning permissions⁷² or anything “from false green advertising to challenges over permits issued, to energy or coal mining activities”⁷³; for many of them, climate change is a secondary concern. However, experts in climate litigation argue

⁶⁷ Allen et al., 30.

⁶⁸ Allen et al., 24.

⁶⁹ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 2.

⁷⁰ Setzer and Byrnes, 2.

⁷¹ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 843.

⁷² Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 2.

⁷³ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 843.

that such cases, too, have a potential to impact decisions by governments and industry, even if this is not their primary purpose⁷⁴.

As noted in section 2, the effectiveness of strategic climate change litigation cases made against corporations has so far been limited. This is a large limitation of the arguments brought forward in the remainder of this paper: they are theoretical, and they may remain so (if climate change litigation against corporations never succeeds).

However, some argue that this type of litigation could influence corporate behaviour even if it remains unsuccessful. Ganguly reasons that “even when dismissing claims, judges may use the adjudicative process as a signalling opportunity to highlight a need for legal change”⁷⁵, which one could argue was the case with the Court judgement on the matter of the Toledo lake. Concrete cases of legislative change being brought about by judicial signalling have taken place in the instances of the tobacco and asbestos litigation, through the introduction of remedial schemes⁷⁶. Finally, even unsuccessful cases can raise awareness of the issue at hand and affect change through the pressure of social attitudes of the consumers (and potentially of the firms, for the fear of losing consumers)⁷⁷.

There are also multiple ways in which unsuccessful climate change litigation cases result in fines, or equivalent financial loss, to corporations. For example:

“Even if a corporation avoids being held accountable by climate change victims, it may incur a series of costs in terms of liability for future climate harms, reputational damage and ongoing public scrutiny and pressure to disclose climate change risk. Moreover, governments may challenge private corporations for withholding from the public and investors information about climate change and its risks. Furthermore, company executives and directors may be directly sued for breach of their fiduciary duties and obligations to consider and disclose climate change risk.”⁷⁸

Such outcomes would come closer to acting as increased costs on firms with a higher carbon footprint, and thus produce desirable effects even when the litigation is unsuccessful.

⁷⁴ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 2.

⁷⁵ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 866.

⁷⁶ Ganguly, Setzer, and Heyvaert, 867.

⁷⁷ Ganguly, Setzer, and Heyvaert, 867.

⁷⁸ Ganguly, Setzer, and Heyvaert, 867.

Section 4.2: Direct deterrence of polluters' behaviour

This section examines the possibility that firms will respond directly to the costs associated with successful or unsuccessful lawsuits and change their business model to emit fewer GHG.

A range of literature looks at whether an increase in monitoring and punishment directly causes firms to pollute less or increase their adherence to environmental standards. Canonical economic theory on firm compliance and deterrence notes the primacy of two factors: the size of the punishment and the probability of getting caught⁷⁹.

Within the context of our paper, the punishment could entail either a fine or a turn in public opinion and consumption patterns. As mentioned in section 2, collective damages sued for within climate change litigation sum up to billions of dollars. If other plaintiffs follow the lead of the Pacific Coast Federation of Fishermen's Associations, the sued firms could be liable to paying the bill for the transformation of whole industries, as well as for the physical infrastructure needed to protect communities from climate harms.

The second factor is the probability of punishment. If climate change litigation cases against firms gain momentum and become successful, the probability of punishment is made high by the low number of Carbon Majors (companies responsible for such a high proportion of emissions, as evidenced in section 3.3). In summary, the two factors deemed as important by the theory of direct deterrence could be present for these types of cases.

Empirical work on direct deterrence suggests that both specific and general deterrence effects exist⁸⁰. That is, a firm might respond to monitoring of its activities specifically, as well as to an increased frequency of monitoring activities within its area of operation⁸¹. This supports the hypothesis that a high probability of getting sued, and not only direct litigation, can change firm behaviour. The policy recommendation of this insight is that increasing the awareness of climate change litigation, as well as supporting any existing cases, can have positive spill-over effects on companies which are not directly involved in the lawsuits. It is worth noting that, due to data availability, this research focuses on studies of companies transporting oil and pulp and paper mills⁸² and thus might not be perfectly applicable to Carbon Majors' behaviour.

⁷⁹ Becker, "Crime and Punishment: An Economic Approach," 173.

⁸⁰ Cohen, "Empirical Research on the Deterrent Effect of Environmental Monitoring and Enforcement," 10246.

⁸¹ Cohen, 10246.

⁸² Cohen, 10246.

Other examples of group litigation becoming a force for change are available outside of the realm of environmental regulation. In a more general overview of the mechanism, Koch concludes:

“The history of the American Federal Rule of Civil Procedure 23(b)(3) strikingly demonstrates that group litigation becomes a real political and social force for change as soon as it asks for damages and thus leads to adequate compensation, as well as to perceptible sanctions for wrongdoing. It is this remedy that makes the class action, as well as the associations' suit, a powerful tool for effective law enforcement.”⁸³

This provides reasons to be optimistic about the direct effectiveness of the collective damages claims brought forward in climate change litigation against private actors.

Section 4.3: Effect on prices and consumer decisions

This section examines the possible effect of climate change litigation on prices and consumption and finds empirical evidence to suggest that, within energy industries, firms are likely to pass an increase in costs onto consumers via higher prices.

Climate change litigation fines could theoretically translate into increased prices for activities with a higher carbon footprint. If this litigation resulted in frequent and high fines, this would effectively result in an increase of the costs of production for the companies involved. An increase in the price of one of the factors of production of a good can have the following possible effects: an increase in the price of the product, a reduction of the profit margin of the producer, or a decrease in other costs of production, if these can be controlled by the producer (for example, the salary paid to the employees). Thus, if fines could increase the costs of making products which require high emissions for their manufacture, this could potentially result in an increase in these products' prices. This section examines whether this argument is realistic.

It is relevant to examine cost pass-through by firms as a response to existing indirect 'cost of carbon' mechanisms. The EU's Emissions Trading System (ETS) is an example of a policy which increased the costs of carbon-intensive production. The ETS has also been studied extensively, and so can provide valuable information about producers' possible responses to fines on emissions. One study of the early ETS years finds pass-through rates as large as 40 to

⁸³ Koch, “Non-Class Group Litigation under EU and German Law,” 367.

100% (focusing on German and Dutch power sectors in 2005). A later study, focused on German prices up to 2009, found that the cost pass-through of the ETS was inconsistent, and that the scheme resulted in reduced profit margins⁸⁴. Studies based in Italy found ETS to cause cost pass-through, but of different magnitudes⁸⁵. Its size varied with different market power, the existence of excess capacity, and the power demand level⁸⁶. This shows that some cost pass-through can be expected to take place as a result of high fines on carbon-intensive activity, but that its rate is uncertain and will likely vary in different sectors and places.

Interestingly, many studies find that the pass-through of ETS costs was asymmetrical, meaning that the prices increase with a rise in the price of emission permits more drastically than they decrease when permit prices fall⁸⁷. Such asymmetric pricing responses have also been found in other industries, including gasoline pricing, agricultural products and some services⁸⁸. Prices rising faster than they fall is a phenomenon found in producer as well as consumer goods markets, and is found to often be substantial as well as durable⁸⁹. These examples suggest that even if the expected value of a climate litigation fine was to decrease with time (for example because the cases became less frequent), the effect on prices could prevail.

It is worth noting that, while the price of ETS permits fell considerably in the years following the 2008 financial crisis, emission penalties would not be dependent on the economic cycle for their effectiveness in the same way.

The effect of such a change in prices would thus be to make goods with a higher carbon footprint comparatively more expensive than those with lower emissions from production. If consumption of high-carbon goods is price-elastic, this will affect the patterns of consumption between goods with different footprints. This proposes a way for climate change litigation to filter its way into consumption patterns, and the amount of emissions from consumption.

There is significant evidence to suggest that changes in pricing can have an effect on consumer behaviour. Examples within environmental policy include the congestion scheme in central

⁸⁴ Alexeeva-Talebi, “Cost Pass-through in Strategic Oligopoly: Sectoral Evidence for the EU ETS,” 29.

⁸⁵ Chernyavs’ ka and Gulli, “Marginal CO2 Cost Pass-through under Imperfect Competition in Power Markets,” 1.

⁸⁶ Chernyavs’ ka and Gulli, 1.

⁸⁷ Zachmann and Von Hirschhausen, “First Evidence of Asymmetric Cost Pass-through of EU Emissions Allowances,” 1.

⁸⁸ Zachmann and Von Hirschhausen, 1.

⁸⁹ Peltzman, “Prices Rise Faster than They Fall,” 466.

London, which had the effect of decreasing the distance driven as well as fuel consumption⁹⁰. Other examples include in company-car subsidies⁹¹. But, importantly, “the evidence suggests that such examples of corrections to prices have been too limited and too localized to correct distorted prices in the transport sector; that is, the under-pricing of road use relative to the costs it imposes and relative to its potential substitutes”⁹², such as bus or rail travel. This supports the conclusion that an increase in the prices of carbon-intensive activities would likely have an effect on consumption, but also that a full correction of prices is long overdue.

Section 4.4: Investment decisions

This section discussed the potential for climate change litigation to influence the patterns of investment between less or more carbon-intensive economic activities. Our hypothesis is that the resulting fines, as well as reputational damage and a shift in prices and consumer behaviour, can all act to influence stock prices and long-term investment decisions. An important positive effect of this would be to halt the sinking of resources into carbon-intensive activities, and to redirect investment in the direction of low-carbon activities (the urgent need for which was discussed in section 3.4).

The idea that legal liability might affect investment is well-established. In 1992, Hettige et al. argued that “one possibility is that the expected profitability of investment in pollution-intensive sectors has also been affected by growing concern over legal liability or reputational damage”⁹³. This could come about via multiple channels; Cohen notes that a monetary sanction is likely to reduce the share or bond price of a company through decreasing its expected value⁹⁴. Furthermore, lenders might find extending value to this firm risky in the future⁹⁵. Cohen cites multiple recent studies within the oil and chemicals industries which point to negative environmental incidents reducing stock value of the involved firms⁹⁶.

Another channel through which climate change litigation is likely to affect investment is the change in relative prices (such as that discussed in section 4.3). The World Health Organisation

⁹⁰ WHO Regional Office for Europe, OECD, “Economic Cost of the Health Impact of Air Pollution in Europe: Clean Air, Health and Wealth,” 43.

⁹¹ WHO Regional Office for Europe, OECD, 43.

⁹² WHO Regional Office for Europe, OECD, 43.

⁹³ Hettige, Lucas, and Wheeler, “The Toxic Intensity of Industrial Production: Global Patterns, Trends, and Trade Policy.”

⁹⁴ Cohen, “Empirical Research on the Deterrent Effect of Environmental Monitoring and Enforcement,” 10250.

⁹⁵ Cohen, 10250.

⁹⁶ Cohen, 10250.

(WHO) argues that “the schedule of demand that follows from the wrong set of prices is not the same as the schedule of demand that would follow from a corrected set of prices. A correction to prices is likely to alter the composition, location, scale and timing of the investment required to meet future demand”⁹⁷. Thus, changes in costs and prices discussed in the section above can negatively affect investment.

Interestingly, WHO also notes that investment decisions can follow an anticipated rise in prices which hitherto did not reflect a negative externality and thus were artificially low⁹⁸. One such example is provided by discussion of air pollution in Europe, where, within the transport sector, “it is not the case that public and private investors have continued uninterruptedly to invest to meet the demand resulting from distorted prices”⁹⁹, apparently at least partially due to governments’ evaluations using shadow prices, which attempted to include the cost of externality¹⁰⁰. One reason for this was that “both public and private investors have sometimes assumed that the near future would bring a correction and have made their investment decisions in anticipation of it”¹⁰¹. Thus, the expectation of a future change in prices might be enough to influence investment. This is particularly attractive prospect for climate litigation, as sustained efforts, even if eventually unsuccessful, will create uncertainty which might inspire investors to postpone or drop investments in Carbon Majors.

Changes in firm value can also come about as a result of improved or poor environmental performance. The first has been found to increase firm value, and the latter to decrease it; environmental incidents and citizen’s complaints can cause the stock value of the firm to fall¹⁰². Based on observing this phenomenon in Argentina, Chile, Mexico, and the Philippines, Dasgupta claims that “capital markets, if properly informed, may provide the appropriate financial and reputational incentives”¹⁰³. This suggests that it could be effective for policy to support public awareness of different firms’ environmental performance. Similar dynamics are found in Europe, for example in a study of 142 environmental incidents in the years 2003-

⁹⁷ WHO Regional Office for Europe, OECD, “Economic Cost of the Health Impact of Air Pollution in Europe: Clean Air, Health and Wealth,” 43.

⁹⁸ WHO Regional Office for Europe, OECD, ix.

⁹⁹ WHO Regional Office for Europe, OECD, 44.

¹⁰⁰ WHO Regional Office for Europe, OECD, 44.

¹⁰¹ WHO Regional Office for Europe, OECD, 44.

¹⁰² Dasgupta and Mamingi, *Capital Market Responses to Environmental Performance in Developing Countries*, 3.

¹⁰³ Dasgupta and Mamingi, 3.

2006¹⁰⁴. The incidents are found to significantly decrease firm value, including for some of the world's largest corporations¹⁰⁵.

However, even if investment decisions respond to back lower-emitting activities, some empirical evidence suggests that prices and capital markets do not have a significant effect on firms' environmental performance. In a micro-level review of the perceptions of managers in the Canadian pulp and paper industry, Doonan et al. find that financial and consumer markets are a less important source of pressure than the action of governments and the public¹⁰⁶. The paper concludes that the importance of government regulation in deterring environmental misbehaviour by firms needs to be reasserted. This scepticism about the effectiveness of investment as a tool for influencing private sector's environmental decisions is seemingly supported by evidence from non-conventional pollution control policies in developing countries. One review of the literature concludes that there is little evidence that pressures exerted by capital markets or consumers cause any significant improvements in environmental performance¹⁰⁷.

There are, however, some reasons to believe that shifts in investment and risk analysis could have deeper effects on firm behaviour in the current global context. A recent interview with a leading asset management executive noted his willingness to vote against the reappointment of chief executives as a response to their failure to tackle the climate crisis¹⁰⁸. This was expressed by the chief executive of State Street (world's third largest asset manager, with total assets of \$2.2tn, \$38.3bn of which in fossil fuel companies), and carries substantial weight as "large asset managers, who do not own companies but exercise shareholder powers on behalf of clients, are uniquely positioned to hold the boards of oil and gas companies to account on the climate crisis and ensure a green energy transition"¹⁰⁹. This shows one way in which capital markets can influence firms' decisions when it comes to emitting GHGs.

Specifically, within climate change litigation, too, investment is a live subject. A case against Shell accuses it of failing to account for climate risks in its investment (Conservation Law

¹⁰⁴ Lundgren and Olsson, "Environmental Incidents and Firm Value—International Evidence Using a Multi-Factor Event Study Framework."

¹⁰⁵ Lundgren and Olsson.

¹⁰⁶ Doonan, Lanoie, and Laplante, "Determinants of Environmental Performance in the Canadian Pulp and Paper Industry: An Assessment from inside the Industry," 73.

¹⁰⁷ Blackman, *Alternative Pollution Control Policies in Developing Countries*, 1.

¹⁰⁸ Greenfield, "Fossil Fuel Bosses Must Change or Be Voted out, Says Asset Manager."

¹⁰⁹ Greenfield.

Foundation, Inc. v. Shell Oil Products US); other similar cases include shareholder Sarah Von Colditz against ExxonMobil, New York Attorney General v. Exxon Mobil Corp, as well as McVeigh v. Australian Retail Employees Superannuation Trust¹¹⁰. Legal experts expect that this trend will continue, given that “investors and insurers pay attention to the growing gap between scientific understanding of climate change and adaptation efforts”¹¹¹. Thus, investment pressures and obligations both play a part in the mechanism described in this paper: misleading investors about climate-related risks to their assets can form the grounds for climate change lawsuits (as well as, possibly, the dismissal of board members), and these lawsuits can in turn affect future investment decisions and stock prices of the future.

Furthermore, under our proposal, the financial risks linked with climate-unfriendly forms of production may tilt the investment calculus slightly in favour of renewable energy. This can have large effects given that various renewable energy sources have become more cost effective over time with cumulative investment. The IMF have suggested that “research and development in solar and wind technologies, their standardization, and economies of scale in manufacturing have resulted in increasingly efficient solar panels and larger wind turbines”¹¹², in contrast with nuclear and hydro technologies¹¹³. To the extent that certain kinds of renewable investment can beget further efficiencies, then, this suggests the existence of multiple investment equilibria: specifically, an exogenous shock to the investment calculus – as per our proposal – in this direction can in turn lead to further intensification of the same investment calculus, producing a virtuous cycle in favour of renewable technologies.

Section 5: Parallels to the development of consumer protection regimes

Section 5.1: Applicability to our subject and key lessons

Another lens with which to analyse our question is provided by the parallels with regimes which increased private sector’s liability in the past; one such prominent case is consumer right’s protection in the EU. With the obvious caveat that history must not necessarily repeat itself, it can be illuminating to consider the extent to which the dynamics discussed in the above sections have already played out in another area.

¹¹⁰ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 9.

¹¹¹ Setzer and Byrnes, 9.

¹¹² IMF, “Falling Costs Make Wind, Solar More Affordable.”

¹¹³ IMF.

There are important differences between the EU's consumer rights' regime and the mechanism of climate change litigation of firms discussed in this paper. Firstly, in the former, the people affected enter into a voluntary relation with the firm responsible for the effect of their product, as opposed to being an involuntary third party affected by production elsewhere. Secondly, the EU's consumer rights' regime developed as a series of EU-wide directives aimed at harmonising a set of already-existing national rules¹¹⁴ – a corresponding collection of national regulation on GHG emissions is absent.

However, many of its more detailed characteristics make EU consumer protection applicable to our subject. EU consumer rights regime is a model based on information as opposed to substantive regulation¹¹⁵, creating a parallel to the mechanism which is the focus of this paper. Furthermore, experts note the regime's increasing reliance on fundamental rights as a basis for legal claims¹¹⁶, echoing the increasing reliance of climate change litigation on human rights as its basis. Another relevant factor in the effectiveness of changing behaviour in the area of consumer protection has been the mechanism of class action, the frequent use of which in climate litigation has been discussed in section 2. Within consumer protection, class action “makes it possible to set aside one of the major obstacles to access to justice in a cross-border context, i.e. the cost, since it would thus be possible to achieve economies of scale by bulking up individual cases”¹¹⁷. Recommendations regarding the development of this mechanism, based on archival material from the 1990s, are presented in section 6.

The mechanism of consumer protection is also worth studying because it is widely understood to be successful, and thus provides a case where organised industry interests were subordinated to the formerly diffuse health and safety interests of individuals and communities. The success of the interaction of regulatory as well as legal systems within this context, facilitated through information and public awareness, make the regime worth studying in the context of this paper.

The EU consumer rights protection regime is widely understood to be successful. Some argue that this has had an effect of creating a ‘European brand’ of goods and services¹¹⁸, noting in particular that “a reflection of this EU brand is the export of European legal models”¹¹⁹. This

¹¹⁴ Howells, Twigg-Flesner, and Wilhelmsson, *Rethinking EU Consumer Law*, 94.

¹¹⁵ Howells, Twigg-Flesner, and Wilhelmsson, 7.

¹¹⁶ Benohr, *EU Consumer Law and Human Rights*, 18.

¹¹⁷ European Consumer Law Group, “ECLG Opinion on the Proposal for a European Parliament and Council Directive on Injunctions for the Protection of Consumer Interest, October 1996.”

¹¹⁸ Howells, Twigg-Flesner, and Wilhelmsson, *Rethinking EU Consumer Law*, 6.

¹¹⁹ Howells, Twigg-Flesner, and Wilhelmsson, 6.

‘exporting’ took place most strongly in the product liability and safety area, as well as unfair terms and unfair commercial practices¹²⁰. As such, this regime is an example of a legal model posed in favour of the population versus producers, which has been successful enough to influence other regions.

This mechanism developed in stages, moving increasingly into the legal realm. Benohr notes three key periods of development of EU consumer law: one based on the idea of the European market integration (and lasting until the Single European Act)¹²¹. This was followed by the European Community acquiring the formal competence to legislate on consumer rights and thus linking these issues to the internal market¹²². The most recent (and ongoing) phase is one of full harmonisation and of linking consumer issues to the charter of Fundamental Rights¹²³.

A foundational step for bringing consumer issues into the legal realm took place with the adoption of the Unfair Contract Terms Directive, after which contracts law has had to take note of European regulation. An important feature of the “introduction of contractual information duties [is that it] is often justified on the basis that this would be preferential to substantive regulation of consumer transactions”¹²⁴. Thus, EU consumer law relied on the principle of the duty to inform the consumer in order to correct the asymmetry between the stronger and the weaker party (producer and consumer, respectively)¹²⁵. This is applicable to our question to the extent that it exemplifies that legal solutions are one avenue through which significant power asymmetries in the modern economy can be redressed. While the duty to inform people about the ways in which production elsewhere can cause them climate-related harm does not lie with private companies (unlike about the consequences of consuming their products), governments could take it upon themselves to bolster this awareness in order to allow the legal solution to correct at least some of these asymmetries. Thus, one lesson brought by examining EU consumer protection is the emphasis on public access to information.

Criticisms rallied against EU’s consumer rights protection provide further learning points. Howells notes that the tendency of the regime to rely on information over substantive regulation “may become a replacement for some desirable substantive rights”¹²⁶, given that

¹²⁰ Howells, Twigg-Flesner, and Wilhelmsson, 6.

¹²¹ Benohr, *EU Consumer Law and Human Rights*, 18.

¹²² Benohr, 18.

¹²³ Benohr, 18.

¹²⁴ Howells, Twigg-Flesner, and Wilhelmsson, *Rethinking EU Consumer Law*, 96.

¹²⁵ Howells, Twigg-Flesner, and Wilhelmsson, 96.

¹²⁶ Howells, Twigg-Flesner, and Wilhelmsson, 7.

behavioural economics shows that there are substantial “limits of information as a means of protection”¹²⁷. In particular, “there is a risk that consumer protection is only seen as needed by marginalised weak consumers, whereas we feel consumers should be recognised as a class who are structurally poorly positioned to protect themselves in the marketplace”¹²⁸. A reliance on the litigation process to redress such a structural imbalance is likely to run into the issues of the very same imbalance of power being present in the legal realm, for example when it comes to access to information or money. Thus, much like in our problem, a legal solution might be second-best to regulation if we are serious about the correction of market power asymmetries. One could argue that this asymmetry is even larger, and thus the need to redress it more pertinent, where the harmed party never consented to be in any way involved or affected by the economic activity of the producer.

A further criticism shows that the need for international cooperation is not easily circumvented by a legal solution. A recent press release by the European Consumer Organisation, on a reform in the EU consumer rights regime states:

“The reform includes the obligation for Member States to foresee higher fines against rogue traders and grants consumers the possibility to terminate the contract if they are faced with an unfair practice. Unfortunately, the higher penalties are only possible if there is a coordinated enforcement action by the network of national consumer authorities, which reduces the likelihood of these higher penalties being imposed ... The biggest problem with consumer rights today is how poorly enforced they are”¹²⁹

This highlights the need for any redress system to not have to pass through a number of national hoops, in order to realise gains such as rapid effectiveness amidst varied political landscapes (discussed in section 3.1).

Section 5.2: Economic response to the legal protection of consumer rights

Interestingly, a brief review of the evidence suggests that consumer protection legislation and litigation affected producers through all of the avenues of influence discussed in section 4.

Direct deterrence forms a large part of the economic response to the legal protection of consumer rights. Multiple authors note that the adoption of the Unfair Contracts Directive

¹²⁷ Howells, Twigg-Flesner, and Wilhelmsson, 7.

¹²⁸ Howells, Twigg-Flesner, and Wilhelmsson, 7.

¹²⁹ Pant, “Consumer Law Enforcement Gets a Welcome Boost.”

produced significant changes in the practice of consumption and production in some countries (notably the UK)^{130,131}. As noted in section 4.1, within tobacco and asbestos litigation, judicial signalling brought about some concrete cases of legislative change through the introduction of remedial schemes¹³². However, even in the instance of such prominent cases, proving causality has been a key hurdle to success. Much like in the area of climate change litigation, which faces challenges to establish causality¹³³, archival material shows how in an early tobacco case in Finland “the Court has ruled its case that Tobacco companies in principle can be liable when we have damage [but] because of lack of causality that couldn’t be proved efficiently, the consumer did not win the case”¹³⁴.

When it comes to price pass-through to consumers, Howells notes that “all inalienable consumer rights could be viewed as enforced insurance as the potential liability has to be factored into the price of goods and services.”¹³⁵ The empirical evidence, however, is inconclusive as one of the areas tackled by EU consumer protection is the lack of price transparency¹³⁶ and monopoly pricing¹³⁷ – both of which suggest scope for consumer protection to bring prices down.

In terms of the effect on investment, evidence from outside the EU shows that consumer rights can affect the value of a firm. In response to common criticism that the fines for failing to meet safety standards are not high enough, Laplante and Lanoie show that, within the safety standards area in Canada, fines had the effect of decreasing the firm stock value¹³⁸.

The above findings add more substance to our hypothesis of the avenues of influence for climate change litigation. Previous legal measures to redress asymmetric power in a large market have affected economic behaviour through the factors outlined in our (hypothetical) analysis.

¹³⁰ Howells, Twigg-Flesner, and Wilhelmsson, *Rethinking EU Consumer Law*, 129.

¹³¹ Burgess, “Flattering Consumption: Creating a Europe of the Consumer,” 93.

¹³² Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 867.

¹³³ Setzer and Byrnes, “Global Trends in Climate Change Litigation: 2019 Snapshot,” 1.

¹³⁴ European Consumer Law Group, “ECLG Meeting 22 & 23 March 1999 Minutes,” 8.

¹³⁵ Howells, Twigg-Flesner, and Wilhelmsson, *Rethinking EU Consumer Law*, 8.

¹³⁶ Van Boom, “Price Intransparency, Consumer Decision Making and European Consumer Law.”

¹³⁷ Howarth, “Internal Policies: The Commission Defends the EU Consumer.”

¹³⁸ Laplante and Lanoie, “The Market Response to Environmental Incidents in Canada: A Theoretical and Empirical Analysis,” 657.

Section 6: Policy recommendations

A number of important policy recommendations can be made on the basis of the above analysis. A general recommendation of the sections discussing the potential effectiveness of climate change litigation is that, where possible, such litigation should be supported. Such broad support can be expressed by governments in international forums, especially those with legal responsibilities or competences, such as the UN or European Union.

Section 2 explained how legal specialists believe that these types of cases have a chance of being successful in the future, as the state of scientific knowledge and climate change impacts improve over time¹³⁹. Other factors cited in support of this hypothesis are the changing nature of legal disclosure and some constitutional contexts¹⁴⁰, which according to some experts are moving in the direction favouring climate activists. It follows that, in order to bolster climate change litigation against firms, policy should support the advancement in climate science, the knowledge about specific companies' polluting behaviour (championed, among others, by the Climate Accountability Institute) as well as adherence to international human rights law and some of the emerging legal instruments. In particular, efforts of new science helping to establish even more evidence as to the causality between GHG emissions and climate harms should be sustained.

Policy should support group legal action. Beyond generally taking responsibility for disseminating information about climate harms and science, governments or other institutions could establish specific mechanisms to make class action easier. Recommendations from European consumer groups and legal bodies on how to reinforce EU consumer class action could serve as an inspiration. Such guidance notes that “legal aid and advice services and informal redress mechanisms should be available, ... a framework should be created to make it easier for class and group actions to be taken on behalf of consumers in all member states and between member states [and] leaflets on consumer redress should be prepared and disseminated widely”¹⁴¹.

¹³⁹ Ganguly, Setzer, and Heyvaert, “If at First You Don’t Succeed: Suing Corporations for Climate Change,” 850.

¹⁴⁰ Ganguly, Setzer, and Heyvaert, 850.

¹⁴¹ BEUC, “A Single Market for Consumers: A Submission to the High Level Group on the Operation of the Single Market, from BEUC, the European Consumers Organisation.”

Given the prominence of NGOs in acting as plaintiffs in climate change litigation¹⁴² discussed in section 2, one important policy recommendation is to continue, and possibly increase, the support provided to climate-focused NGOs. It is worth noting that, in the case of cases brought against climate regulation, 70% of the plaintiffs were industry actors and 27% were right-wing think-tanks¹⁴³. This provides some information as to the types of groups which merit government funding, if climate outcomes are considered important.

An important lesson to be taken from the review of EU consumer rights' protection regime is that litigation and regulation should go hand in hand, and that relying on an information and litigation-based system where large structural inequalities are present carries substantial risks.

There is an urgent need to design systems which will protect vulnerable consumers from being affected by the cost pass-through in energy prices. One compelling reason for this is social justice, not least because of the very real risks to health and life which are posed by fuel poverty. More motivation could be provided by the drive for government popularity: when the price of electricity increased as a response to the EU ETS, consumer complaints were common¹⁴⁴. The recent case of *Gilets Jaunes* in France provides another example of the cost of policy design which does not take equity into account amidst changing costs of fuel.

One way to finance the above policies would be to divert investments currently sunk into fossil fuel companies. All of the mechanisms described above, as well as the whole transition needed to limit global warming to a 1.5°C rise from pre-industrial levels, could be financed many times over by the funds currently spent on government subsidies to fossil fuel interests. By way of reminder, the required annual 'green' investment amounts to around \$830 billion¹⁴⁵. A recent IMF report found that worldwide government energy subsidies amounted to "\$4.7 trillion (6.3 percent of world GDP) in 2015 and \$5.2 trillion (6.5 percent of GDP) in 2017"¹⁴⁶. Of these funds, 44% were channelled into coal, followed by 41% for petroleum and 10% for natural gas¹⁴⁷. This magnitude of investment calls into question the potential of the mechanism described in this paper: akin to putting a band-aid on a bullet wound.

¹⁴² Setzer and Byrnes, "Global Trends in Climate Change Litigation: 2019 Snapshot," 5.

¹⁴³ Adler, "U. S. Climate Change Litigation in the Age of Trump: Year Two," 25.

¹⁴⁴ Zachmann and Von Hirschhausen, "First Evidence of Asymmetric Cost Pass-through of EU Emissions Allowances," 1.

¹⁴⁵ Ranging from 150 billion to 1700 billion USD2010 (at 2010 \$US prices).

¹⁴⁶ Coady et al., "Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates," 5.

¹⁴⁷ Coady et al., 5.

Within private finance the situation looks similar. Worldwide, 33 banks have channelled \$1.9 trillion into fossil fuel investments in the years 2016-2018. This amount could cover 2.2 years of annual worldwide investment needed until 2030 to limit global warming to 1.5°C. The small number of banks responsible for such a fantastic number of funds brings to mind the Carbon Majors – perhaps the banks, too, should be involved in some climate change lawsuits. At the very least, regulators should start supporting governments and finance in having their own green transition.

Section 7: Conclusion

In this paper, we used an interdisciplinary approach to extend the current growing legal literature on climate change litigation into the realm of its possible economic effects. Economic theory and evidence, as well as the analysis of environmental and consumer protection regulatory regimes, suggest that climate change litigation can affect economic production, prices, consumer behaviour and investment decisions. In order to do this, it has to produce reputational damage, fines of a high enough magnitude, and take place frequently.

We by no means argue that litigation should be considered as the one-stop fix to economic behaviour causing climate change. But policy response has been slow and the nationally-determined contributions from the Paris Agreement, even if met, are not enough to allow us to limit the warming to 2°C from pre-industrial levels with high probability, let alone to the 1.5°C needed to avert worst outcomes. There is thus a need for other solutions, in particular those which can summon change fast and on a global scale. We showed that the advantage of climate change litigation is that it can potentially become effective sooner than the wide-ranging regulation which will ultimately be required to halt greenhouse-gas emissions.

Beyond this, we have argued that the collective action characteristics of the climate change crisis as well as the concentration and power of the worst offenders in the global economy make climate change litigation a particularly fitting response mechanism.

The limitations of this paper are its coverage of a relatively large number of issues, and thus a corresponding sacrifice of depth. Our discussion of the lessons from previous attempts to regulate various environmental and consumer rights' areas is limited by the scope of this paper and should be significantly expanded by future work.

Our analysis might also be over-simplifying reality by treating businesses as unified actors with a single and simply-defined interests. Interest representation literature provides examples

where “business operating in the EU’s single market often splinters when it comes to employment and social issues”¹⁴⁸. Furthermore, multiple actors within a firm will be involved in its decision-making and might have conflicting interests¹⁴⁹. In the light of this, Cohen argues that deterrence of environmental pollution is more complicated than a government-polluter-public model would allow¹⁵⁰. However, it can be safe to say that Carbon Majors are likely to be unified in not wishing to pay fines for their past GHG emissions.

The largest conceptual limitation to climate change litigation having a significant and corrective impact on economic behaviour is the presence of fossil fuel government subsidies and private finance of a grotesque magnitude. Fossil fuels receive over 6% of global annual GDP in government subsidies every year, while limiting global warming to 1.5°C above pre-industrial levels would cost less than half of that. A continued increase in fossil fuel subsidies might mean that none of the effects described in this paper take place, even if climate change litigation against firms takes off – any fines might simply amount to a drop in the ocean.

¹⁴⁸ Rasmussen, “The Battle for Influence: The Politics of Business Lobbying in the European Parliament,” 8.

¹⁴⁹ Cohen, “Empirical Research on the Deterrent Effect of Environmental Monitoring and Enforcement,” 10246.

¹⁵⁰ Cohen, 10246.

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