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How Well Do Governments Assess the Distributional Impacts of Policy?

Caroline Cecot¹  | Robert W. Hahn^{2,3} | Eslem Imamoglu⁴ ¹George Washington University Law School, Washington, DC, USA | ²Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA | ³Smith School, University of Oxford, Oxford, UK | ⁴Georgetown University, Washington, DC, USA**Correspondence:** Eslem Imamoglu (ei139@georgetown.edu)**Received:** 25 March 2025 | **Revised:** 8 October 2025 | **Accepted:** 22 December 2025**Keywords:** benefit–cost analysis | comparative governance | distributional analysis | equity | regulation | regulatory impact analysis

ABSTRACT

Policy makers are showing increased interest in understanding the impacts of public policies on subgroups of the population. We provide the first cross-regional comparison of distributional analyses by examining 907 benefit–cost analyses (BCAs) in the United States, the United Kingdom, and the European Union from 2016 through 2020. In these regions, we find almost no quantification of net benefits for a population subgroup (2 US BCAs, 0 UK BCAs, and 1 EU BCA). Distributional weights were also rarely used (5 UK BCAs, none elsewhere). Moreover, when distributional weights were used in the United Kingdom, they were used mainly to evaluate policies involving income transfers between low- and high-income groups rather than in broader regulatory analyses. We consider possible explanations for the lack of quantification of net benefits by subgroup along with the implications of our findings for conducting distributional analysis.

JEL Classification: K23, K32, Q58, I0

1 | Introduction

Many governments use benefit–cost analysis (BCA) to understand the efficiency impacts of proposed public policy interventions on the overall population.¹ But economists have also highlighted the importance of considering the distributional impacts of such interventions in addition to their efficiency impacts (Hicks 1939; Kaldor 1939; Harberger 1978; Blinder 1987; Gruber 2005; Piketty 2022). Because there are almost always winners and losers from any proposed policies, it can be useful for decision makers to understand how both the overall population and various groups within the population are likely to be affected (Arrow et al. 1996). The application of BCA to proposed policies has been widely studied and evaluated (Sunstein 2018). More recently, scholars have been turning their attention to the actual use of distributional analysis, which is the tool that considers the economic impacts of proposed policies on subgroups of the population. This paper provides the first multi-regional

evaluation of distributional analyses, focusing on analyses of regulations in the United States, the United Kingdom, and the European Union.²

We focus on the United States, the United Kingdom, and the European Union because all three regions encourage distributional analysis to some extent, wield influence, and make their analyses publicly available. In all three regions, calls for paying attention to distributional impacts of regulation are longstanding. In the United States in 1993, the Clinton administration issued Executive Order 12,866, which listed “distributive impacts” and “equity” as important considerations when seeking to maximize net benefits of regulations using BCA (Executive Order 12,866 1993). In 2003, the UK Treasury’s Green Book encouraged using distributional weights applied to different income-based subgroups in impact assessments, requiring analysts to justify when deciding not to use such weights in their analysis (HM Treasury 2003, 79). And in the European Union,

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the Better Regulation Guidelines acknowledged that distributional effects should also be “proportionately assessed and considered” (European Commission, 28).

Our study builds on a growing literature that analyzes government BCAs of proposed policies. A paper by Hahn et al. (2000) introduced the idea of scoring BCAs using objective criteria. More recent work has focused on the issues of distribution and equity in BCAs in specific regions or contexts (Robinson et al. 2016; Ellig 2016; Zimmermann and Pye 2018; Cecot and Hahn 2022; Revesz and Yi 2022; Hemel 2022; Febrizio 2022). Complementing this work is an analysis that compares BCAs across countries, but does not address distributional issues (Cecot et al. 2008).

While previous research has examined distributional analyses in isolated regional contexts, often focusing on a single region or policy domain, this paper takes a broader view by comparing the United States, the United Kingdom, and the European Union. Our goal is to assess the extent to which distributional analysis of important proposed policies is performed in each region, highlight different approaches across regions, and suggest ways to improve the evidence base for policymaking. By analyzing these regions side by side, we are able to identify key similarities and differences that help explain outcomes across regions. We examine how features such as analytical guidance, oversight, and administrative processes could affect implementation. This comparative perspective allows us to uncover additional insights that are obscured when regions are studied in isolation.

We begin by defining what we mean by a “distributional analysis.” For our purposes, a distributional analysis is a quantitative or qualitative *ex ante* (or prospective) discussion of the benefits or costs of a proposed regulatory policy for at least one specific subgroup of the population. Generally, these subgroups may be demographic subgroups (based on income or other characteristics) or industry subgroups (such as small entities), but our analysis focuses on distributional analysis for demographic subgroups.³ Distributional analysis of small entities generally does not involve evaluating the downstream welfare effects on subgroups of the population, which is our focus.

Because governments in the United States, United Kingdom, and European Union all use BCA to evaluate proposed policies and often post these analyses online, we chose to examine distributional analyses of proposed policies in these three regions. We selected the same five-year period, 2016 through 2020, for all three regions to ensure some degree of comparability in our sample. During this time, all three regions had guidance documents encouraging the use of distributional analysis. We chose this specific five-year period because it was the most recent five-year period where relevant analyses were identified and available for all three regions. We do not expect the specific time period to matter. Nonetheless, we extend the sample in the United States by manually identifying relevant analyses to evaluate the potential effect of an intense focus on distributional analysis during the first 2 years of the Biden Administration.

We began by identifying BCAs completed across regions during this period, yielding a sample of 907 BCAs for our analysis. Importantly, we limit our sample to analyses of proposed

policies as opposed to retrospective evaluations of policies, and we generally exclude analyses of changes in public expenditure programs or taxation, which tend to be treated differently in some of these regions. Next, we implemented a search algorithm (discussed in more detail in Section 3) to determine whether the BCA was likely to contain a distributional analysis of a demographic subgroup. The algorithm, which differed across regions because of differences in their policy assessment processes, resulted in a sample of 244 BCAs. Finally, we analyzed this sample to identify all BCAs that contained a qualitative or quantitative distributional analysis, yielding 17 US distributional analyses, 28 UK distributional analyses, and 15 EU distributional analyses. We then scored each of these analyses on a variety of objective criteria to examine their characteristics and the extent of quantification of benefits or costs that accrue to relevant subgroups.

The empirical analysis yielded four main results. First, relatively few BCAs in each of the three regions contain a qualitative or quantitative discussion of the distributional impacts associated with a proposed policy on a subgroup of the population. In our sample, we find that 9% of analyses in the United States, 6% in the United Kingdom, and 7% in the European Union contained some discussion of distributional issues. Second, we find that there is almost *no* quantification of the net benefits of a proposed policy for a subgroup of the population. We identified 2 US BCAs, 1 EU BCA, and none in the United Kingdom. Third, the United Kingdom is the only region that has used distributional weights, which is not surprising given the specific guidance on using weights in the United Kingdom in HM Treasury’s Green Book (2003). More surprising, however, is how few analyses used distributional weights in our five-year sample period even in the United Kingdom (5 such analyses out of 489 UK analyses during our sample period). Moreover, distributional weights were used mainly to evaluate policies involving income transfers between low- and high-income groups rather than in broader regulatory analyses. This matters because debates over weighted benefit-cost analysis in the United States have centered on its use in proposed regulatory policies that do not primarily transfer income across groups.⁴ Fourth, the United States is the only region that discusses “environmental justice” or “equity” issues using those labels. Finally, in light of the Biden administration’s greater focus on distributional impacts, we also examined eight distributional analyses completed in the first 2 years of the Biden administration.⁵ We found that, while agencies are more likely to discuss environmental justice considerations, they also do not compute net benefits for a particular subgroup of the population.⁶

Our analysis suggests that while officials and regulators may be interested in directives calling for greater consideration of distributional concerns, quantitative analysis remains rare. This raises the question of why such limited analysis of distributional issues persists across regions with similar stated goals but different guidelines, oversight structures, and administrative processes. In the conclusion, we draw on Robinson et al. (2016) to highlight the barriers that appear to cut across regions. We also emphasize the role of weak information-sharing and limited diffusion of knowledge across jurisdictions. We close by offering recommendations on how governments could facilitate more systematic and useful distributional analysis in the future.

The plan of this paper is as follows: Section 2 briefly describes the regulatory review process in the three regions, highlighting some important similarities and differences. Section 3 describes our empirical strategy and results. Section 4 reviews conclusions and discusses implications of this research. A [Supplemental appendix](#) provides details on the data.

2 | Institutional Context

While many governments often use economic analysis to evaluate proposed regulations, the approaches to policy evaluation often vary (Wiener and Alemanno 2011). The United States, United Kingdom, and European Union all conduct some form of BCA that uses a partial equilibrium economic framework to evaluate proposed policies.⁷ In addition, all three regions have noted the importance of considering distributional impacts in some contexts for some subgroups. But the domain of proposed policies subject to analysis and the process for reviewing BCAs differ among regions. It is most limited in the United States, where agencies conduct BCAs of “significant” regulatory interventions. In the United Kingdom, meanwhile, a broad range of proposed policies are subject to analysis. The same is true for the European Union, where the European Commission conducts BCAs for a range of proposed policies and bases the extent of analysis on the importance of the proposed policy.

In the United States, agencies conduct BCA to comply with various executive orders (Revesz and Livermore 2008; Sunstein 2018). These analyses summarize the expected aggregate economic effects of regulations deemed “significant,” which include regulations having an annual effect on the economy of \$100 million or more (Executive Order 12,866 1993).⁸ A regulatory agency that proposes a qualifying regulation generally conducts the BCA (which in the United States is often referred to as a regulatory impact analysis), and the Office of Information and Regulatory Affairs (OIRA) within the White House Office of Management and Budget reviews the agency’s BCA. OIRA also prepares guidance documents, referred to as circulars, to help agencies comply with executive orders. One such document, Circular A-4, has long provided technical guidance for preparing BCAs on regulatory proposals, discussing topics that range from choosing an appropriate baseline to selecting a discount rate (U.S. Office of Management and Budget 2003). In addition, many agencies issue their own BCA guidance documents (e.g., U.S. Environmental Protection Agency 2014, 2024; U.S. Department of Health and Human Services 2016).

Over time, various executive orders issued by presidents have highlighted the need to explore the distributional implications of regulations and not just their aggregate effects. Executive Order 12,866, the replacement for the executive order that first required BCA at agencies (Executive Order 12,291 1981), states that agencies should consider distributional impacts and equity. Some later efforts have been associated with a concern for the environmental justice implications of government interventions. President Clinton, for example, issued Executive Order 12,898, which directed agencies to identify and address high adverse health or environmental effects of its programs on minority populations and low-income populations. President Obama also expanded on the consideration of distributional

impacts in a separate order, requiring agencies to include values like “equity, human dignity, fairness and distributive impacts” (Executive Order 13,563 2011). During this period, Circular A-4 (U.S. Office of Management and Budget 2003) included only a brief discussion of distributional analysis, whereas some agency-specific guidance provided more detailed treatment (e.g., U.S. Environmental Protection Agency 2014; U.S. Department of Health and Human Services 2016). The analyses that examined BCAs following these orders and guidelines, however, have generally found distributional analysis to be lacking (see Robinson et al. 2016; Ellig 2016; Febrizio 2022; Cecot and Hahn 2022).

More recently, the Biden administration made inclusion of equity concerns a major part of its reform initiatives, issuing several orders directing agencies to consider these priorities (e.g., Executive Order 13,985 2021; Executive Order 14,035 2021; Executive Order 14,091 2023). In 2023, OIRA updated Circular A-4 to include more discussion of approaches for distributional analysis (U.S. Office of Management and Budget 2023a). For the first time, Circular A-4 suggested that agencies could rely on a “weighted” benefit–cost analysis that weighs impacts to different income-based subgroups differently. In the associated “Explanation and Response to Public Input,” OIRA justified this focus on distributional weighting when evaluating regulatory policies by noting that the United Kingdom has employed weighted analysis “for two decades” (U.S. Office of Management and Budget 2023b, 41). Although the Trump administration has directed the Office of Management and Budget to revoke this guidance and return to the older Circular A-4 (U.S. Office of Management and Budget 2003), even the older version encourages agencies to conduct distributional analysis and quantify important distributive effects, though it does not refer to any weighting of impacts.⁹

In the United Kingdom, agencies conduct BCA (which is referred to as an impact assessment) on a broad range of proposed regulatory and legislative policies (Department for Business and Trade 2023). In addition, the Equality Act of 2010¹⁰ requires agencies to give “due regard” to policy impacts on certain covered socio-economically disadvantaged groups, which includes studying and considering the distributional effects of interventions on these groups within BCAs. The Act covers groups based on age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation. A Regulatory Policy Committee then reviews completed impact assessments.

Like the United States, the United Kingdom provides guidance for its agencies on conducting BCA. The guidance for regulatory impact assessments generally, the Better Regulation Framework (Department for Business and Trade 2018, 2023), makes a few references to distributional analysis, generally encouraging its use when “appropriate and proportionate” and especially for small businesses. In practice, however, guidance developed by HM Treasury, referred to as the Green Book (HM Treasury 2003, 2022), is key because it provides practical guidance on conducting BCA and distributional analysis. In particular, it encourages using distributional weights in impact assessments, requiring analysts to justify when deciding not to use such weights in their analysis. The Green Book bases its

recommendation on the economic principle of the diminishing marginal utility of income (Layard et al. 2008; Sunstein 2023), recommending the use of 1.3 as the elasticity of the marginal utility of income. This estimate, when combined with income data, can be used to calculate welfare weights that adjust costs and benefits across income groups. We note, however, that HM Treasury is the UK agency that controls government expenditures, a context that is outside the scope of our paper. For that reason, our paper does not generally examine how HM Treasury itself implements its guidance. Instead, we look at how the guidance has been implemented by agencies that analyze proposed policies that are not government expenditure programs. In specific contexts, scholars have found that even the more detailed guidance has been insufficient to inform policy (Walker 2007). And some prior work has suggested that the extent of distributional analysis is also limited in the United Kingdom (Deighton-Smith et al. 2016; Zimmermann and Pye 2018). Specifically, Zimmermann and Pye (2018) investigated how distributional impacts are considered in BCAs undertaken by then-Department for Energy and Climate Change between 2009 and 2017. They found that the majority of BCAs for these energy and climate policies did not fully consider the impacts of policies on vulnerable groups in society and that only eight of the 79 BCAs in their sample contained what the authors considered a detailed distributional analysis. Nonetheless, the UK experience on distributional analysis has been portrayed as longstanding and extensive in the context of analyzing proposed regulations and has been used to justify considering more widespread use of weighted benefit-cost analysis in the United States for such contexts (U.S. Office of Management and Budget 2023b; Adler 2016).

Finally, the European Union has engaged in economic evaluation of policy interventions since 2002 (Cecot et al. 2008; Dunlop et al. 2012). The European Commission conducts BCA (also called impact assessment) for all proposed policies that are likely to have significant economic, environmental, or social impacts adhering to principles of proportionality in its level of assessment (European Commission 2015). An independent Regulatory Scrutiny Board (formerly the Impact Assessment Board) then reviews the BCAs (European Commission 2015). The main guidance document, the European Commission's Better Regulation Guidelines (2015), refers to distributional analysis several times. Although it notes that aggregate BCA remains the primary focus and must be kept clearly distinguished from any "distributional impacts and transfers," it also states that distributional effects should also be "proportionately assessed and considered" (European Commission 2015, 28). We do not know of any research examining the extent of distributional analysis in the European Union.

3 | Methodology and Results

This section is divided into three subsections. Subsection 3a explains the sampling approach and data collection procedures we used for the three regions for the main sample period covering 2016 through 2020. Subsection 3b reviews our main results. Finally, subsection 3c discusses additional data we collect on the Biden administration and presents detail on the issue of distributional weighting in the United Kingdom.

3.1 | Main Sample

We discuss the US, UK, and EU sampling procedures in turn. The sampling procedures and the policies subject to analysis differ across the three regions, which means that our rates of distributional analysis are not directly comparable across regions.

For the United States, our sample begins with all government regulations that undergo economic analysis under Executive Order 12,866, which are generally those regulations deemed to be "significant." The United States does not maintain a centralized database of BCAs. Because OIRA reviews these regulations, however, we can identify this sample using OIRA's Reports to Congress, published on the agency's website, that list the regulations reviewed in the prior fiscal year. We exclude analyses of transfer regulations, or those regulations with the primary purpose of transferring money from one group to another, and evaluations of government expenditure programs. Such regulations are conceptually different and follow separate guidance in the United States (Lienke 2024; U.S. Office of Management and Budget 2023c). For the sample period, 2016 through 2020, OIRA reviewed 200 BCAs of agency regulations. We restrict our attention to regulations that monetize at least some benefits and some costs for the general population, which is a subset that OIRA identifies in its Reports to Congress. We assume that this subset of relatively complete BCAs is more likely to contain additional elements such as a distributional analysis (Cecot and Hahn 2022). This restriction reduces our US sample to 54 analyses during the sample period.

Next, we examine these analyses to assess whether they contain a distributional analysis of a demographic subset of the population that is at least qualitative. Because the United States does not have a centralized database of BCAs, we manually find these economic analyses by searching rulemaking dockets on [Regulations.gov](https://www.regulations.gov) and agency websites. We successfully locate 83% of the US analyses (details provided in the [Supplemental appendix](#)). To qualify as a distributional analysis, the analysis must provide an examination of how the impacts of the policy are distributed across specified subgroups. This examination can include quantifying benefits or costs for specific subgroups or comparing the distributional effects of different policy options. Simply mentioning distributional concerns without further elaboration or including a conclusory statement about distributional effects is not considered a distributional analysis for the purposes of our study. Of the 45 BCAs that monetize at least some benefits and costs that we were able to locate, 17 contain a qualifying distributional analysis of a demographic subgroup of the population.

Once we identify a distributional analysis, we score the analysis on a limited set of objective yes or no questions. This "scorecard" approach, originally developed in Hahn et al. (2000), relies on the questions used in Cecot and Hahn (2022). In particular, we score the distributional analysis on whether it is motivated by "environmental justice" or "equity" considerations, whether at least some benefits are quantified for a subgroup, and whether at least some costs are quantified for a subgroup. Although the BCAs are identified based on whether they include a distributional analysis for a demographic subgroup, our analysis evaluates all included distributional analyses, even those for industry subgroups. For transparency, we list the subgroups that are

analyzed in the distributional analysis. The advantage of the scorecard approach is that it can be replicated easily because the criteria for scoring the attributes of the distributional analysis are objective. The disadvantage is that objective measures may not provide useful information on the quality of a distributional analysis.

For the United Kingdom, we examine BCAs, referred to as impact assessments, conducted between 2016 and 2020 for proposed policies. Unlike in the United States, the United Kingdom prepares an impact assessment for every proposed policy, regardless of its expected impact. These assessments are stored in a centralized database organized by year, which means that we found 100% of the UK analyses we identify as relevant.¹¹ The database includes all policies that require legislation (i.e., those that propose changes to the status quo). However, it excludes analyses related to public expenditures and taxation, as these typically do not require legislation in the United Kingdom. As a result, despite differences in coverage—namely, all proposed regulations in the United Kingdom versus only significant regulations in the United States—the domain of the initial samples remains comparable. Within the sample period, we identify 489 economic analyses after removing duplicates.

For the US sample, we limited our search for distributional analyses by manually examining BCAs for non-transfer rules that monetize at least some benefits and costs. The United Kingdom, however, does not systematically summarize this information, so we could not easily reduce our sample for our manual analysis in the same way.¹² Instead, we use a two-step approach to identify distributional analyses of demographic subgroups of the population in the United Kingdom. First, we deploy a search algorithm using specific keywords on the entire database of BCAs to identify the economic analyses most likely to contain a distributional component. Using the keywords “distributional” or “equality,” we identify a sample of 92 impact assessments during the time period. We selected these specific terms because the institutional context suggests that they are the ones commonly associated with distributional analysis in the United Kingdom. For example, the Green Book (HM Treasury 2022), the United Kingdom’s central guidance for economic analyses, uses the phrases “distributional analysis,” “distributional appraisal,” and “distributional weighting” to refer to the analysis and its components. In addition, the UK Equality Act of 2010, which mandates consideration of effects on certain demographic groups, is frequently cited as a rationale for including distributional analysis in BCAs. Accordingly, UK analyses that examine demographic distributional effects are very likely to include the terms “distributional” or “equality.”

Our methodology relies primarily on a keyword search to identify economic analyses likely to contain a distributional analysis, which we then manually examine to confirm whether they do. We acknowledge a limitation of this approach: some assessments may include a distributional analysis without using our selected keywords. However, for the reasons discussed above, we believe the keyword search captures the vast majority of relevant economic analyses. To evaluate its performance, we draw on prior work by Zimmermann and Pye (2018), who identified “good” (green) distributional analyses in UK energy and climate policy assessments from a different time period. Our keyword

search successfully flags these assessments, suggesting strong alignment. We also manually examine a random sample of 20 economic analyses that were not identified by our keyword search to confirm that they do not include a distributional analysis of demographic subgroups. Overall, our keyword search offers a systematic and reproducible method for generating the sample we analyze in greater detail.

While our search algorithm identifies assessments likely to contain a distributional analysis, it is necessarily overinclusive in that it includes impact assessments that use the keywords in other contexts or in passing. For this reason, we then manually analyze the usage and context of the keywords “distributional” and “equality” to confirm whether there is a discussion that would qualify as a distributional analysis, just as we do to identify the final US sample. This process identifies a sample of 28 assessments that contain a distributional analysis. Although we do not limit our sample to impact assessments that monetize at least some benefits and costs as we did in the United States, the majority of these 28 impact assessments monetized at least some benefits and costs. This lends support to our assumption for the US sample that monetization of aggregate impacts is correlated with more extensive analysis of not only aggregate impacts but also supplemental analysis such as distributional analysis of impacts on subgroups. After identifying our sample of distributional analyses, we score the analyses using the same scorecard as we used for the US sample.

The European Union conducts impact assessments for all proposed policies that are likely to have significant economic, environmental, or social impacts (European Commission 2015). Like the United Kingdom, the European Union provides a database of all completed impact assessments, which allows us to find 100% of the EU analyses we identify as relevant.¹³ To identify distributional analyses, we follow a similar two-step approach to the United Kingdom. First, we use a search algorithm, identifying any document that contains the word “distributional” or “equality” within its content. Similar to the UK search, these keywords are likely to capture discussions related to the distribution of impacts across different groups. This search algorithm identified 98 of the 218 impact assessments that were published during our sample period. Next, we manually analyze the usage and context of the keywords “distributional” and “equality” to confirm whether there is a discussion that would qualify as a distributional analysis. For the European Union, we also refer to an annex that is often included in EU impact assessments and outlines the stakeholders affected by each policy intervention, such as citizens, businesses, small-medium enterprises, and governments, and tends to include benefits, costs, or policy options. Our manual assessment of the 98 impact assessments identifies 15 distributional analyses conducted during our 5-year sample period. After identifying our sample of distributional analyses, we score the analyses using the same scorecard as we used for the other regional samples.

3.2 | Results

A summary of results for our main sample is shown in Table 1, which provides statistics for the US, UK, and EU regions. The total number of BCAs reviewed is 907, with 200 US BCAs, 489

TABLE 1 | Distributional analysis sample across regions.

	United States	United Kingdom	European Union
Total regulations ^a	200	489	218
Examined ^b	54	92	98
Distributional analyses ^c	17 (9%)	28 (6%)	15 (7%)
Out of the distributional analyses			
Computes net benefits for a subgroup	12% (2)	0% (0)	6% (1)
Contains a quantitative measure of benefits or costs for a subgroup ^d	94% (16)	18% (6)	80% (12)
Uses distributional weights	0% (0)	18% (5)	0% (0)
Considers environmental justice ^e	29% (5)	0% (0)	0% (0)
Environmental/energy ^f	65% (11)	54% (15)	40% (6)
Labor ^g	0% (0)	14% (4)	33% (5)

^a“Total regulations” refers to the total number of regulations or similar interventions subject to economic analysis in each region during the sample period. The composition varies by region, as discussed in the text.

^b“Examined” refers to the number of regulations identified by our algorithm as potentially containing a substantive distributional analysis. The decision rule varies by region, as discussed in the text. Because there is no database of BCAs in the United States, we were only able to locate 45 out of these 54 analyses.

^c“Distributional analyses” refers to the number of distributional analyses we identify for each region, using the same criteria across regions. In parenthesis, we indicate distributional analysis as a percentage of total regulations.

^dWe count quantitative measures of benefits or costs for subgroups such as small businesses in addition to subgroups of the population.

^eThis question measures whether the concept of “environmental justice” or “equity” was mentioned as a driver for any distributional analysis of effects on subgroups.

^fFor the United States, “Envl/energy” includes BCAs from the Environmental Protection Agency and the Department of Energy. For the United Kingdom, this includes BCAs from the Department for Business, Energy, and Industrial Strategy (BEIS); the Department for Environment, Food and Rural Affairs; and the Department of Energy and Climate Change (an agency that merged with another agency to form BEIS). For the European Union, the topic is based on the content of the BCA.

^gFor the United States, this includes BCAs from the Department of Labor. For the United Kingdom, this includes BCAs from the Department for Work and Pensions. For the European Union, the topic is based on the content of the BCA.

UK BCAs, and 218 EU BCAs (row 1). The initial screen reduces the sample by more than one-half for each of the three regions to those BCAs we examined in detail for distributional analyses (row 2). The actual number and percent of distributional analyses is contained in row 3 and row 4 of the table. This leads to our first main result. Relatively few BCAs in each of the three regions contain a qualitative or quantitative discussion of the distributional impacts associated with a proposed regulation on a subgroup of the population. In our sample, we find that 9% of US analyses, 6% of UK analyses, and 7% of EU analyses contained some discussion of distributional issues.

Table 1 next provides summary statistics related to the characteristics of distributional analyses in each region. First, we find that there is almost *no* quantification of the net benefits of a regulation for a subgroup of the population, which is our second main result (row 5). The United States had two such distributional analyses: an analysis of a rule that would reduce methane emissions from oil and gas wells on tribal lands and an analysis of the rule’s subsequent withdrawal (Cecot and Hahn 2022). The United Kingdom had 0 distributional analyses that provided an estimate of net benefits. And the European Union had only one such distributional analysis: an evaluation of the impact of new occupational exposure limits for carcinogens in the workplace, which quantified both costs and benefits for different stakeholder groups, including companies, the public sector, and workers and families. We also find that a large fraction of distributional analyses computed benefits or costs for a subgroup in the United States and the European Union, but not in the United Kingdom (row 6). Second, the United Kingdom is the

only region that has used distributional weights in an analysis of a regulatory policy (row 7). This might not seem surprising given that the United Kingdom has longstanding practical guidance from the HM Treasury’s Green Book on such weighting in BCAs. However, as we suggest in the next subsection, there may be misperceptions about the extent and context of such weighting beyond, perhaps, evaluations of public expenditure and taxation programs (the domain of HM Treasury, which we do not analyze) or transfer regulations. Third, the United States is the only region that focuses on environmental justice issues, labeled as such (row 8). Finally, the second to last row reveals that a large fraction of distributional analyses in all three areas are conducted for environmental and energy policies (row 9). Furthermore, about two-thirds of all distributional analyses of proposed regulations in all three regions are conducted for environmental, energy, or labor interventions (rows 9 and 10).

3.3 | Additional Analyses

This subsection addresses two additional issues: first, how the first 2 years of analyses in the Biden administration compare with our main sample; and second, how the United Kingdom used distributional weighting in our main sample.

3.3.1 | Biden Administration Sample

The main sample period from 2016 through 2020 excludes consideration of any analyses prepared under the Biden

administration. Because of the Biden administration's interest in equity, we examine a separate sample of BCAs prepared under the first 2 years of the Biden administration. We do not extend the analysis for the United Kingdom or the European Union because there was no comparable shift in emphasis on distributional analysis that would warrant new expectations. In contrast, the increased attention under the Biden administration created a meaningful possibility of identifying additional examples and potential best practices, aligning with our goal of improving the evidence base for policymaking. We apply the same methodology as for the main US sample. Out of 91 economic analyses reviewed in fiscal years 2021 and 2022, 22 of them monetize at least some benefits and costs. We were able to locate 21 of these BCAs. After examination, eight of these BCAs contained a distributional analysis of a demographic subgroup of the population. We score these analyses in the same way as we scored the distributional analyses in our main sample.

We find that almost all of these distributional analyses were done in the context of analyzing environmental justice (seven out of eight analyses), often in a separate chapter of the economic analysis. In this way, the Biden administration's focus on equity appears to have had a tangible effect on the content of economic analysis in the United States. But we did not find any significant differences on any of the other dimensions we evaluated. In particular, we did not see any quantitative net benefits estimates of subgroups, though 75% (six out of eight) distributional analyses contained a quantitative measure of benefits or costs for a subgroup. In 2023, OIRA released an update to Circular A-4, which provided more guidance on distributional analysis (U.S. Office of Management and Budget 2023a). It is possible that this guidance document may have had an effect in the latter part of the Biden administration. OIRA has not released a Report to Congress covering this period yet, so we could not test this possibility. The Trump administration has since directed the Office of Management and Budget to revoke this guidance. If it had an additional effect, it would have been confined to a relatively short window.

3.3.2 | UK Weighted Benefit–Cost Analyses

While the UK government has consistently encouraged using distributional weights in BCAs, we find only five such weighted analyses in our UK sample of BCAs during the period 2016 through 2020. In addition, we find that distributional weights were mainly used to evaluate policies involving income transfers between low- and high-income groups rather than in broader regulatory analyses.

The subsample of five assessments that used distributional weights evaluated energy and labor interventions. Two were assessments of proposals to subsidize energy bills for low-income households, two were assessments of proposals to raise the minimum wage, and one was an assessment of a proposal to promote energy efficiency in the residential sector. All of these proposals were considered “high impact,” defined as proposals expected to have at least £500 million in aggregate benefits and costs. And all of the assessments were conducted by the same agency, the Department for Business, Energy and Industrial Strategy (BEIS).¹⁴ In the United States, the first four of these

proposals might be considered transfer rules that would have been outside of our US sample (Lienke 2024). The one UK distributional analysis of a non-transfer intervention did not specify how distributional weighting was used in the analysis. We consider these assessments in more detail below.

Two analyses were of proposals for subsidizing energy, generally referred to as the “Warm Home Discount Extension” of 2016 and 2018 (UK Government 2016, 2018). The aim was to reduce fuel poverty and address distributional impacts associated with higher energy bills. To do so, the interventions would provide a subsidy for “fuel poor” and low-income households. In other words, these proposals were transfer rules, where the primary purpose of the policy intervention is to redistribute money in some way. In the distributional analysis of the most recent intervention, different weights were applied to different income decile groups to value the subsidies. A weight of 5.3 was applied to the lowest income decile, and a weight of 0.3 was applied to the highest income decile. The weight of middle deciles was close to one (1.1 for the fifth decile and 0.9 for the sixth decile). Interestingly, we did not find an analysis of the distribution of costs of this intervention, which would presumably be borne by taxpayers. Thus, the weighted analysis did not appear to demonstrate the weighted net effects to income-decile groups.

In addition, two UK analyses, conducted in 2019 and 2020, assessed proposals to increase the minimum wage (UK Government 2019, 2020). These analyses estimated benefits to workers using welfare weights derived from the Green Book's recommended elasticity of the marginal utility of income (1.3) combined with income data (HM Treasury 2003). Only the benefits accruing to workers were adjusted upward, while costs to businesses were treated as economically neutral transfers without weighting. For example, the 2020 analysis estimated that businesses would incur additional labor costs of £1.7 billion, comprising £1.4 billion in wages and £0.3 billion in non-wage contributions. After weighting relevant impacts, the resulting estimated weighted benefit to workers was £2 billion. Similarly, the 2019 analysis projected a weighted transfer value to workers of £922 million compared to unweighted costs to businesses of £709 million. Both assessments explicitly assumed negligible employment effects, emphasizing the redistributive nature of the proposed wage increases rather than broader behavioral changes or job losses. In fact, the 2020 analysis stated that “we do not expect there to be any significant adverse employment effects” (31).

This approach contrasts sharply with analyses conducted in the United States by the Congressional Budget Office (CBO) on potential increases to the federal minimum wage via legislation. The CBO's assessments consistently highlight significant employment impacts of increasing the minimum wage. For example, a 2019 CBO analysis estimated that raising the minimum wage to \$15 per hour would result in approximately 1.3 million job losses, disproportionately affecting teenagers who represent about 46% of these projected losses. Unlike the UK analyses, the US assessments focus substantially on employment displacement and behavioral effects, reflecting a markedly different analytical emphasis despite assessing a similar policy proposal. The UK assumption regarding no employment effects simplifies the analysis related to distributional weights.

Finally, the proposal for promoting energy efficiency in 2017 was referred to as “Help to Heat” and included measures that went beyond just an income transfer (UK Government 2017). Factoring in equity weighing, the distributional analysis estimated the benefits of the measures at £2.6 billion and the costs at £1.17 billion. Although the distributional analysis stated that it relied on equity weights, it did not specify any parameters related to those weights. We kept it in the sample for weighted analysis, but we note the lack of transparency about the calculation and use of weights.

4 | Conclusion

The United States, the United Kingdom, and the European Union have all formally expressed interest in doing distributional analysis as part of the economic analysis of proposed regulations. Yet, this paper has demonstrated that distributional analysis of such government policies on demographic subgroups is the exception rather than the rule in these three regions, occurring in fewer than 10% of the applicable government initiatives. Low incidence is not necessarily concerning; some policies may have distributional effects that are insignificant or difficult to measure.

Even when distributional analysis is conducted, we find that it generally lacks sufficient information to be useful to decisionmakers. In particular, we find there are almost no quantitative measures of the net benefits of regulations provided for subgroups of the population. In our sample of 907 regulations, we found two such analyses in the United States, 0 in the United Kingdom, and 1 in the European Union. Furthermore, distributional weights are also rarely used, even in the United Kingdom, where they are often assumed to be common. It is possible that the United Kingdom predominantly applies distributional weights to analyses of public expenditure programs and tax policies, which we did not examine in this study, and not in policy analyses. If so, this limited scope has not been clearly documented or widely communicated, leading to persistent misperceptions.

Our analysis suggests that while officials and regulators may be interested in directives calling for greater consideration of distributional concerns, quantitative analysis remains rare. This raises the question as to why this pattern emerges in these regions. After examining 24 US regulations conducted under the Obama Administration and finding little distributional analysis, Robinson et al. (2016) suggested that the reasons likely reflected a mix of normative concerns and pragmatic constraints, including political and legal considerations, assumptions that effects were insignificant, and technical or data challenges. Because we find a similar trend in a more recent US sample and across two additional regions, it is now clear that the explanation goes beyond any one country's dynamics. We agree with Robinson et al. (2016) that normative considerations, technical limitations, and political disincentives are likely important drivers. But our findings also point to a distinct factor: the experiences of different countries are often poorly understood and ineffectively shared. For example, our investigation into distributional weights in the United Kingdom shows that policymakers in other jurisdictions have drawn incorrect inferences about UK

practice. Such misunderstandings may weaken incentives to develop new approaches.

Policymakers can play a central role in lowering technical barriers by funding new research, helping to synthesize existing work, and creating or supporting institutions that make findings more accessible. Funding could increase the stock of knowledge on distributional issues and thus lower the cost of producing analysis for specific applications. In the regulatory area, for example, there does not appear to be much data on how different subgroups in the population are affected by various regulatory policies. Although there is active research in this area (e.g., Fullerton and Heutel 2010; Bento et al. 2015; Hsiang et al. 2019), more work is needed to inform specific regulatory proposals. A natural starting point would be to fund studies that provide experimental and quasi-experimental evidence on the distributional impacts of specific policies.

At the same time, there is a need to synthesize such findings. Hendren and Sprung-Keyser (2020), for example, review a large number of policy interventions using a marginal value of public funds framework, which measures society's willingness to pay for an intervention (broken down by various subgroups) relative to the net cost to the government of a policy. Governments could further support dissemination by developing a website that provides easy access to estimates useful for distributional analyses. The Policy Impacts website at MIT (policyimpacts.org) provides one model focused on tax and subsidy policies. A government-funded version could broaden the scope to include regulatory policies, consider the non-marginal impacts of large-scale policy interventions, such as the Inflation Reduction Act (e.g., Bistline et al. 2023), and expand beyond studies reflecting state-of-the-art empirical identification so that decisionmakers have timely evidence.¹⁵ Governments or international organizations such as the OECD or World Bank could also institutionalize tracking such analyses and producing annual reports akin to OIRA's Reports to Congress in the United States.

Diffusion of such refinements will take time. As particular governments or sectors improve, others may follow. We saw this when HM Treasury's Green Book (2003, 2022) influenced revisions to Circular A-4 in the United States, although the UK experience was misunderstood. This demonstrates, however, that cross-regional influence is possible, and it could be beneficial when based on accurate information.

Growing interest in distributional analysis is particularly notable in the health sector, where international working groups explicitly recommend distributional analyses of net health benefits, longevity, and income impacts across different income groups (Robinson et al. 2019). International reporting standards for health economic evaluations (Husereau et al. 2022) and authoritative international guidelines (Ferranna et al. 2024) emphasize subgroup analysis. In the United Kingdom specifically, the National Institute for Health and Care Excellence recently issued a position statement encouraging quantitative assessments of health inequalities through distributional cost-effectiveness analyses in their evaluations of health technologies (UK National Institute for Health and Care Excellence 2024). If this attention translates into broader practice, it could encourage

adoption of robust distributional analyses across additional policy sectors.

While such technical and information barriers can be addressed through targeted funding and more systematic exchanges of insights, a separate question remains as to whether there is sufficient political demand for such distributional analysis. Robinson et al. (2016) discuss why policymakers might be reluctant to conduct such analysis as it might reveal inconvenient information. We see the demand as potentially coming from two broad external groups that could overcome these barriers. The first consists of researchers and analysts who believe that such economic analysis is important for public policy. Indeed, it could be argued that the increase in the use of formal benefit–cost analysis arose in part based on the demand from this group. The second source of potential demand is from interest groups that may benefit from implementing distributional analysis. For example, if low-income individuals were likely to be adversely affected through a proposed regulatory intervention, a distributional analysis that makes this point could be used to help mobilize this group to influence policy. Making such information widely available could also rally support from other segments of the population, who may be particularly concerned if lower-income groups are harmed by regulations. Indeed, evidence suggests that the public is often more willing to redistribute through non-tax means than through the tax system (Liscow 2022).

We have purposely sidestepped the important normative question of how such information should be used in the decision making process and whether to apply distributional weights. Our view is that incidence information should be made available to the decision maker whenever it can be developed at a reasonable cost. Exactly how such information should be used in determining policy is beyond the scope of this paper. With regard to distributional weights, we see value in first providing incidence measures by subgroup when available (e.g., Banzhaf 2011). Where decision makers may want to weigh impacts differently for different subgroups, we see no reason analysts should not report such findings, so long as the methods are transparent. Practical issues remain, such as how to specify weights and evaluate their impact on policy outcomes.

Ultimately, continuing to evaluate how policy analysis is conducted is essential. Given the political salience of equity and distributional issues, demand for such analysis is likely to continue to grow. Whether it will meaningfully affect policy design remains an open and important question for future study.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Endnotes

- ¹ Different countries have different names for the document containing the BCA. In the United States, this document is commonly referred to as a regulatory impact analysis, whereas in the United Kingdom and in the European Union, this document is referred to as an impact assessment. We refer to these documents as BCAs or economic analyses.
- ² There are, of course, many other important aspects of economic policy where distributional issues could be important, such as tax and subsidy policy. We do not address these policies here, though the tools we analyze could be relevant for those areas as well.
- ³ There is also increasing interest in benefit-incidence analysis, which examines the distribution of the average benefits of public services. Such analyses are not included in our paper.
- ⁴ In the United States, so-called “transfer” rules typically are designed to transfer income to specific groups (*see* Lienke 2024). While such rules may change behavior, they do so through income effects, and OIRA summarizes these rules separately in its Reports to Congress. Regulations aimed at changing behavior primarily through channels other than income effects, such as direct regulation, are sometimes referred to as “non-transfer” rules. Typical examples include environmental regulation of vehicles and power plants. Our evaluation of US BCAs focuses on non-transfer rules.
- ⁵ We did not extend the analysis for the United Kingdom or the European Union because there was no comparable shift in emphasis on distributional analysis that would warrant new expectations.
- ⁶ This conclusion could change if BCAs are considered from the entire Biden administration.
- ⁷ Even within that framework, sometimes the analysis only considers compliance cost and direct benefits, rather than considering market impacts associated with changes in supply and demand.
- ⁸ See Executive Order 12,866 for a more precise definition of the term “significant.”
- ⁹ In the United States, there is separate guidance that pertains to analyses of government expenditure programs, Circular A-94 (U.S. Office of Management and Budget 2023c), but such analyses are outside of the scope of this paper.
- ¹⁰ Equality Act 2010, c. 15, § 1.
- ¹¹ The database can be found at this website: <https://www.legislation.gov.uk/search/impacts>.
- ¹² The United States does not have a centralized website that contains all BCAs reviewed by OIRA. For that reason, we also could not use the same keyword search algorithm we use in the United Kingdom and the European Union to limit our US sample for manual examination.
- ¹³ The database can be found at this website: <https://ec.europa.eu/transparency/documents-register/>.
- ¹⁴ One of the proposals originated in a different agency but was then transferred to BEIS. As of 2023, BEIS no longer exists; it was split to form the Department for Business and Trade, the Department for Energy Security and Net Zero, and the Department for Science, Innovation and Technology.
- ¹⁵ Exactly where to draw the line on which studies to include will depend on the needs of the decisionmaker. For example, while

state-of-the-art econometric designs provide the highest credibility, policymakers may also benefit from timely evidence that uses less rigorous methods but still offers useful insights. One option would be for governments to list such studies in a clearly designated area on the website described above, so that users can distinguish between different types of information.

References

- Adler, M. D. 2016. "Benefit–Cost Analysis and Distributional Weights: An Overview." *Review of Environmental Economics and Policy* 10: 264–285.
- Arrow, K. J., M. L. Cropper, G. C. Eads, et al. 1996. "Is There a Role for Benefit-Cost Analysis in Environmental, Health, and Safety Regulation?" *Science* 272, no. 5259: 221–222.
- Banzhaf, H. S. 2011. "Regulatory Impact Analyses of Environmental Justice Effects." *Journal of Land Use & Environmental Law* 27, no. 1: 1–30.
- Bento, A., M. Freedman, and C. Lang. 2015. "Who Benefits From Environmental Regulation? Evidence From the Clean Air Act Amendments." *Review of Economics and Statistics* 97, no. 3: 610–622.
- Bistline, J., G. Blanford, M. Brown, et al. 2023. "Emissions and Energy Impacts of the Inflation Reduction Act." *Science* 380, no. 6652: 1324–1327.
- Blinder, A. S. 1987. *Hard Heads, Soft Hearts: Tough-Minded Economics for a Just Society*. Addison-Wesley.
- Cecot, C., R. Hahn, A. Renda, and L. Schrefler. 2008. "An Evaluation of the Quality of Impact Assessment in the European Union With Lessons for the US and the EU." *Regulation & Governance* 2, no. 4: 405–424.
- Cecot, C., and R. W. Hahn. 2022. "Incorporating Equity and Justice Concerns in Regulation." *Regulation & Governance* 18, no. 1: 99–120.
- Deighton-Smith, R., A. Erbacci, and C. Kauffmann. 2016. "Promoting Inclusive Growth Through Better Regulation: The Role of Regulatory Impact Assessment."
- Department for Business and Trade. 2018. "Better Regulation Framework."
- Department for Business and Trade. 2023. *Better Regulation Framework*. GOV.UK. <https://www.gov.uk/government/publications/better-regulation-framework>.
- Dunlop, C. A., M. Maggetti, C. M. Radaelli, and D. Russel. 2012. "The Many Uses of Regulatory Impact Assessment: A Meta-Analysis of EU and UK Cases." *Regulation & Governance* 6, no. 1: 23–45.
- Ellig, J. 2016. "Evaluating the Quality and Use of Regulatory Impact Analysis: The Mercatus Center's Regulatory Report Card, 2008–2013".
- Equality Act. 2010. c. 15, § 1. <https://www.legislation.gov.uk/ukpga/2010/15/section/15>.
- European Commission. 2015. Better Regulation Guidelines. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015SC0111>.
- Executive Order 12,291. 1981. Federal Regulation. Federal Register. 46: 13193. <https://www.archives.gov/federal-register/codification/executive-order/12291.html#12291>.
- Executive Order 12,866. 1993. Regulatory Planning and Review. Federal Register 58: 51735. <https://www.archives.gov/files/federal-register/executive-orders/pdf/12866.pdf>.
- Executive Order 13,563. 2011. Improving Regulation and Regulatory Review. Federal Register 76: 13045. <https://www.govinfo.gov/content/pkg/FR-2011-01-21/pdf/2011-1385.pdf>.
- Executive Order 13,985. 2021. Advancing Racial Equity and Support for Underserved Communities Through the Federal Government. Federal Register 86: 7009. <https://www.federalregister.gov/documents/2021/01/25/2021-01753/advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government>.
- Executive Order 14,035. 2021. Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce. Federal Register 86: 34593. <https://www.federalregister.gov/documents/2021/06/30/2021-14127/diversity-equity-inclusion-and-accessibility-in-the-federal-workforce>.
- Executive Order 14,091. 2023. Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government. Federal Register 88: 10825. <https://www.federalregister.gov/documents/2023/02/22/2023-03779/further-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal>.
- Febrizio, M. 2022. "Do Agencies Consider Distribution and Equity in their Rules?" Working Paper, available at SSRN. <https://ssrn.com/abstract=4768079>.
- Ferranna, M., J. K. Hammitt, and L. A. Robinson. 2024. "From Benefit–Cost Analysis to Social Welfare: A Pragmatic Approach." *Journal of Benefit-Cost Analysis* 15, no. 1: 84–109.
- Fullerton, D., and G. Heutel. 2010. "The General Equilibrium Incidence of Environmental Mandates." *American Economic Journal: Economic Policy* 2, no. 3: 64–89.
- Gruber, J. 2005. *Public Finance and Public Policy*. Worth Publishers.
- Hahn, R. W., J. K. Burnett, Y.-H. I. Chan, E. A. Mader, and P. R. Moyle. 2000. "Assessing the Quality of Regulatory Impact Analyses." *Harvard Journal of Law & Public Policy* 23, no. 23: 1.
- Harberger, A. C. 1978. "On the Use of Distributional Weights in Social Cost-Benefit Analysis." *Journal of Political Economy* 86, no. 2, pt. 2: S87–S120.
- Hemel, D. 2022. "Regulation and Redistribution With Lives in the Balance." *University of Chicago Law Review* 89: 649.
- Hendren, N., and B. Sprung-Keyser. 2020. "A Unified Welfare Analysis of Government Policies." *Quarterly Journal of Economics* 135, no. 3: 1209–1318.
- Hicks, J. R. 1939. "The Value of Capital." *Economic Law Journal* 49: 696–712.
- HM Treasury. 2003. *The Green Book: Central Government Guidance on Appraisal and Evaluation*.
- HM Treasury. 2022. *The Green Book: Appraisal and Evaluation in Central Government*. <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020>.
- Hsiang, S., P. Oliva, and R. Walker. 2019. "The Distribution of Environmental Damages." *Review of Environmental Economics and Policy* 13: 83–103.
- Husereau, D., M. Drummond, F. Augustovski, et al. 2022. "Consolidated Health Economic Evaluation Reporting Standards 2022 (CHEERS 2022) Statement: Updated Reporting Guidance for Health Economic Evaluations." *Value Health* 25, no. 1: 3–9.
- Kaldor, N. 1939. "Speculation and Economic Stability." *Review of Economic Studies* 7: 1–27.
- Layard, R., G. Mayraz, and S. Nickell. 2008. "The Marginal Utility of Income." *Journal of Public Economics* 92, no. 8–9: 1846–1857.
- Lienke, J. 2024. "Justifying Redistributive Regulations." *University of Michigan Journal of Law Reform* 58: 139–191.
- Liscow, Z. 2022. "Redistribution for Realists." *Iowa Law Review* 107, no. 2: 495–557.
- Piketty, T. 2022. *A Brief History of Equality*. Harvard University Press.

- Revesz, R. L., and M. A. Livermore. 2008. *Retaking Rationality: How Cost-Benefit Analysis Can Better Protect the Environment and Our Health*. Oxford University Press.
- Revesz, R. L., and S. P. Yi. 2022. "Distributional Consequences and Regulatory Analysis." *Environmental Law* 52, no. 1: 53–98.
- Robinson, L. A., J. K. Hammitt, M. Cecchini, et al. 2019. Reference Case Guidelines for Benefit-Cost Analysis in Global Health and Development. Working Paper, available at SSRN. <https://doi.org/10.2139/ssrn.4015886>.
- Robinson, L. A., J. K. Hammitt, and R. J. Zeckhauser. 2016. "Attention to Distribution in US Regulatory Analyses." *Review of Environmental Economics and Policy* 10: 308–328.
- Sunstein, C. R. 2018. *The Cost-Benefit Revolution*. MIT press.
- Sunstein, C. R. 2023. "Inequality and the Value of a Statistical Life." *Journal of Benefit-Cost Analysis* 14, no. 1: 1–7.
- UK Government. 2016. *The Warm Home Discount (Miscellaneous Amendments) Regulations 2016: Impact Assessment*, Impact Assessment 2016 No. 185.
- UK Government. 2017. *The Electricity and Gas (Energy Company Obligation) (Amendment) Order 2017: Impact Assessment*, Impact Assessment 2017 No. 40.
- UK Government. 2018. *The Warm Home Discount (Miscellaneous Amendments) Regulations 2018: Impact Assessment*, Impact Assessment 2018 No. 97.
- UK Government. 2019. *The National Minimum Wage (Amendment) Regulations 2019: Impact Assessment*, Impact Assessment 2019 No. 95.
- UK Government. 2020. *The National Minimum Wage (Amendment) Regulations 2020: Impact Assessment*, Impact Assessment 2020 No. 7.
- UK National Institute for Health and Care Excellence. 2024. "Position Statement on Using Distributional Cost-Effectiveness Analyses in NICE's Technology Appraisal and Highly Specialised Technologies Programmes." Committee Papers for NICE Technology appraisal guidance TA1003: pp. 980–990. <https://www.nice.org.uk/guidance/ta1003/evidence>.
- U.S. Department of Health and Human Services. 2016. *Guidelines for Regulatory Impact Analysis*.
- U.S. Environmental Protection Agency. 2014. *Guidelines for Preparing Economic Analysis*. EPA 240-R-10-001.
- U.S. Environmental Protection Agency. 2024. Guidelines for Preparing Economic Analyses (3rd edition). EPA-240-R-24-001.
- U.S. Office of Management and Budget. 2003. Circular A-4. <https://www.whitehouse.gov/wp-content/uploads/2025/08/CircularA-4.pdf>.
- U.S. Office of Management and Budget. 2023a. Circular A-4. <https://www.bidenwhitehouse.archives.gov/wp-content/uploads/2023/11/CircularA-4.pdf>.
- U.S. Office of Management and Budget. 2023b. OMB Circular No. A-4: Explanation and Response to Public Input. <https://bidenwhitehouse.archives.gov/wp-content/uploads/2023/11/CircularA-4Explanation.pdf>.
- U.S. Office of Management and Budget. 2023c. Circular A-94. <https://www.whitehouse.gov/wp-content/uploads/2023/11/CircularA-94.pdf>.
- Walker, G. P. 2007. "Environmental Justice and the Distributional Deficit in Policy Appraisal in the UK." *Environmental Research Letters* 2, no. 4: 045004.
- Wiener, J. B., and A. Alemanno. 2011. "Comparing Regulatory Oversight Bodies Across the Atlantic: The Office of Information and Regulatory Affairs in the US and the Impact Assessment Board in the EU." In *Comparative Administrative Law: 309-355*, edited by S. Rose-Ackerman and P. Lindseth. Edward Elgar Publishing.
- Zimmermann, M., and S. Pye. 2018. "Inequality in Energy and Climate Policies: Assessing Distributional Impact Consideration in UK Policy Appraisal." *Energy Policy* 123: 594–601.

Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Data S1:** Supplementary Appendix.