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# Condemned to complexity? Growing state activity and complex policy systems

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**Abstract**

Does growing state activity inevitably lead to more complex policy systems? In this article, we offer a new, comprehensive approach that systematically differentiates between the size and the complexity of policy portfolios to answer this question. Looking at data from 21 OECD countries over more than three decades (1980–2015) in the areas of social and environmental policy, we find substantial variation in the size and complexity of policy portfolios. While larger state activity is generally associated with growing complexity, this relation still varies both between countries and over time. Our finding suggests that increasing policy complexity is not a "natural given" but that two of the major trends of the last decades—growing state activity and global political integration—provided a very fertile ground that fosters policy complexity. These findings have important implications for analyzing macro patterns of state activity in the 21st century.

## 1 | INTRODUCTION

The 20th century has been the century of the state. The size of the state expanded to unforeseen dimensions in the advanced market economies. As a consequence, there is a lot of empirical work on the drivers of growing state activity (Obinger & Petersen, 2017; Seelkopf et al., 2021). Curiously, though, we know much less about the exact shape that the expansion of state activity

takes. In particular, the conditions and consequences of complex state actions have neither been systematically measured nor analyzed in a comparative fashion across time, countries, or policy sectors (Hurka et al., 2021). The lack of comparative analyses becomes even more surprising given the fact that observers in the United States have recently argued that "the issues that will dominate American politics going forward will concern the complexity of government, rather than its sheer size" (Teles, 2013 p. 97). Do countries keep their policies simple and clear when expanding their activities? Or, in contrast, does the growth of the state inevitably go hand in hand with more complex policy patterns?

Complex state actions may come with both negative and positive consequences. On the negative side, complexity might hinder citizens' ability to hold their government accountable. Complexity typically emerges from the fact that different policies are characterized by multiple interactions, which makes it highly difficult, if not impossible, for citizens to assess whether the policies adopted by the government are actually good or bad for the outcome addressed (Sager & Andereggen, 2012). Likewise, complex policy portfolios may be also harder to implement and enforce. This is due to two reasons. First, citizens might find it more difficult to understand and, in consequence, to comply with more complex policies (Taing & Chang 2021). Second, more complex policies may imply a higher work burden for the authorities in charge of their implementation. For instance, this is the case when a complex set of rules regulates eligibility for several interrelated social programmes (Adam et al., 2019). In short, complex policy-making can have negative side effects on both the effectiveness and the legitimacy of state activity (Teles, 2013). This is not to say that complexity always and inevitably needs to be a negative feature of state actions. In many ways, complex policy portfolios might simply reflect the complexity of a modern economy and society (Cairney et al., 2019). Moreover, on the positive side, a complex policy system with multiple instruments, exemption clauses, and so on, might be perceived as "fairer" than a policy system that is relatively simple and treats everybody in the target groups equally, for example by not considering an employee's income or a firm's size and environmental impact (Ehrlich, 2011). The fact that there is disagreement on the consequences of growing policy complexity on democratic legitimacy and effectiveness underlines the need to improve our understanding of its underlying drivers and to scrutinize this development more systematically.

Yet, there is a certain academic "fatalism" when it comes to analyzing the drivers of complexity. Complexity is viewed as a ubiquitous feature of modern democracies. The dominant argument in this context is that complexity is, first and foremost, a consequence of continuously growing state activity. For instance, Mettler (2016) argues that "the accumulation of policies will inevitably lead to greater complexity and conflicts between them" (p. 371). Likewise, Kawai et al. (2018) posit that "as layers of rules accumulate, so does policy complexity" (p. 131). In short, the number of policies is viewed as a central driver of complex policy systems. Hence, complexity is considered as the inevitable consequence of growing state activity.

In this contribution, we analyze the relationship between growing policy portfolios and complexity in closer detail and examine so far uncontested assumptions on the prevalence and drivers of policy complexity. More specifically, we ask whether growing complexity is indeed automatically linked to growing state activity or whether the strength of this relationship varies across countries and sectors. Are some countries more capable than others of keeping their policy portfolios simple, despite similar patterns of policy growth? And, if so, which factors account for this variation?

In addressing these questions, we need to go beyond predominant perspectives that take the change of individual policies as the central unit of analysis. Instead, we opt for a macro perspective that captures aggregate developments of policy-making to capture general trends in policy

portfolios over the long run of history (Limberg et al., 2021). We propose a new, comprehensive approach that systematically differentiates between (1) the size and (2) the complexity of sectoral policy portfolios. These two measures allow us to map countries' policy portfolios from an aggregate perspective. We are able to compare macro-level trends between countries, but also between policy fields over longer historical time frames.

We demonstrate the usefulness of our approach by looking at the areas of environmental policy and social policy in 21 OECD countries from 1980 to 2015. Investigating the relation between size and complexity in these two fields follows the logic of a diverse case selection strategy. Looking at two policy fields that vary along major dimensions—regulatory (environmental policy) versus redistributive (social policy) and rather young (environmental policy) versus mature (social policy)—helps us to increase the generalisability of our results. Two findings stand out. First, our analysis supports existing claims emphasizing the role of state activity as the central driver of policy complexity. Most countries that expand their policy portfolios also diversify their chosen instruments. Second, however, we find that the relation between size and complexity varies substantially across countries and sectors, that is, there are systematic differences in the extent to which policy growth ultimately results in higher policy complexity. We differentiate between international and domestic factors that might account for the varying association between size and complexity. Crucially, international political integration has a moderating effect on the size-complexity relationship. For countries that are politically highly globalized, growing portfolio size is more likely to lead to higher policy complexity. This finding holds for both environmental and social policy. In contrast, the effect of domestic institutional and political variables is dependent on the policy field. While institutional constraints play an important role in the size-complexity nexus in environmental policy, partisanship explains variation in social policy. Hence, while international explanations provide a general explanation for the size-complexity nexus, the effects of domestic factors are much more context-specific. This underlines the need to compare grand theories of comparative politics not only across countries but also across policy fields.

The contribution of this article is threefold. First, by systematically differentiating between the size and complexity of policy portfolios, the article provides a novel analytical perspective on state activity over the long run of history. Second, the article provides new tools how to measure the proposed concepts of portfolio size and complexity empirically. Based on fine-grained coding of environmental and social policy-making in 21 OECD democracies since 1980, we show variation with regard to the size and complexity of policy portfolios. Third, we test grand theories in comparative public policy that might account for variation in the relationship between size and complexity.

The article is structured as follows. In the subsequent sections, we present our concept of a two-dimensional view on policy portfolios and map empirical patterns in environmental and social policy-making since the 1980s. Afterward, we discuss different theories that might account for the varying relationship between size and complexity. Subsequently, we run panel data regressions to test these three theories empirically for the fields of social and environmental policy. The final section concludes.

## 2 | THE SIZE AND COMPLEXITY OF SECTORAL POLICY PORTFOLIOS

To analyze whether state activity enhances complexity, we need two measures—one for the size of state activity and one for its complexity. According to Rose (1981), the size of the government

can be assessed by "different elements the government brings to bear in the policy process" (p. 7). By and large, these are expenditure (revenue), personnel, and policies (Rose, 1981 p. 8). Conventionally, the state's expenditure is measured in terms of a ratio of public expenditure to gross national product. A benefit of this measure is that it is easily available and intuitively understandable. Yet, there are also some clear downsides, namely that this measure "ignores the great potential variability in the composition of public expenditure or the fact that the same ratio can be produced by very different absolute or per capita levels of public expenditure and the national product" (Rose, 1981 p. 11). Another measure of state size is the personnel in the public sector. The actual size of government, however, is often "masked" by official figures on public sector employment (Rose, 1981 p. 17). Despite the common perception that the state has increased its activities over the course of the last decades, public employment has not grown consistently across functions and countries (ILOSTAT, 2019). This is, at least in part, due to the rise of new information technologies that have increased the efficiency of public administration. Moreover, the trends of outsourcing and privatization have led to an "assault on the public sector" (Lobao et al., 2018) via a transfer of functions formerly performed by the state to non-state actors. These trends, however, do not imply that the state has become less important or involved in regulating people's life. In consequence, Rose shows some preference for assessing state size by the number of laws or policies, arguing that while the "government claims less than half the national product and about one-quarter of its labor force, it enacts 100 percent of the laws of a society" (Rose, 1981 p. 19). Policies are thus a "unique resource of government" (ibid.), least affected by potential confounders (e.g., changes in the economic performance or privatization trends) and well suited to measure the actual size of the government. An important downside of policies is, however, that they cannot easily be totaled up and compared. Assessing state activity through policy outputs thus requires the development of novel measures and approaches.

With regard to the complexity of the state activity, there is little debate about the pros and cons of different measures. Rather, the literature still struggles with finding a common understanding of what complexity actually means in the context of public policies. By and large, we can distinguish between three approaches. The first one is that a "complex (policy) system is greater than the sum of its parts" (Cairney & Geyer, 2015 p. 2). Given the interactions between different parts, effects of policies are nonlinear and difficult, if not impossible, to anticipate (Howlett & Rayner, 2013). The second understanding is that policy complexity implies a shift from a top-down to a more diverse approach to problem solving. Comparing governing to different parenting styles, Colander and Kupers (2014) argue that the "complexity policy frame" can be seen as "a laisser-faire activistic approach" (p. 56). In other words, the government applies as few direct rigorously specified rules as possible and addresses citizens' behavior with the help of broader guidelines and incentives structures. A third understanding is that policies should be considered complex if they lead to complex structures at the implementation level, that is, network-like arrangements where "many public and private organizations (must) cooperate in the implementation of programme" (Hjern & Porter, 1981 p. 214) and "cope with the complexity inherent in so many interdependent actions" (ibid. p. 218, see also Elmore, 1979).

Based on the above consideration, we propose a two-dimensional approach, which systematically differentiates between the size and the complexity of policy portfolios. Policy portfolios cover the entity of state actions in a respective policy field. They cover all potential policy targets ("what is the government doing?") as well as all policy instruments used to address the respective policy targets ("how does the government intend to achieve its targets?"). Depending on the policy area,

policy targets and instruments can represent very different things. In environmental policy, for instance, a policy target can be the $NO_x$ emission from industrial sources or road transport, while policy instruments may involve, among others, command-and-control measures, economic incentives, and information provisions. In social policy, in turn, policy targets are typically unemployed people, old people, and single parent families. Here, policy instruments comprise measures such as universal allowances, means-tested benefits, or tax exemptions.

But how does this concept of policy portfolios help us to disentangle the size and complexity of policy-making? Let us start with the size of policy portfolios. In general, the more instrument-target combinations a country levies, the bigger its policy portfolio becomes. Hence, we can measure the size of a policy portfolio by dividing the actual number of instrument-target combinations in place with the number of combinations that is theoretically possible. A country that does not levy any single policy instrument would have a policy portfolio size of 0 (i.e., 0 percent) whereas a country that has introduced all possible instruments for all potential targets would have a policy portfolio size of 1 (i.e., 100 percent). Figure 1 presents two exemplary policy portfolios that consist of 19 policy targets (horizontal dimension) and 6 policy instruments (vertical dimension). The maximum policy portfolio size would thus equal 114 target-instrument combinations (6*17). In the upper policy portfolio, the size is 0.12 (14/114). In case of the lower policy portfolio, the portfolio size grew by four target-instrument combinations (gray shaded areas). The portfolio size is thus 0.16 (18/114). Importantly, the standardization of actual instrument-target combinations against potential combinations allows us to compare the size of policy portfolio across countries, over time, and across policy fields.

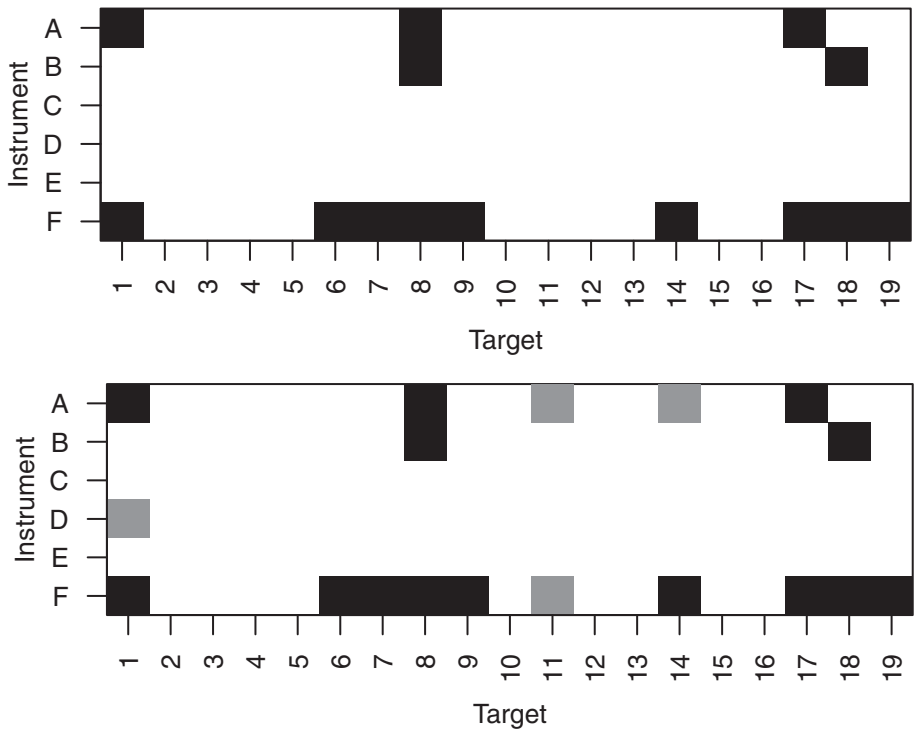


**FIGURE 1** Exemplary policy portfolio

Second, we measure policy complexity by the diversity of the policy instruments used. We assess the level of complexity by making random draws from the policy portfolio and by calculating the average probability that two instruments picked across two targets are of different kind (Fernández-I-Marín et al., 2021). This measurement approach corresponds to the above-mentioned conceptions of policy complexity in three ways.[1] First, the more diverse the used instruments are, the higher the number of potential interactions. In fact, interactions grow exponentially with more policy instruments, making it very difficult to analyze new instruments without reference to other instruments in place, and, ultimately, boosting the complexity of policy systems (Adam et al., 2018; Rogge & Reichardt, 2016). Second, high levels of instrument diversity imply that governments do not rely on the ever-same (hierarchical) policy approach but prove to be innovative in how they intend to shape the behavior of target groups. The respective governments thus come closest to the "laisser-faire activistic approach" as discussed by Colander and Kupers (2014) in their "complexity policy frame" approach. Lastly, a greater instrument diversity also implies a greater diversity in the underlying implementation structures (Bolognesi et al., 2021). While the same policy instruments are typically implemented by the same set of authorities, the use of new policy instruments often implies the involvement of new administrative entities and thus a higher demand for interorganisational coordination (Steinebach, 2019). In the area of environmental policy, for instance, the use of market-based policy instruments such as green taxes has "dragged" national tax authorities into the implementation and enforcement of environmental policy, an area typically dominated by local authorities and environmental agencies.

It needs to be highlighted that, conceptually, our measures of policy portfolio size and complexity capture different characteristics. Governments that adopt several new policy measures but do so with the ever-same instruments and instrument combinations increase the size of the policy portfolio but not (necessarily) portfolio diversity and thus the complexity. Ultimately, these two measures thus leave us with a two-dimensional space of size and complexity. This is visualized in Table 1. The bottom-left quadrant covers the combination of small size and low complexity, whereas countries that have a large and complex policy portfolio end up in the top-right quadrant. Countries with small, but rather complex policy portfolios are in the top-left and countries with simple, yet big portfolios are in the bottom left corner. In Figure A1 in the online Appendix, we provide stylised examples of (1) policy portfolios with the same size and different levels of complexity as well as (2) policy portfolios with different sizes and the same level of complexity. This illustration highlights that conceptually all four constellations are possible.

## 3 | GRAND THEORIES AND THE SIZE-COMPLEXITY NEXUS

The previous conceptual discussion has demonstrated that there is no deterministic relationship between the size and the complexity of sectoral policy portfolios. Which factors can account for

**TABLE 1** Typology of different policy portfolios

| | Size | |
|---|---|---|
| Complexity | Small and complex | Big and complex |
| | Small and simple | Big and simple |

the relation between size and complexity across countries and policy fields? In order to shed some light on this question, we focus on three grand theories of comparative public policy: institutionalism, partisan politics, and globalization.

First, institutionalist theory posits that political institutions crucially shape state activity (Immergut, 1990; Tsebelis, 2002). Institutional veto points are particularly important as they create constraints on the actions of governments. We expect that more policies lead to more complexity as the government has to consider more actors with diverse preferences. As a consequence, political reforms might comprise different instruments that partially contradict each other, such as the combination of legally binding air quality standards and voluntary agreements on how industry will engage to achieve these standards. Hence, when governments face numerous institutional constraints, we might expect that portfolio size and portfolio complexity are closely related (Ehrlich, 2011). While institutional constraints can increase the potential that more policies actually result in more complex policy portfolios, this does not mean that the opposite is necessarily the case in the absence of such limitations. A greater complexity might also result from the fact that government have more "elbow room" to design policies and, this way, come up with novel policy solutions (Fernández-I-Marín et al., 2021). We can hence derive no straightforward expectation on the extent to which a growing state activity in constellations of few institutional constraints comes with more or less policy complexity.

Second, arguments in the tradition of classical partisan politics models, as developed by Hibbs (1977, 1992) and Tufte (1978) and the "parties do matter" hypotheses (Schmidt, 1996), predict that different party ideology should matter for policy outputs. As parties from different ideological backgrounds that represent different constituencies should strive for different policy goals in order to gain re-election, varying policy choices across space and time in modern democracies should be attributable to differences in the composition of governments and legislatures (McDonald & Budge, 2005). Based on these considerations, we can generally expect that parties vary in their extent to which they prioritize certain issue areas over others. Crucially, we expect different results for environmental and social policy-making.

In environmental policy-making, a higher priority for the policy field among "greener" parties is likely to imply that these parties work more intensively on certain issue areas. As a consequence, they might develop more demand-tailored environmental policy proposal in order to tackle the multifaceted environmental challenges rather than falling back on the ever-same policy repertoire (Knill et al., 2012). This should in turn lead to more complex policies. In social policy, however, patterns are likely to look different as more leftist parties often tend to support broad, universalists welfare state policies (Esping-Andersen, 1990). The universalist Scandinavian welfare states, which have been crucially shaped by social-democratic parties in power (Esping-Andersen, 1985; Manow, 2009), serve as a prime example as they provide high levels of social-security with hardly any needs-testing. In contrast, more rightist parties have often been associated with complexity-increasing social policy measures such as policy layering (Hacker, 2004). Therefore, we would expect a weaker correlation between portfolio size and policy complexity for left parties in government.

Third, globalization theory puts a particular focus on processes of global integration and interdependencies (Dobbin et al., 2007; Jahn, 2006). While globalization is a multidimensional process, we focus on political globalization and its impact on policy-making. Crucially, increased interdependencies between policy-makers can lead to higher exposure to policy ideas and experiences from abroad (Dobbin et al., 2007; Dolowitz & Marsh, 2000). Being informed of the policy solutions other countries have found and their experience with policy tools which might not have been an integral part of a country's previous policy toolkit might trigger

learning dynamics. As a consequence, governments might be more likely to diversify their toolkit when expanding their policy portfolios (Carroll, 2012). Hence, we would expect the size to be more strongly correlated with complexity with growing levels of political globalization.

## 4 | DATA AND EMPIRICAL PATTERNS

What does the empirical distribution of the size and complexity of policy portfolios look like? In order to answer this question, we look at both portfolio size and complexity for a sample of 21 OECD countries. The countries under analysis are Australia, Austria, Belgium, Canada, Denmark, Finland France, Germany, Greece, Ireland Italy, Japan, New Zealand, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and the United States.

We focus on the areas of environmental and social policy. Within each policy area, we study three policy fields: in environmental policy—air and climate, water, and nature protection policies; in social policy—pensions, unemployment, and child benefits. The underlying logic of picking these two policy areas is a diverse case selection strategy. The central aim of a diverse case selection strategy is to achieve meaningful variance along relevant dimensions and, this way, increase the generalisability of our findings. More precisely, studying both environmental and social policy allows us to test for the size-complexity-nexus and the influence of explanatory factors across (1) different policy types (regulatory vs. redistributive polices) as well as (2) fields with different degrees of maturity (environmental policy as a rather young field compared to social policy).

The calculation is based on fine-grained coding of national legal documents laws, decrees, and regulations from 1980 to 2015. We analyze policy portfolios with reference to a predefined benchmark of a maximum number of policy targets and policy instruments for each policy field under study. The list of targets and instruments is empirically informed. If one policy target or instrument is adopted in any of the countries in our sample at any point in time, it is included in the list of targets that can potentially be addressed.

For the field of environmental policy, we distinguish between 48 policy targets that can potentially be regulated and 12 policy instrument types that can potentially be used to address these targets. The targets cover pollutants such as ozone, carbon dioxide, or sulfur dioxide in the air; substances like lead content in gasoline, sulfur content in diesel, nitrates, and phosphates in continental surface water; and environmental objects like native forests, endangered plants, or endangered species. Moreover, the targets identified account for the fact that the different pollutants can be emitted from different sources such as industrial plants, passenger cars, or heavy-duty vehicles. The instrument types range from "command-and-control" instruments, such as obligatory policy standards, bans, and technological prescriptions, to so-called "new" environmental policy instruments such as environmental taxes, subsidies, liability schemes, and information-based measures. For the field of social policy, in turn we distinguish between 27 policy targets spread across three subfields of unemployment, retirement, and children. Policy targets include, among others, regular unemployment, temporary seasonal unemployment, regular retirement for individuals, retirement of married couples, and retirement of unmarried couples. Furthermore, targets include birth, children, and juveniles. Overall, we consider seven policy instruments. These are, among others, universal benefits/allowances, means-tested benefits, contributions/fees, and tax exemptions/subsidies, bonus/grant, retention period, and one residual category ("others"). In the online appendix (Tables A1–A4) we provide a full list of all policy targets and instruments considered for the two areas under scrutiny. Subnational

legislation was excluded from the data collection process since we are mainly interested in policy-making at the national level. Furthermore, our analytical focus is on the relation between size and complexity. As patterns of subnational policy-making might affect the absolute levels of size and complexity but not the relation between the two, varying degrees of multilevel policy-making are unlikely to affect our results. Based on this coding of policy instruments and targets and the use of the above-mentioned concepts of size and complexity, we obtain yearly data for size and complexity for the fields of social and environmental policy.

Figure 2 shows the distribution of the size and complexity for environmental and social policy portfolios. The vertical lines show the respective means of portfolio size and the horizontal lines the means for complexity. First, we can see that there is a correlation between portfolio size and complexity. Many observations map roughly onto a diagonal from the bottom-left corner (small and simple) to the top-right corner (big and complex). However, we can also see that there is a lot of unexplained variation. In particular, there are many instances where a country's policy portfolio size is relatively small, yet rather complex. This observation holds true for both social and environmental policy. Interestingly, we find hardly any observations in the bottom-right quadrant. Hence, few countries have big and very simple policy portfolios although this would be conceptually possible. In sum, these findings indicate that growing state activity is indeed associated with higher policy complexity. However, the relation is far from deterministic as we find significant unexplained variation in the size-complexity nexus. In the online appendix, we show boxplots that present the yearly distribution of size and complexity (see Figure A2).

## 5 | PREDICTING VARIATION IN THE SIZE-COMPLEXITY NEXUS

We run panel data regressions in order to test whether institutionalist theory, globalization theory, and partisan theory can help to explain variation in the relation between policy portfolio

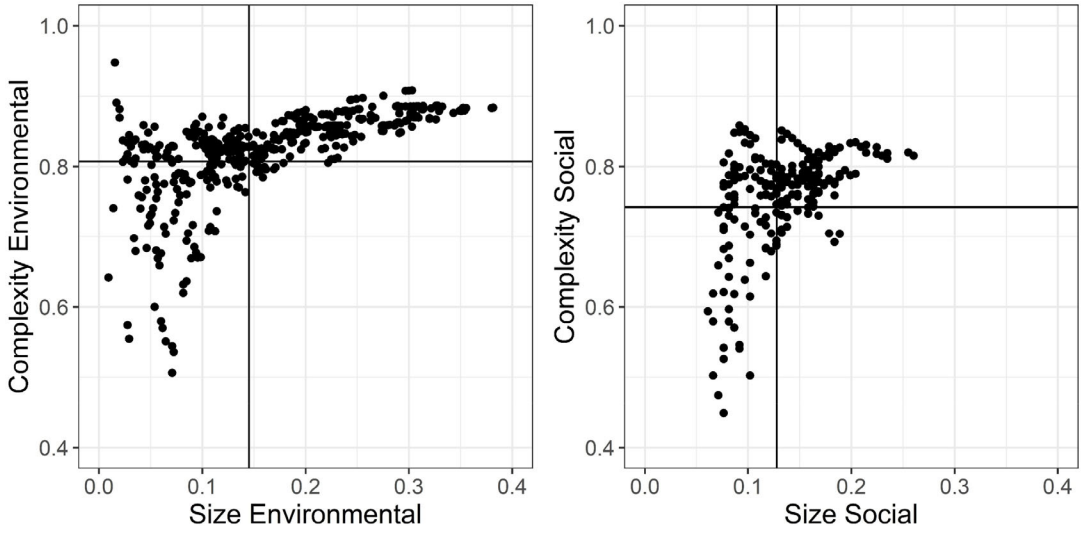


FIGURE 2 Size and complexity of environmental and social policy portfolios, 1980–2015. Horizontal lines show the respective means of our complexity measure and vertical lines show the means of portfolio size

size and complexity. As the previous section would lead us to expect different dynamics for environmental and social policy, we run separate regressions for each policy field. Our dependent variable is the indicator for policy portfolio complexity and the main independent variable is our measure for policy portfolio size. It is important to note that we are not primarily trying to identify whether the causal arrow runs from size to complexity (or vice versa). Instead, we are interested in the association between these two factors. We run interaction effects to find out whether the different theories can account for variation in the relation between size and complexity.

We operationalize institutionalist structures via an index that measures domestic political constraints on central government (Schmidt, 1996). The indicator is an additive index, which ranges from 0 to 5, with higher values indicating more institutional constraints (e.g., federalism, frequent referenda, and strong bicameralism). Second, we use the KOF index for political globalization to capture international political integration (Dreher, 2006; Dreher et al., 2008). Among others, this indicator covers aspects like membership in international organizations, the number of international treaties signed, and the number of embassies and high commissions in a country. The measure ranges from 0 to 100, with higher values indicating higher levels of political globalization. Finally, we use two indices from Jahn (2011) to measure the ideological position of governments. For social policy, we use his right–left index whereas for environmental policy, we take his growth-green index. We rescale both indices so that higher values indicate more leftist respectively greener government positions.

We control for effects of socio-economic variables that capture the role of functional needs as well as capacities for policy-making (Duit & Galaz, 2008; Obinger, 2015). As societies get wealthier, their socio-economic structures become more differentiated, creating multifaceted social and economic problems, which require demand-tailored policy solutions. We account for this by controlling for GDP per capita (logged values). Data come from the World Bank (2018). In order to capture the effect of fiscal problem pressure, we include the yearly public household deficit as a percentage of GDP in our models (OECD, 2019). Furthermore, we account for socio-economic problem pressure by controlling for a country's unemployment and inflation rate (Armingeon et al., 2020; OECD, 2020) and for general dynamics of financial globalization by including a variable measuring the capital account openness (Chinn & Ito, 2008). In addition to these controls, there might be time-invariant country characteristics that could affect the size-complexity nexus. For instance, there is a broad literature in comparative public policy research which stresses the importance of administrative traditions for policy-making (Biesbroek et al., 2018; Peters & Painter, 2010). Our main models are calculated using normal OLS standard errors. In order to account for time-invariant characteristics and other sources of unobserved unit heterogeneity, we include country fixed effects. Furthermore, time dynamics might affect the relation between size and complexity. We include a variable that measures a linear time trend to account for this.

We start by looking at the main effect of portfolios size on complexity (Table 2). First, we solely include the portfolio size variable without controlling for country fixed effects and time trends. In line with the previously presented descriptive findings, we see that the two are positively and statistically significantly correlated. However, the relationship is far from deterministic. Size alone accounts for around 30 percent of the variance in environmental policy complexity and 18 percent of social policy complexity.[2] The positive and statistically significant coefficient remains when adding our full set of controls as well as country fixed effects and time trends. Importantly, some of the correlations might stem from the fact that size and complexity are not fully independent of one another. To deal with the econometric problems that this might entail,

**TABLE 2** Regression models for social and environmental policy portfolios

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| LDV | | | 0.8009*** | | | 0.8518*** |
| | | | (0.0171) | | | (0.0178) |
| Portfolio size | 0.5058*** | 0.3934*** | 0.0501* | 0.8514*** | 0.5114*** | 0.0886* |
| | (0.0283) | (0.0460) | (0.0222) | (0.0656) | (0.0902) | (0.0430) |
| Institutional constraints | | −0.0266*** | −0.0022 | | −0.0081*** | −0.0008 |
| | | (0.0040) | (0.0019) | | (0.0025) | (0.0012) |
| GDP per capita (logged) | | −0.0244** | 0.0015 | | 0.0068 | −0.0048* |
| | | (0.0081) | (0.0037) | | (0.0052) | (0.0024) |
| Political globalization | | 0.0019*** | 0.0006** | | 0.0002 | −0.0001 |
| | | (0.0004) | (0.0002) | | (0.0003) | (0.0001) |
| Growth-green | | 0.0004 | 0.0001 | | | |
| | | (0.0003) | (0.0001) | | | |
| Right–left | | | | | 0.0001 | −0.0001 |
| | | | | | (0.0002) | (0.0001) |
| Deficit | | −0.0002 | 0.0000 | | 0.0004 | −0.0000 |
| | | (0.0005) | (0.0002) | | (0.0003) | (0.0001) |
| Unemployment | | −0.0034*** | −0.0008* | | −0.0004 | −0.0003 |
| | | (0.0007) | (0.0003) | | (0.0005) | (0.0002) |
| Inflation | | −0.0008 | −0.0004 | | 0.0008 | 0.0001 |
| | | (0.0006) | (0.0003) | | (0.0004) | (0.0002) |
| Capital account openness | | −0.0700*** | −0.0184*** | | 0.0245*** | 0.0054 |
| | | (0.0117) | (0.0055) | | (0.0074) | (0.0035) |
| Observations | 756 | 721 | 704 | 756 | 721 | 704 |
| $R^2$ | 0.297 | 0.803 | 0.959 | 0.183 | 0.921 | 0.984 |
| Country FE | No | Yes | Yes | No | Yes | Yes |
| Time trends | No | Yes | Yes | No | Yes | Yes |
| SE | OLS | OLS | OLS | OLS | OLS | OLS |

***$p < .001$, **$p < .01$, *$p < .05$.

we run some additional specifications. In specific, we calculate models that use jackknife resampling to ensure that our results are robust to a non-normal distribution of residuals due to influential cases and models that use panel-corrected standard errors to account for heteroscedasticity (Table A5). We also run a model where we include a lagged dependent variable to deal with the issue for serial autocorrelation.[3] Across models, portfolio size is strongly correlated to complexity. This applies both to environmental and social policy portfolios. A 0.1-point increase in portfolio size (i.e., 10 percentage points) is associated with an increase in complexity by 0.039 (i.e., 3.9 percentage points) for environmental policy and 0.05 points (i.e., 5 percentage points) for social policy. Hence, the finding is both statistically significant and substantially significant.

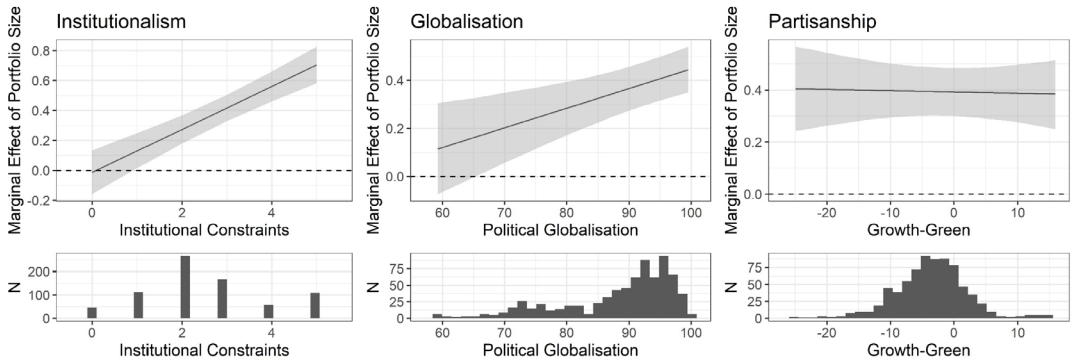


**FIGURE 3** Average marginal effects of environmental portfolio size on complexity

In a second step, we run models that include interaction effects (Table A6 in the Appendix). In order to interpret the interaction effects substantially, we calculate average marginal effects of portfolio size for each interaction (Brambor et al., 2006). To ensure that we are only analyzing average marginal effects in areas of common support for the moderator variable, we add histograms to the respective plots that show the variable distributions (Hainmueller et al., 2019).

Let us start by looking at environmental policy (Figure 3). Most strikingly, the left panel shows that the average marginal effect of portfolio size increases substantially with growing institutional constraints. While size and complexity are not correlated for countries without any institutional constraints, the coefficient grows to around 0.7 for countries with five institutional veto points. Hence, an increase in size by 10 percentage points is associated with a 7-percentage point higher complexity score. This finding is in line with institutionalist theory: with more institutional veto points, environmental portfolio size is strongly and positively associated with complexity. Higher portfolio size requires consensus-based policy-making that incorporates demands from several political actors. This means higher complexity.

Second, we do not find support for the partisan hypothesis. In environmental policy-making, greener governments are not affecting the relation between size and complexity. An increase in size is associated with an increase in complexity irrespective of a governments position on the growth-green scale. When governments decide to adopt new environmental policy, the size-complexity nexus is not affected by the strength of green parties in government.

Finally, we find evidence for globalization theory. The middle panel shows that the association between size and complexity tends to increase with political globalization. The association is positive and statistically significant for most values of political globalization. Yet, the coefficient is more than four times larger for countries with the highest values of political globalization compared to the ones with the lowest values. With higher degrees of political globalization, size and complexity become more strongly correlated. With more exchange of political experiences and political learning about new policy instruments, governments make use of a broader environmental policy toolset when expanding their policy portfolio.

For the field of social policy, the findings are partially different (Figure 4). First, and contrary to our theoretical expectations, we do not find evidence for institutional theory. The association between size and complexity does not change significantly with institutional constraints.

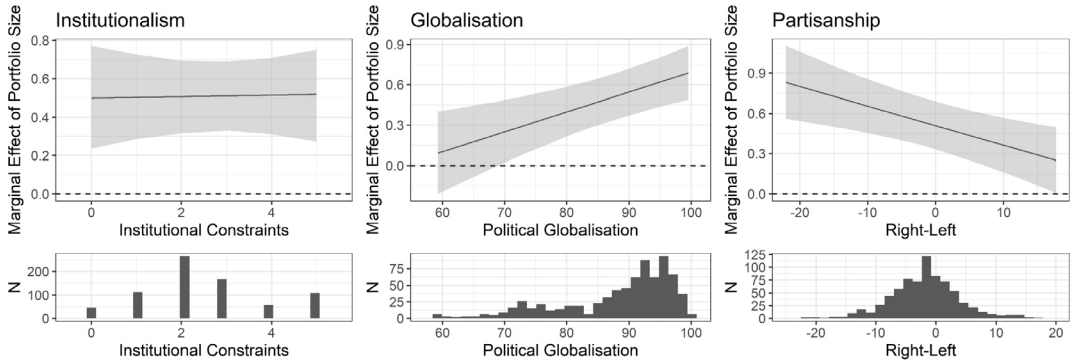


**FIGURE 4** Average marginal effects of social portfolio size on complexity

Second, and again in contrast to our findings for environmental policy, the findings show that partisanship matters in the area of social policy. Here, increases in social policy portfolio size are less likely to be associated with increases in complexity when more leftist parties are in government. This finding is in line with the comparative welfare state literature, which has argued that leftist parties prefer universal, broad-based social security systems (Esping-Andersen, 1990). With leftist parties in government, a growth in social policy-making leads to a much lower increase in complexity. In other words, leftist parties prefer simpler, more universalistic social policies when expanding welfare state activity. Furthermore, this finding demonstrates the importance of comparing and contrasting findings in different policy fields.

Lastly, we find that political globalization also moderates the size-complexity nexus in the field of social policy. The coefficient of social policy portfolio size only becomes significant for values of political globalization higher than 70. Among the highest levels of globalization, the coefficient is around 0.7. Hence, an increase in size by 10 percentage points is associated with an increase in complexity by 7-percentage points. Hence, we can see similar patterns for the moderating impact of political globalization across both policy fields. In both social and environmental policy, political globalization amalgamates the two dimensions of policy portfolios.

## 6 | DISCUSSION

Overall, we can conclude that while globalization generally drives size-complexity nexus, the importance of domestic factors varies across the two sectors. But why is this the case? What are the differences between environmental and social policies that can account for the varying relevance of the different explanatory approaches considered? The fact that partisanship plays no particular role for the environmental size-complexity nexus is not really surprising. Environmental policies are "consensus issues," which do transcend the partisan differences characteristic of most political issue. While environmental and especially climate policy has definitely become a highly conflict-laden issue over the course of the last decade, it had not been for most years in our investigation period (Lester, 1980).

More remarkable, by contrast, is the finding that institutional constraints do not make a real difference in the area of social policy. A possible explanation for this finding could be that

"doing more" in social policy typically implies "doing less" when it comes to welfare state generosity (Jensen et al., 2014). Under these conditions of "permanent austerity" (Pierson, 1998), not only the presence but also the absence of institutional constraints might lead to the production of more complex policy portfolios. Low levels of institutional constraints de facto imply that governments have little chance to avoid blame (Jensen & Mortensen, 2014). In consequence, complex policy reforms might be the only way to obfuscate cutbacks and, this way, to undertake the structural reforms needed. Pierson (1994) calls this strategy the "Dan Rather Test" (p. 21) (named after a famous US reporter): Reforms are less likely to generate outcry and resistance if policies are complex and reporters cannot quickly and easily explain the implication of policy reforms for the broader public.

Panel data analysis on the macro level is often sensitive to modeling choices (Wilson & Butler, 2007). Therefore, we provide a range of robustness checks that use different econometric approaches (see Online Appendix, Tables A7–A12). Our central findings hold for all of these specification.[4] In addition, we run models in which we include an additional control variable for public opinion. More specifically, we take data from Caughey et al. (2019) on national publics attitudes regarding relative economic conservatism. Higher values indicate that the public prefers fewer constrains on economic activity compared to the status quo. Although we lose around one third of observations due to data coverage, all findings hold when additionally controlling for public opinion (Table A13).

In sum, our findings show strong support for globalization theory. Across both policy areas, higher levels of political globalization are associated with a stronger correlation between size and complexity. As countries become politically integrated, they tend to expand their portfolios with a more diverse range of policy instruments. Hence, their portfolios become more complex. It is important to highlight that we make this observation even when simultaneously controlling for other dimensions of globalization such as the impact of global financial markets. We can thus exclude the possibility that it is simply the stronger integration in international markets that is reflected in our data. We also find strong evidence for institutionalist theory in the field of environmental policy and for partisanship theory in the field of social policy. These results suggest that the explanatory power of grand theories on domestic political determinants in comparative public policies might vary by policy fields.

But what are the broader implications of these findings? First and foremost, being able to systematically map and measure both state activity and complexity is a first major empirical step toward disentangling characteristics of modern statehood. This way, we reduce the "risk that complexity is simply black boxed" (Flanagan et al., 2011 p. 702) and conflated with related but still different analytical concepts such as state activity or size. Second, in the immediate aftermath of the COVID-19 pandemic, we witness a (new) debate on whether "the big state is back in business" (The Economist 2022), on whether democratic states are finally witnessing the end of the "neoliberal order" (Gerstle, 2018; Marantz, 2021), and on whether democratic governments do reassert their responsibility for managing societal, economic, and environmental problems (Reckwitz, 2021). Our findings directly speak to this debate by highlighting that greater state activity will—more likely than not—also result in more complex policy portfolios. As discussed above, this is not problematic per se but a side effect that needs to be considered when calling for a more ambitious and interventionist state. The third major insight of our finding is that—luckily—political scientists already possess the analytical and theoretical toolset to grasp and explain the variation in the size-complexity nexus. While all of the grand theories applied were initially developed to explain the *direction* (e.g., more vs. less social protection)

and *magnitude* (small vs. big reforms) of policy change, we show that the respective theoretical approaches are also instrumental in explaining the level of policy complexity.

## 7 | CONCLUSION

The central interest of this article was to examine whether modern states are condemned to complexity or whether states can find ways to increase their activities while keeping the policy complexity at a relatively low level. There is one simple and one more nuanced answer to give—both leading to the same conclusion. The simple answer is that there is (indeed) a quite strong relationship between the number of things the state does and the complexity of its actions. In other words, as long as governments tend to do ever-more, we will see rising levels of policy complexity.

The more nuanced answer is that there is a strong correlation but that there is still some variation left. This variation, in turn, can be explained by different factors—some of which are sector-specific and one that holds for both social and environmental policy. In particular, we found that the influence of institutional constraints and party politics vary in their effects on the size-complexity link. While institutional constraints strengthen the link between the size and complexity of environmental policy portfolios, they do not matter for social policy. For the latter, by contrast, the presence of left parties in government weakens the size-complexity nexus. Green parties, in turn, do not impact upon the size-complexity link for environmental policy. The most consistent predictor across both sectors, however, is the level of political globalization, with more international integration leading to a stronger coupling of size-complexity nexus.

This later finding highlights that policy complexity might not be a "natural given" but that two of the of major trends of our time—ever-more state activity and rising globalization—provide a very fertile mixture that boosts policy complexity. Neither of these trends are likely (nor desirable) to halt or reverse. Our findings indicate that state-activity in the 21st century will be marked by a continuous trend of ever-growing and increasingly complex policy portfolios. This trend, albeit moderated by domestic institutions and party politics, poses considerable challenges to strengthen and expand the carrying capacities that are needed to uphold the legitimacy and effectiveness of democratic governance. More specifically, modern democracies need to provide sufficient infrastructure to cope with growing burdens required for implementing ever-more complex policies (Dasgupta & Kapur, 2020). Moreover, governments need to develop and improve arenas that facilitate the public discourse and the public understanding of increasingly complex policy choices (Adam et al., 2019). Overall, the state in the 21st century needs to be a much "bigger" state in terms of democratic and administrative infrastructure to digest and legitimate its growing and more complex activities.

Yet, it should be noted that these conclusions need to be assessed in light of the limitations of this study. The latter emerge not only from our limited focus on solely two—though highly diverse—policy areas. They also relate to our specific measurement that captures the complexity of sectoral policy portfolios via the diversity of policy instruments used. There are (obviously) other measures of policy complexity that rely, for instance, on automated methods of natural language processing (Hurka et al., 2021; Senninger, 2021). All these approaches have their strength and weaknesses as they capture different aspects and dimensions of policy complexity. Regardless of which measures are ultimately used—either alone or in combination—

they should become a central reference parameter in policy debates as they can inform policymakers about the aggregate and long-term consequences of their actions.

## ACKNOWLEDGMENTS

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## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

## ENDNOTES

[1] In the literature on complex and evolutionary systems, diversity and complexity are typically treated as one and the same thing. Here, the diversity among the parts of a system (instruments in our case) is typically treated as the complexity of the whole (McShea & Brandon, 2010). Likewise, Sornette (2009) identifies probability distributions—such as diversity measures—as the "first quantitative characteristics" of complex systems (p. 2).

[2] In contrast, size only accounts for around three percent of the variation in complexity when simulating the relation between size and portfolio based on randomly generated portfolios. Hence, the empirically observed correlation between size and complexity is much stronger than correlation "induced" through our conceptualisation.

[3] Note, however, that the usage of a lagged dependent variable is highly debated in the methodological literature (Keele & Kelly, 2006; Wilson & Butler, 2007).

[4] We use country-clustered, panel-corrected, and jackknifed SE (Tables A7–A9), run two-way fixed effects models (Table A10), control for time trends via cubic polynomial splines (Table A11), and calculate models that do not include controls for temporal dynamics (Table A12).

## DATA AVAILABILITY STATEMENT

Data and replication material is available in the Online Appendix section on the publisher's website.

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## APPENDIX

**TABLE A1** List of policy items

| |
|---|
| **Clean air policy** |
| 1. Air quality standards for nitrogen oxides ($NO_x$) |
| 2. Air quality standards for sulfur dioxide ($SO_2$) |
| 3. Air quality standard for carbon monoxide (CO) |
| 4. Air quality standard for particulate matter |
| 5. Air quality standard for ozone ($O_3$) |
| 6. Air quality standard for lead |
| 7. Nitrogen oxide ($NO_x$) emissions from large combustion plants using coal |
| 8. Nitrogen oxide ($NO_x$) emissions from passenger vehicles using unleaded gasoline |
| 9. Nitrogen oxide ($NO_x$) emissions from heavy duty vehicles using diesel |
| 10. Sulfur dioxide ($SO_2$) emissions from large combustion plants using coal |
| 11. Sulfur dioxide ($SO_2$) emissions from passenger vehicles using unleaded gasoline |
| 12. Sulfur dioxide ($SO_2$) emissions from heavy duty vehicles using diesel |
| 13. Carbon dioxide ($CO_2$) emissions from large combustion plants using coal |
| 14. Carbon dioxide ($CO_2$) emissions from passenger vehicles using unleaded gasoline |
| 15. Carbon monoxide (CO) emissions from large combustion using coal |
| 16. Carbon monoxide (CO) emissions from passenger vehicles using unleaded gasoline |
| 17. Particulate matter emissions from large combustion plants using coal |
| 18. Arsenic emissions from stationary sources |
| 19. Maximum permissible limit for the lead content of gasoline |
| 20. Maximum permissible limit for the sulfur content of diesel |
| **Water protection policy** |
| 1. Lead in continental surfaces water (i.e., waters that flow or which are stored on the surface, and include natural water channels like rivers, surface runoff, streams, lakes and others) |
| 2. Copper in continental surfaces water |
| 3. Nitrate ($NO_{3\_}$) in continental surfaces water |
| 4. Phosphates in continental surfaces water |
| 5. Zinc in continental surfaces water |
| 6. Oils in continental surfaces water |
| 7. Pesticides (fungicides, herbicides, insecticides, exempt DDT) in continental surfaces water |
| 8. DDT (dichloro-diphenyl-trichloroethane) in continental surfaces water |
| 9. Phenols (as total C) in continental surfaces water |
| 10. BOD (biochemical oxygen demand) of continental surfaces water |

(Continues)

TABLE A1 (Continued)

| |
|---|
| **Water protection policy** |
| 11. Lead from industrial discharges into continental surfaces water |
| 12. Copper from industrial discharges into continental surfaces water |
| 13. Nitrate ($NO_{3\_}$) from industrial discharges into continental surfaces water |
| 14. Phosphates from industrial discharges into continental surfaces water |
| 15. Chloride ($Cl^{-}$) from industrial discharges into continental surfaces water |
| 16. Sulfates from industrial discharges into continental surfaces water |
| 17. Iron from industrial discharges into continental surfaces water |
| 18. Zinc from industrial discharges into continental surfaces water |
| 19. Oils and greases from industrial discharges into continental surfaces water |
| 20. Pesticides and herbicides from industrial discharges into continental surfaces water |
| 21. Phenols (as total C) from industrial discharges into continental surfaces water |
| 22. Coliform bacteria from industrial discharges into continental surfaces water |
| 23. BOD (biochemical oxygen demand) from industrial discharges into continental surfaces water |
| 24. COD (chemical oxygen demand) from industrial discharges into continental surfaces water |
| **Conservation policy** |
| 1. Native forests |
| 2. Nature protection areas and reserves |
| 3. Import and export of endangered species |
| 4. Import and export of endangered plants |

**TABLE A2** Environmental policy instruments

| Instrument | Description | Example |
|---|---|---|
| Obligatory standard | A legally enforceable numerical standard, typically involving a measurement unit, for example, mg/l | Limit value for lead emissions in surface water, for example, 50 mg/L |
| Prohibition/ban | A total or partial prohibition/ban on certain emissions, activities, products, and so on | Ban on importation of products containing flurochlorocarbons |
| Technological prescription | A measure prescribing the use of a specific technology or process | Installations have to be operated in accordance with the principle of "best available techniques" (BAT) |
| Tax/levy | A tax or levy for a polluting product or activity | Tolls and road user charges for trucks depending on the emission class |
| Subsidy/tax reduction | A measure by which the state grants a financial advantage to a certain product or activity | Tax reduction for vehicles in series production complying with a regulation |
| Liability scheme | A measure that allocates the costs of environmental damage to those who have caused the damage | Establishment of an emission trading system |
| Planning instrument | A measure defining areas or times that deserve particular protection | Action plans indicating the measures to be taken during times when there is a risk of the limit being exceeded |
| Public investment | A specific public investment | Programs given financial support for the retrofitting of in-use vehicles and for scrapping old vehicles |
| Data collection/monitoring programmes | A specific programme for collecting data | Establishment of measuring stations designed to supply the data necessary for the application of a certain regulation |
| Voluntary measures | Voluntary agreements or commitments between the state and private actors or by private actors alone | Manufacturers can apply for the $CO_2$ savings achieved as a result of eco-innovation (if approved can used to contribute to manufacturer's specific emissions target) |
| Information-based instrument | Information provided by the state or the polluters indicating the environmental externalities of a certain product or activity | Label on fuel economy and $CO_2$ emissions of a vehicle displayed at the point of sale |
| Other | Any instrument that cannot be assigned to the other categories | (...) |

**TABLE A3** List of policy targets, social policy

| |
|---|
| **Unemployment benefits** |
| 1. Basic unemployment benefits |
| 2. Special unemployment benefits: bad weather; seasonal unemployment benefits |
| 3. Special unemployment benefits: emergency aid |
| 4. Special unemployment benefits: special holiday payments |
| 5. Special unemployment benefits: partial unemployment benefits |
| 6. Special unemployment benefits: other |
| 7. Unemployment fee/contribution |
| 8. Support for vocational education and training/vocational reintegration expenses |
| 9. Retention period (in case of quitting by the employee), that is, a period of quarantine without benefits |
| 10. Retention period (dismissal by the employer), that is, a period of quarantine without benefits |
| 11. Subsidized employment/employment subsidies |
| 12. Reimbursement of expenses related to active job search |
| **Pensions** |
| 1. People's pension (standard-employee pension) for singles |
| 2. People's pension (standard-employee pension) for married couples |
| 3. People's pension (standard-employee pension) for unmarried couples |
| 4. Additional people's pension for singles |
| 5. Additional people's pension for married couples |
| 6. Additional people's pension for unmarried couples |
| 7. Special pensions for singles |
| 8. Special pensions for married couples |
| 9. Special pensions for unmarried couples |
| 10. Pension fee/contribution for singles |
| 11. Pension fee/contribution for married couples |
| 12. Pension fee/contribution for unmarried couples |
| **Child benefits** |
| 1. Children |
| 2. Juveniles |
| 3.Payments for giving birth to children |

**TABLE A4** Social policy instruments

| Instrument | Description | Example |
|---|---|---|
| Universal benefit/ allowance | Payment by the state (no means testing) | Unemployed persons receive the full or the reduced amount of their previously earned daily income |
| Means-tested benefit | Means-tested benefit (typically eligibility criteria do not include the payment of contributions to an insurance scheme but a needs calculation) | Person can demonstrate that their income is below specified limits justifying (further) welfare benefit |
| Contribution/ fee | Contribution to a state agency, a public insurance scheme, and so on | Working people have to contribute some share of their income to a public insurance scheme to qualify for receiving unemployment benefits, health care, and so on |
| Tax exemption/ subsidy | A reduction of tax payments in order to provide income tax savings | Persons must be unemployed for some time before they can apply for a welfare benefit |
| Bonus/grant | One-off grant (no means testing) | Working persons can apply for reimbursement of commuting and other expenses |
| Retention period | Non-payment of a certain allowance | Persons must be unemployed for some time before they can apply for a welfare benefit |
| Other | Any instrument that cannot be assigned to the other categories | (...) |

**TABLE A5** Regression models for social and environmental policy portfolios, PCSEs, and jackknife

| | Complexity environmental policy | | Complexity social policy | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Portfolio size | 0.3934*** | 0.3934*** | 0.5114*** | 0.5114*** |
| | (0.0497) | (0.0537) | (0.0977) | (0.0743) |
| Institutional constraints | −0.0266*** | −0.0266*** | −0.0081* | −0.0081*** |
| | (0.0041) | (0.0027) | (0.0036) | (0.0022) |
| GDP per capita (logged) | −0.0244** | −0.0244*** | 0.0068 | 0.0068 |
| | (0.0090) | (0.0065) | (0.0060) | (0.0042) |
| Political globalization | 0.0019*** | 0.0019*** | 0.0002 | 0.0002 |
| | (0.0005) | (0.0003) | (0.0003) | (0.0002) |
| Growth-green | 0.0004 | 0.0004 | | |
| | (0.0004) | (0.0002) | | |
| Right–left | | | 0.0001 | 0.0001 |
| | | | (0.0002) | (0.0001) |
| Deficit | −0.0002 | −0.0002 | 0.0004 | 0.0004 |
| | (0.0005) | (0.0004) | (0.0004) | (0.0003) |
| Unemployment | −0.0034*** | −0.0034*** | −0.0004 | −0.0004 |
| | (0.0007) | (0.0005) | (0.0005) | (0.0004) |
| Inflation | −0.0008 | −0.0008 | 0.0008 | 0.0008* |
| | (0.0009) | (0.0005) | (0.0004) | (0.0003) |
| Capital account openness | −0.0700*** | −0.0700*** | 0.0245** | 0.0245*** |
| | (0.0153) | (0.0114) | (0.0081) | (0.0062) |
| Observations | 721 | 721 | 721 | 721 |
| $R^2$ | 0.803 | 0.803 | 0.921 | 0.921 |
| Country FE | Yes | Yes | Yes | No |
| Time trends | Yes | Yes | Yes | No |
| SE | Jackknife | PCSE | Jackknife | PCSE |

***$p < .001$, **$p < .01$, *$p < .05$.

**TABLE A6** Main interaction effects

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Portfolio size | −0.0134 | −0.3700 | 0.3928*** | 0.4994*** | −0.7855* | 0.5087*** |
| | (0.0727) | (0.2353) | (0.0462) | (0.1354) | (0.3911) | (0.0897) |
| Institutional constraints | −0.0388*** | −0.0264*** | −0.0265*** | −0.0087 | −0.0086*** | −0.0082*** |
| | (0.0042) | (0.0040) | (0.0040) | (0.0050) | (0.0024) | (0.0024) |
| GDP per capita (logged) | −0.0156* | −0.0158 | −0.0246** | 0.0069 | 0.0090 | 0.0070 |
| | (0.0079) | (0.0084) | (0.0082) | (0.0052) | (0.0052) | (0.0051) |
| Political globalization | 0.0016*** | 0.0012* | 0.0019*** | 0.0002 | −0.0013* | 0.0002 |
| | (0.0004) | (0.0005) | (0.0004) | (0.0003) | (0.0005) | (0.0003) |
| Green-growth | 0.0000 | 0.0003 | 0.0005 | | | |
| | (0.0003) | (0.0003) | (0.0006) | | | |
| Left–right | | | | 0.0001 | −0.0000 | 0.0019** |
| | | | | (0.0002) | (0.0002) | (0.0006) |
| Unemployment | −0.0034*** | −0.0036*** | −0.0034*** | −0.0004 | −0.0007 | −0.0003 |
| | (0.0007) | (0.0007) | (0.0007) | (0.0005) | (0.0005) | (0.0005) |
| Inflation | −0.0018** | −0.0012 | −0.0008 | 0.0008 | 0.0006 | 0.0009* |
| | (0.0006) | (0.0006) | (0.0006) | (0.0004) | (0.0004) | (0.0004) |
| Deficit | −0.0007 | −0.0003 | −0.0002 | 0.0004 | 0.0002 | 0.0005 |
| | (0.0005) | (0.0005) | (0.0005) | (0.0003) | (0.0003) | (0.0003) |
| Capital account openness | −0.0683*** | −0.0729*** | −0.0704*** | 0.0244** | 0.0201** | 0.0236** |
| | (0.0113) | (0.0116) | (0.0118) | (0.0075) | (0.0075) | (0.0074) |
| Size*Institutional constraints | 0.1435*** | | | 0.0043 | | |
| | (0.0203) | | | (0.0363) | | |
| Size*Political globalization | | 0.0082*** | | | 0.0148*** | |
| | | (0.0025) | | | (0.0043) | |
| Size*Green-growth | | | −0.0005 | | | |
| | | | (0.0029) | | | |
| Size*Left–right | | | | | | −0.0146** |
| | | | | | | (0.0047) |
| $R^2$ | 0.8162 | 0.8059 | 0.8028 | 0.9207 | 0.9220 | 0.9217 |
| *N* | 721 | 721 | 721 | 721 | 721 | 721 |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | Yes | Yes | Yes | Yes | Yes | Yes |
| SE | OLS | OLS | OLS | OLS | OLS | OLS |

**TABLE A7** Robustness checks interaction effects—Country-clustered SE

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Portfolio size | −0.0134 | −0.3700 | 0.3928*** | 0.4994** | −0.7855 | 0.5087*** |
| | (0.0725) | (0.2899) | (0.0496) | (0.1839) | (0.5924) | (0.0949) |
| Institutional constraints | −0.0388*** | −0.0264*** | −0.0265*** | −0.0087 | −0.0086* | −0.0082* |
| | (0.0047) | (0.0041) | (0.0042) | (0.0088) | (0.0036) | (0.0035) |
| GDP per capita (logged) | −0.0156 | −0.0158 | −0.0246** | 0.0069 | 0.0090 | 0.0070 |
| | (0.0084) | (0.0088) | (0.0087) | (0.0057) | (0.0056) | (0.0059) |
| Political globalization | 0.0016*** | 0.0012* | 0.0019*** | 0.0002 | −0.0013 | 0.0002 |
| | (0.0005) | (0.0005) | (0.0005) | (0.0003) | (0.0008) | (0.0003) |
| Green-growth | 0.0000 | 0.0003 | 0.0005 | | | |
| | (0.0003) | (0.0004) | (0.0007) | | | |
| Left–right | | | | 0.0001 | −0.0000 | 0.0019* |
| | | | | (0.0002) | (0.0002) | (0.0009) |
| Unemployment | −0.0034*** | −0.0036*** | −0.0034*** | −0.0004 | −0.0007 | −0.0003 |
| | (0.0007) | (0.0007) | (0.0007) | (0.0006) | (0.0006) | (0.0005) |
| Inflation | −0.0018* | −0.0012 | −0.0008 | 0.0008 | 0.0006 | 0.0009* |
| | (0.0008) | (0.0008) | (0.0009) | (0.0004) | (0.0004) | (0.0004) |
| Deficit | −0.0007 | −0.0003 | −0.0002 | 0.0004 | 0.0002 | 0.0005 |
| | (0.0005) | (0.0005) | (0.0005) | (0.0004) | (0.0004) | (0.0004) |
| Capital account openness | −0.0683*** | −0.0729*** | −0.0704*** | 0.0244** | 0.0201** | 0.0236** |
| | (0.0141) | (0.0148) | (0.0151) | (0.0077) | (0.0077) | (0.0078) |
| Size*Institutional constraints | 0.1435*** | | | 0.0043 | | |
| | (0.0212) | | | (0.0511) | | |
| Size*Political globalization | | 0.0082** | | | 0.0148* | |
| | | (0.0030) | | | (0.0063) | |
| Size*Green-growth | | | −0.0005 | | | |
| | | | (0.0032) | | | |
| Size*Left–right | | | | | | −0.0146* |
| | | | | | | (0.0060) |
| $R^2$ | 0.8162 | 0.8059 | 0.8028 | 0.9207 | 0.9220 | 0.9217 |
| Num. obs. | 721 | 721 | 721 | 721 | 721 | 721 |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | Yes | Yes | Yes | Yes | Yes | Yes |
| SE | Clustered | Clustered | Clustered | Clustered | Clustered | Clustered |

**TABLE A8** Robustness checks interaction effects—PCSE

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Portfolio size | −0.0134 | −0.3700 | 0.3928*** | 0.4994*** | −0.7855** | 0.5087*** |
| | (0.0303) | (0.2523) | (0.0546) | (0.0927) | (0.2781) | (0.0728) |
| Institutional constraints | −0.0388*** | −0.0264*** | −0.0265*** | −0.0087 | −0.0086*** | −0.0082*** |
| | (0.0037) | (0.0027) | (0.0028) | (0.0050) | (0.0023) | (0.0023) |
| GDP per capita (logged) | −0.0156** | −0.0158** | −0.0246*** | 0.0069 | 0.0090* | 0.0070 |
| | (0.0058) | (0.0056) | (0.0064) | (0.0043) | (0.0040) | (0.0040) |
| Political globalization | 0.0016*** | 0.0012** | 0.0019*** | 0.0002 | −0.0013*** | 0.0002 |
| | (0.0003) | (0.0004) | (0.0003) | (0.0002) | (0.0003) | (0.0002) |
| Green-growth | 0.0000 | 0.0003 | 0.0005 | | | |
| | (0.0002) | (0.0002) | (0.0005) | | | |
| Left–right | | | | 0.0001 | −0.0000 | 0.0019*** |
| | | | | (0.0001) | (0.0001) | (0.0006) |
| Unemployment | −0.0034*** | −0.0036*** | −0.0034*** | −0.0004 | −0.0007 | −0.0003 |
| | (0.0005) | (0.0005) | (0.0005) | (0.0004) | (0.0004) | (0.0003) |
| Inflation | −0.0018*** | −0.0012* | −0.0008 | 0.0008* | 0.0006 | 0.0009** |
| | (0.0005) | (0.0005) | (0.0005) | (0.0003) | (0.0003) | (0.0003) |
| Deficit | −0.0007* | −0.0003 | −0.0002 | 0.0004 | 0.0002 | 0.0005 |
| | (0.0003) | (0.0004) | (0.0004) | (0.0003) | (0.0003) | (0.0003) |
| Capital account openness | −0.0683*** | −0.0729*** | −0.0704*** | 0.0244*** | 0.0201** | 0.0236*** |
| | (0.0111) | (0.0116) | (0.0115) | (0.0061) | (0.0066) | (0.0062) |
| Size*Institutional constraints | 0.1435*** | | | 0.0043 | | |
| | (0.0160) | | | (0.0254) | | |
| Size*Political globalization | | 0.0082** | | | 0.0148*** | |
| | | (0.0031) | | | (0.0028) | |
| Size*Green-growth | | | −0.0005 | | | |
| | | | (0.0024) | | | |
| Size*Left–right | | | | | | −0.0146*** |
| | | | | | | (0.0038) |
| $R^2$ | 0.8162 | 0.8059 | 0.8028 | 0.9207 | 0.9220 | 0.9217 |
| Num. obs. | 721 | 721 | 721 | 721 | 721 | 721 |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | Yes | Yes | Yes | Yes | Yes | Yes |
| SE | PCSE | PCSE | PCSE | PCSE | PCSE | PCSE |

**TABLE A9** Robustness checks interaction effects—Jackknife procedure

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Portfolio size | −0.0134 | −0.3700 | 0.3928*** | 0.4994** | −0.7855 | 0.5087*** |
| | (0.0746) | (0.2997) | (0.0510) | (0.1894) | (0.6106) | (0.0975) |
| Institutional constraints | −0.0388*** | −0.0264*** | −0.0265*** | −0.0087 | −0.0086* | −0.0082* |
| | (0.0048) | (0.0042) | (0.0043) | (0.0090) | (0.0036) | (0.0036) |
| GDP per capita (logged) | −0.0156 | −0.0158 | −0.0246** | 0.0069 | 0.0090 | 0.0070 |
| | (0.0086) | (0.0091) | (0.0090) | (0.0059) | (0.0058) | (0.0060) |
| Political globalization | 0.0016*** | 0.0012* | 0.0019*** | 0.0002 | −0.0013 | 0.0002 |
| | (0.0005) | (0.0006) | (0.0005) | (0.0003) | (0.0008) | (0.0003) |
| Green-growth | 0.0000 | 0.0003 | 0.0005 | | | |
| | (0.0003) | (0.0004) | (0.0007) | | | |
| Left–right | | | | 0.0001 | −0.0000 | 0.0019* |
| | | | | (0.0002) | (0.0002) | (0.0009) |
| Unemployment | −0.0034*** | −0.0036*** | −0.0034*** | −0.0004 | −0.0007 | −0.0003 |
| | (0.0007) | (0.0007) | (0.0007) | (0.0006) | (0.0006) | (0.0005) |
| Inflation | −0.0018* | −0.0012 | −0.0008 | 0.0008 | 0.0006 | 0.0009* |
| | (0.0009) | (0.0008) | (0.0009) | (0.0005) | (0.0004) | (0.0004) |
| Deficit | −0.0007 | −0.0003 | −0.0002 | 0.0004 | 0.0002 | 0.0005 |
| | (0.0005) | (0.0005) | (0.0005) | (0.0004) | (0.0004) | (0.0004) |
| Capital account openness | −0.0683*** | −0.0729*** | −0.0704*** | 0.0244** | 0.0201* | 0.0236** |
| | (0.0145) | (0.0151) | (0.0155) | (0.0079) | (0.0079) | (0.0080) |
| Size*Institutional constraints | 0.1435*** | | | 0.0043 | | |
| | (0.0218) | | | (0.0526) | | |
| Size*Political globalization | | 0.0082** | | | 0.0148* | |
| | | (0.0031) | | | (0.0065) | |
| Size*Green-growth | | | −0.0005 | | | |
| | | | (0.0033) | | | |
| Size*Left–right | | | | | | −0.0146* |
| | | | | | | (0.0062) |
| $R^2$ | 0.8162 | 0.8059 | 0.8028 | 0.9207 | 0.9220 | 0.9217 |
| Num. obs. | 721 | 721 | 721 | 721 | 721 | 721 |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | Yes | Yes | Yes | Yes | Yes | Yes |
| Jackknife | Yes | Yes | Yes | Yes | Yes | Yes |

**TABLE A10** Robustness checks interaction effects—year fixed effects

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Portfolio size | −0.0169 | −0.2662 | 0.3799*** | 0.2080 | −0.8550* | 0.3029** |
| | (0.0748) | (0.2455) | (0.0492) | (0.1444) | (0.3971) | (0.0970) |
| Institutional constraints | −0.0379*** | −0.0255*** | −0.0254*** | −0.0089 | −0.0060* | −0.0054* |
| | (0.0047) | (0.0044) | (0.0045) | (0.0052) | (0.0026) | (0.0026) |
| GDP per capita (logged) | −0.0409*** | −0.0367** | −0.0490*** | 0.0195* | 0.0218** | 0.0192* |
| | (0.0116) | (0.0128) | (0.0120) | (0.0076) | (0.0075) | (0.0075) |
| Political globalization | 0.0016*** | 0.0015** | 0.0021*** | 0.0011** | −0.0003 | 0.0010** |
| | (0.0005) | (0.0006) | (0.0005) | (0.0003) | (0.0006) | (0.0003) |
| Green-growth | −0.0001 | 0.0003 | 0.0002 | | | |
| | (0.0003) | (0.0003) | (0.0006) | | | |
| Left–right | | | | −0.0000 | −0.0001 | 0.0016* |
| | | | | (0.0002) | (0.0002) | (0.0006) |
| Unemployment | −0.0043*** | −0.0044*** | −0.0044*** | −0.0009 | −0.0010 | −0.0007 |
| | (0.0008) | (0.0008) | (0.0008) | (0.0005) | (0.0005) | (0.0005) |
| Inflation | −0.0031*** | −0.0023** | −0.0021** | 0.0004 | 0.0004 | 0.0007 |
| | (0.0008) | (0.0008) | (0.0008) | (0.0005) | (0.0005) | (0.0005) |
| Deficit | −0.0005 | 0.0001 | 0.0002 | 0.0008* | 0.0007 | 0.0009** |
| | (0.0005) | (0.0005) | (0.0006) | (0.0004) | (0.0004) | (0.0003) |
| Capital account openness | −0.0677*** | −0.0709*** | −0.0670*** | 0.0284*** | 0.0247** | 0.0282*** |
| | (0.0120) | (0.0125) | (0.0126) | (0.0078) | (0.0078) | (0.0077) |
| Size*Institutional constraints | 0.1424*** | | | 0.0308 | | |
| | (0.0208) | | | (0.0366) | | |
| Size*Political globalization | | 0.0069** | | | 0.0132** | |
| | | (0.0026) | | | (0.0044) | |
| Size*Green-growth | | | 0.0006 | | | |
| | | | (0.0030) | | | |
| Size*Left–right | | | | | | −0.0123* |
| | | | | | | (0.0048) |
| $R^2$ | 0.8221 | 0.8114 | 0.8094 | 0.9261 | 0.9271 | 0.9268 |
| *N* | 721 | 721 | 721 | 721 | 721 | 721 |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| SE | OLS | OLS | OLS | OLS | OLS | OLS |

**TABLE A11** Robustness checks interaction effects—Cubic polynomial time trends

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Portfolio size | −0.0152 | −0.3618 | 0.3819*** | 0.2292 | −0.7982* | 0.3116** |
| | (0.0730) | (0.2361) | (0.0476) | (0.1401) | (0.3830) | (0.0943) |
| Institutional constraints | −0.0396*** | −0.0268*** | −0.0271*** | −0.0083 | −0.0055* | −0.0051* |
| | (0.0044) | (0.0041) | (0.0042) | (0.0049) | (0.0025) | (0.0025) |
| GDP per capita (logged) | −0.0146 | −0.0139 | −0.0224** | 0.0131* | 0.0142** | 0.0126* |
| | (0.0081) | (0.0087) | (0.0084) | (0.0052) | (0.0052) | (0.0051) |
| Political globalization | 0.0014*** | 0.0011* | 0.0018*** | 0.0007** | −0.0006 | 0.0007* |
| | (0.0004) | (0.0005) | (0.0004) | (0.0003) | (0.0005) | (0.0003) |
| Green-growth | 0.0001 | 0.0004 | 0.0006 | | | |
| | (0.0003) | (0.0003) | (0.0006) | | | |
| Left–right | | | | 0.0000 | −0.0000 | 0.0017** |
| | | | | (0.0002) | (0.0002) | (0.0006) |
| Unemployment | −0.0032*** | −0.0035*** | −0.0033*** | −0.0012* | −0.0013** | −0.0010* |
| | (0.0007) | (0.0007) | (0.0007) | (0.0005) | (0.0005) | (0.0005) |
| Inflation | −0.0021** | −0.0017* | −0.0013 | 0.0001 | 0.0001 | 0.0003 |
| | (0.0007) | (0.0007) | (0.0007) | (0.0005) | (0.0005) | (0.0005) |
| Deficit | −0.0007 | −0.0003 | −0.0002 | 0.0006 | 0.0005 | 0.0007* |
| | (0.0005) | (0.0005) | (0.0005) | (0.0003) | (0.0003) | (0.0003) |
| Capital account openness | −0.0701*** | −0.0740*** | −0.0720*** | 0.0274*** | 0.0243** | 0.0272*** |
| | (0.0114) | (0.0117) | (0.0119) | (0.0074) | (0.0074) | (0.0073) |
| Size*Institutional constraints | 0.1424*** | | | 0.0276 | | |
| | (0.0203) | | | (0.0357) | | |
| Size*Political globalization | | 0.0080** | | | 0.0127** | |
| | | (0.0025) | | | (0.0043) | |
| Size*Green-growth | | | −0.0005 | | | |
| | | | (0.0029) | | | |
| Size*Left–right | | | | | | −0.0131** |
| | | | | | | (0.0046) |
| $R^2$ | 0.8167 | 0.8066 | 0.8037 | 0.9245 | 0.9254 | 0.9253 |
| *N* | 721 | 721 | 721 | 721 | 721 | 721 |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Cubic polynomial time trends | Yes | Yes | Yes | Yes | Yes | Yes |
| SE | OLS | OLS | OLS | OLS | OLS | OLS |

**TABLE A12** Robustness checks interaction effects—No time trends

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Portfolio size | 0.0334 | −0.5506* | 0.4857*** | 0.5348*** | −0.5569 | 0.4598*** |
| | (0.0727) | (0.2329) | (0.0429) | (0.1365) | (0.3931) | (0.0896) |
| Institutional constraints | −0.0385*** | −0.0252*** | −0.0254*** | −0.0072 | −0.0111*** | −0.0104*** |
| | (0.0043) | (0.0040) | (0.0041) | (0.0051) | (0.0024) | (0.0024) |
| GDP per capita (logged) | 0.0069 | 0.0067 | 0.0024 | −0.0095** | −0.0099** | −0.0088** |
| | (0.0059) | (0.0061) | (0.0062) | (0.0031) | (0.0030) | (0.0030) |
| Political globalization | 0.0021*** | 0.0014** | 0.0025*** | −0.0000 | −0.0012* | 0.0000 |
| | (0.0004) | (0.0005) | (0.0004) | (0.0003) | (0.0005) | (0.0003) |
| Green-growth | −0.0000 | 0.0003 | 0.0002 | | | |
| | (0.0003) | (0.0003) | (0.0006) | | | |
| Left–right | | | | 0.0001 | 0.0000 | 0.0021** |
| | | | | (0.0002) | (0.0002) | (0.0006) |
| Unemployment | −0.0028*** | −0.0032*** | −0.0028*** | −0.0008 | −0.0011* | −0.0008 |
| | (0.0007) | (0.0007) | (0.0007) | (0.0005) | (0.0005) | (0.0004) |
| Inflation | −0.0018** | −0.0013 | −0.0007 | 0.0007 | 0.0005 | 0.0008 |
| | (0.0006) | (0.0006) | (0.0007) | (0.0004) | (0.0004) | (0.0004) |
| Deficit | −0.0005 | −0.0001 | 0.0001 | 0.0002 | 0.0001 | 0.0003 |
| | (0.0005) | (0.0005) | (0.0005) | (0.0003) | (0.0003) | (0.0003) |
| Capital account openness | −0.0774*** | −0.0820*** | −0.0801*** | 0.0291*** | 0.0255*** | 0.0273*** |
| | (0.0112) | (0.0115) | (0.0119) | (0.0075) | (0.0075) | (0.0074) |
| Size*Institutional constraints | 0.1537*** | | | −0.0260 | | |
| | (0.0204) | | | (0.0358) | | |
| Size*Political globalization | | 0.0108*** | | | 0.0115** | |
| | | (0.0024) | | | (0.0043) | |
| Size*Green-growth | | | 0.0013 | | | |
| | | | (0.0030) | | | |
| Size*Left–right | | | | | | −0.0156** |
| | | | | | | (0.0048) |
| $R^2$ | 0.8114 | 0.8017 | 0.7959 | 0.9189 | 0.9197 | 0.9201 |
| *N* | 721 | 721 | 721 | 721 | 721 | 721 |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | No | No | No | No | No | No |
| SE | OLS | OLS | OLS | OLS | OLS | OLS |

**TABLE A13** Robustness checks interaction effects—Additional public opinion covariate

| | Complexity environmental policy | | | Complexity social policy | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Portfolio size | −0.0660 | −0.4780* | 0.2551*** | 0.1979 | −0.9639* | 0.3875*** |
| | (0.0620) | (0.2134) | (0.0445) | (0.1412) | (0.4080) | (0.0858) |
| Institutional constraints | −0.0201*** | −0.0072* | −0.0076* | −0.0283*** | −0.0199*** | −0.0205*** |
| | (0.0035) | (0.0032) | (0.0033) | (0.0050) | (0.0024) | (0.0023) |
| GDP per capita (logged) | 0.0096 | 0.0108 | −0.0006 | −0.0046 | −0.0024 | −0.0064 |
| | (0.0068) | (0.0076) | (0.0074) | (0.0052) | (0.0052) | (0.0050) |
| Political globalization | 0.0013** | 0.0006 | 0.0017*** | 0.0010** | −0.0008 | 0.0011*** |
| | (0.0004) | (0.0005) | (0.0004) | (0.0003) | (0.0006) | (0.0003) |
| Green-growth | −0.0000 | 0.0001 | 0.0006 | | | |
| | (0.0002) | (0.0003) | (0.0006) | | | |
| Left–right | | | | −0.0002 | −0.0003 | 0.0026*** |
| | | | | (0.0002) | (0.0002) | (0.0006) |
| Unemployment | −0.0015** | −0.0017** | −0.0016** | −0.0014** | −0.0014*** | −0.0010* |
| | (0.0005) | (0.0005) | (0.0005) | (0.0004) | (0.0004) | (0.0004) |
| Inflation | −0.0015* | −0.0009 | −0.0007 | −0.0001 | 0.0001 | 0.0003 |
| | (0.0007) | (0.0007) | (0.0007) | (0.0005) | (0.0005) | (0.0005) |
| Deficit | −0.0014*** | −0.0012** | −0.0010* | 0.0010*** | 0.0008** | 0.0012*** |
| | (0.0004) | (0.0004) | (0.0004) | (0.0003) | (0.0003) | (0.0003) |
| Capital account openness | −0.0650*** | −0.0640*** | −0.0707*** | −0.0060 | −0.0042 | −0.0051 |
| | (0.0103) | (0.0108) | (0.0110) | (0.0081) | (0.0080) | (0.0079) |
| Size*Institutional constraints | 0.1156*** | | | 0.0642 | | |
| | (0.0162) | | | (0.0358) | | |
| Size*Political globalization | | 0.0080*** | | | 0.0152*** | |
| | | (0.0023) | | | (0.0045) | |
| Size*Green-growth | | | −0.0017 | | | |
| | | | (0.0026) | | | |
| Size*Left–right | | | | | | −0.0198*** |
| | | | | | | (0.0045) |
| Economic conservatism | 0.0052* | 0.0027 | 0.0027 | −0.0001 | −0.0002 | −0.0008 |
| | (0.0026) | (0.0026) | (0.0027) | (0.0020) | (0.0020) | (0.0019) |
| $R^2$ | 0.7516 | 0.7311 | 0.7240 | 0.9487 | 0.9497 | 0.9505 |
| *N* | 479 | 479 | 479 | 479 | 479 | 479 |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | Yes | Yes | Yes | Yes | Yes | Yes |
| SE | OLS | OLS | OLS | OLS | OLS | OLS |

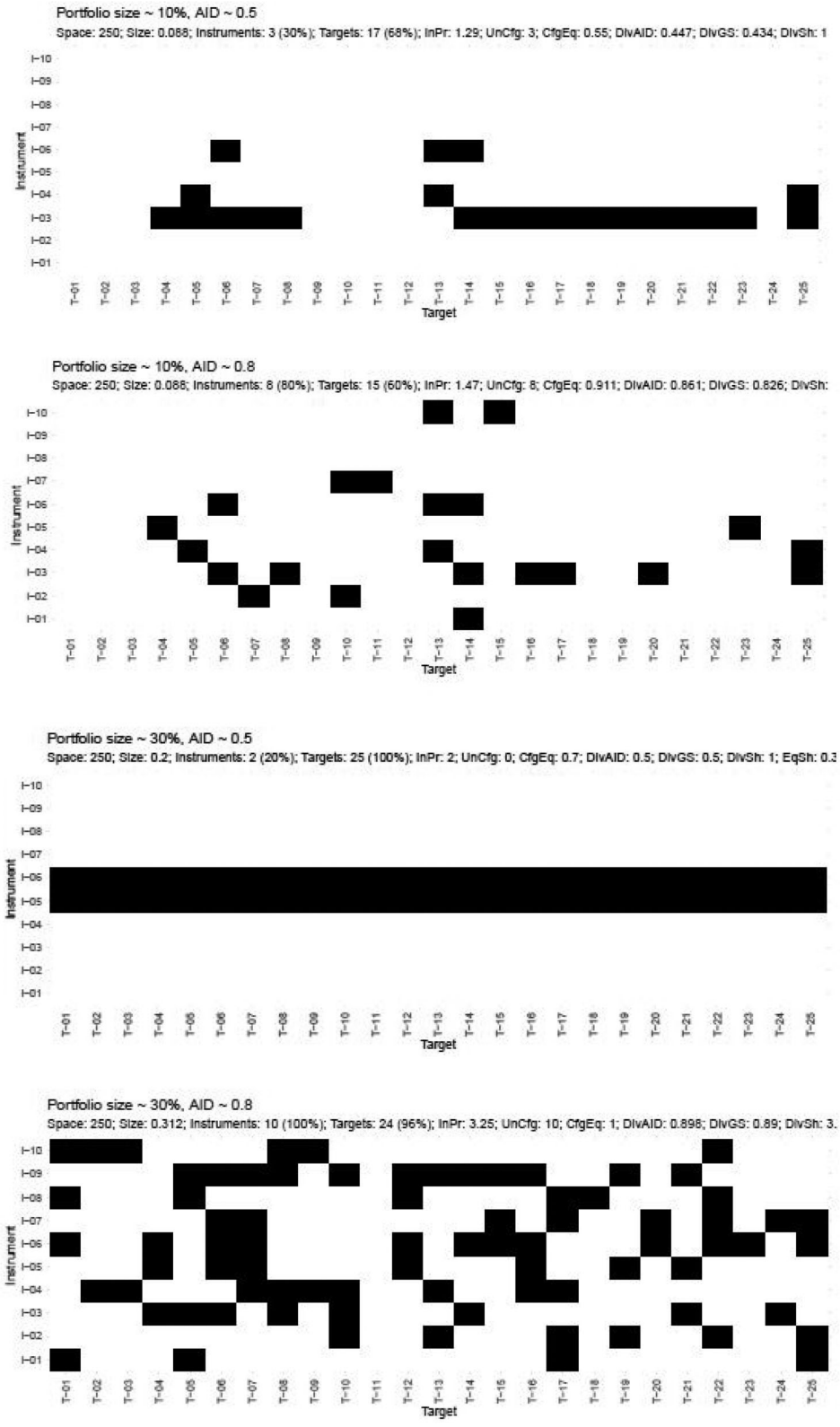


**FIGURE A1** Exemplary policy portfolios of different size and complexity

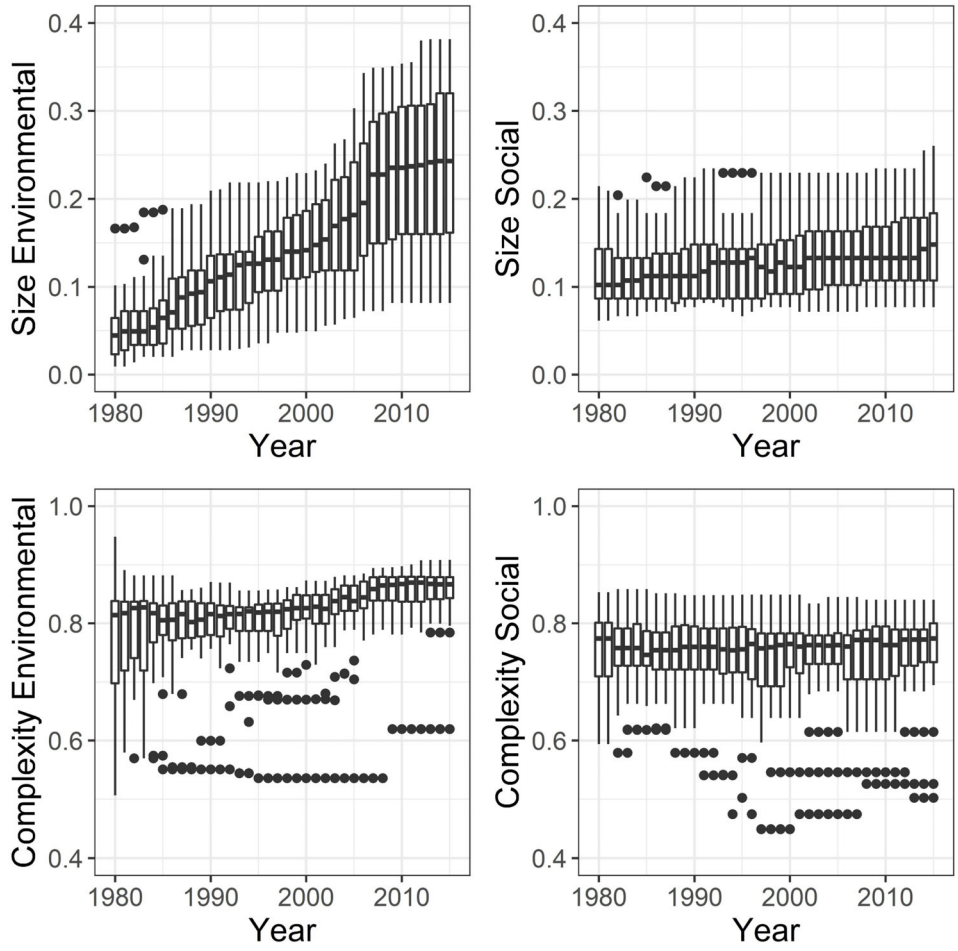


FIGURE A2 Development of size and complexity, 1980–2015

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