
Chapter Four

Political economy of climate change policy in the transition region

Implementing climate change policy poses difficult political economy challenges. What political economy dimensions are the most important? The type of political regime, the relative strengths of the carbon-intensive and low-carbon industry lobbies, the role of the independent media and civil society agents, and the public's broader political and economic preferences are all considered. Chapter 4 also analyses the interaction between the main political economy factors and the domestic climate policy outcomes, and demonstrates the political economy approach with case studies from Estonia, Russia and Ukraine.



4

Political economy of climate change policy in the transition region

Despite the advances made over the past two decades, many transition countries continue to be among the most carbon-intensive economies in the world. Where emissions have come down, it has primarily been the result of economic restructuring and reform (see Chapter 1). Only a few countries in the transition region – mainly those that have joined or are aspiring to join the EU – have begun to implement dedicated policies and measures to address the carbon emissions of their economies and thus contribute to global efforts to mitigate climate change.

Yet, as shown in Chapter 3, much stronger dedicated policies will be needed if transition countries are to reduce their emissions in line with international commitments. Consequently, it is critical to understand why the transition to a low-carbon growth model currently seems to be at best a marginal policy issue, and at worst actively opposed by politicians and the public in most of the transition region.

This chapter therefore focuses on the link between the structure of national economies – and hence the incentives that individuals and firms face with regard to their energy consumption choices – and aggregate national carbon output: the process of formulating the climate change mitigation *policies and measures* adopted by national governments to alter the incentives that shape individuals' and firms' energy choices. In particular, this chapter attempts to explain the key drivers of climate policy in the transition region, in order to highlight areas in which domestic and international policy-makers committed to combating global climate change can have a substantive impact on reducing carbon emissions in the transition region.¹

The chapter draws on the larger literature on the political economy of reform to propose some hypotheses about the key obstacles to climate change policy in the EBRD region, sketching a stylised model of climate change policymaking in the region. It then asks whether there are in fact substantive differences between climate change policy in the transition region and the rest of the world, focusing on the following questions:

- When controlling for the differences between the transition countries' economies and the economies of the rest of the world, is climate change policy in the transition region less ambitious than in the rest of the world?

- Why is there not more ambitious climate change policy in the transition countries? What are the major political economy obstacles to the adoption of more ambitious climate policy in the region?
- Does the extensiveness of climate policy vary significantly across the transition countries? If so, what political economy factors might explain that variation?

How climate policies come about: a political economy approach

Why do some countries adopt ambitious climate change policies while others do not? The literature on the political economy of policymaking and reform suggests four sets of factors that are likely to be important. These relate to the international context, the structure of government, the degree of political accountability, and the characteristics of interest groups.²

First, the international context will affect how governments approach climate policy. The making of such policy can be thought of as a two-level interaction.³ At the upper level, the world's governments interact strategically, each seeking to benefit from the global climate change regime while reducing their costs. Since there is no international authority with strong sanctioning power, this can be considered a "game" of voluntary contributions to a public good: climate stabilisation.⁴ At the lower level, climate policies are formulated and implemented within each country by national governments once the international level is settled.

While the international bargaining game is important, this chapter focuses on the domestic level. We take international agreements as given and ask why some governments do far more than others to rapidly concretise and implement their international commitments. Under international agreements such as the Kyoto Protocol, countries do pledge to meet certain carbon-reduction targets. These pledges then serve as background to the game of domestic policymaking.⁵

Domestic policymaking depends in the first instance on the structure of government. Governments differ in the number of institutional veto players – or actors whose agreement is necessary for policies to be enacted – that they contain.⁶ This depends on whether the parliament consists of two chambers, each with strong powers; whether there is a president; and whether the constitution is federal in the sense of granting veto-power over central policy to regional governments or their representatives. In addition, it will depend on the number of parties in the ruling coalition, since defection by a coalition member can preclude a bill's passage. The more veto players there are and the more divergent their views, the more difficult it is to change policy. One veto player, the agenda setter, gets to make the proposals to which other veto players respond. Hence, the identity of the agenda setter will also affect what policy is chosen.

The motivation of these veto players depends on the degree of political accountability. In democracies, parties and individual politicians in the government have reason to take into account the views of their constituents. The more responsive the democracy,

¹ In this chapter we use the terms 'climate change policy' and 'climate policy' interchangeably. Unless otherwise specified, we use these terms to denote policies designed to *mitigate* climate change (and thus global warming), as opposed to policies for *adaptation* to the impacts of climate change.

² See Roland (2000) for a general treatment of the politics of economic reform in transition countries.

³ See Putnam (1988). For an application of the two-level game approach to climate policy, see Kroll and Shogren (2008).

⁴ The literature since Olson (1965) has shown the outcome of such games to be far less determinate than originally thought. Many equilibria are possible, depending on the detailed structure of the game (see for example Bagnoli and Lipman 1989, Bergstrom, Blume and Varian 1986). But for some simple functional forms and assumptions, Olson's conjectures are confirmed. Most importantly, the public good is often undersupplied relative to the social optimum.

⁵ We do, nevertheless, consider empirically whether membership in the EU is associated with more active climate

the more the preferences of the electorate will matter. The degree of responsiveness will depend on the electoral rules, but also on the degree of media freedom, which affects the accuracy and amount of information available to the voters. The ability of voters to extract accurate information from the media and other sources will depend on their level of education.

Finally, the characteristics of interest groups will also affect the outcomes of domestic policymaking. In part, the landscape of interest groups will simply reflect the underlying economic interests in the society, associated with the inherited economic structure. However, particular interest groups will be better organised in some places than others for historical reasons. Classic contributions to this literature suggest that the outcomes of policy will reflect the set of pressures – or bids – from competing interest groups.⁷ Chart 4.1 outlines the relationships among these key actors, who drive the formation of climate policy by governments (represented as G1, G2 and so on).

Thinking about policy interactions in this way suggests a number of reasons why one country might pursue climate policy more actively than another. First, some countries are more dependent on carbon-intensive industries than others. If the income of the majority of the electorate depends on such industries, then one might expect democratic politicians to resist reforms that would threaten the livelihood of their constituents. If the benefits of developing clean industry exceed the costs of retiring heavy polluters, the voters could in principle be compensated. However, promises to do so may not be credible.

Even if the majority of voters do not depend on carbon-intensive industry, the carbon-intensive industry lobby can still achieve political influence disproportionate to the share of votes it can mobilise, as long as it is well organised. Thus, a strong presence of high-carbon industries may result in the effective blocking of reform.

However, other interest groups and issue-oriented lobbies such as environmental non-governmental organisations (NGOs) may balance the pressures of carbon-intensive industry, informing both the public and politicians about the benefits of climate policy.⁸ Low-carbon industries may lobby for policies that support their activities.

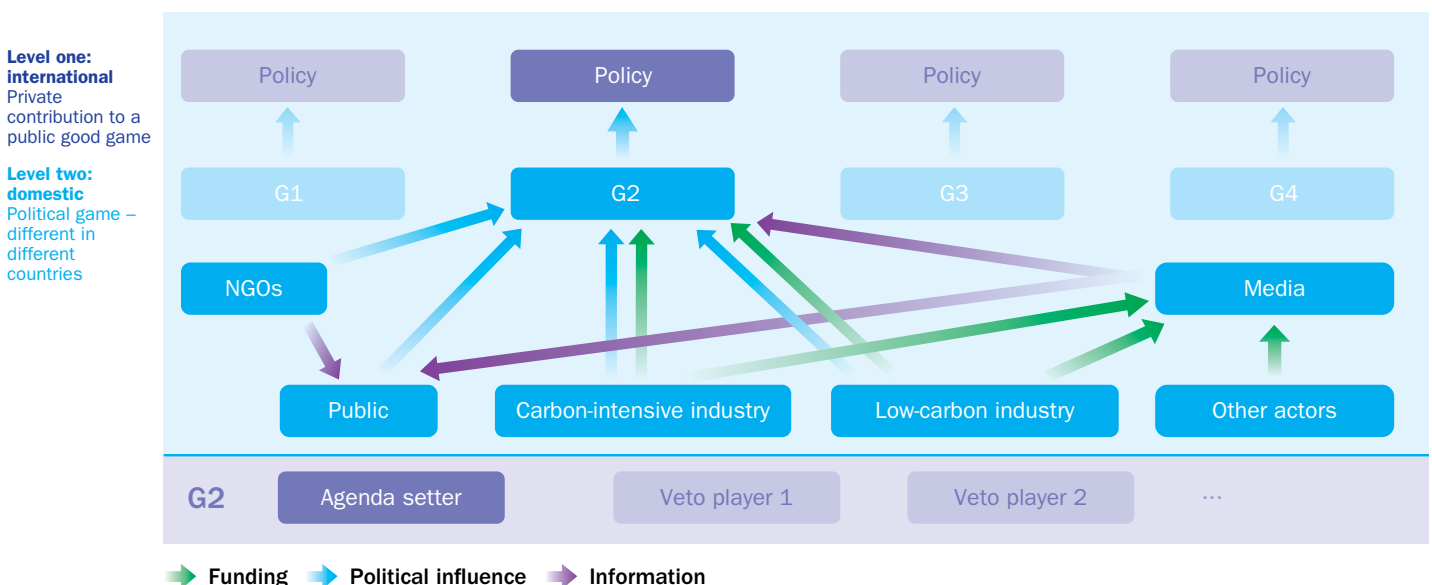
Indeed, the battle over climate change policies will in part be a battle of ideas. Supporters and opponents of climate policy will seek to inform – and sometimes to misinform – both the public and politicians on the causes of climate change and the costs and benefits of mitigation. Given this, a lot may depend on the sophistication of the general public – which in turn depends on the level of education – and on the extent to which the media are free and motivated to pursue the truth rather than to represent corporate or government interests.⁹

Public beliefs will also be shaped by history. In many transition countries, an abundance of fossil-fuel reserves coupled with an energy-intensive and wasteful industrial structure tends to be associated with a widespread assumption that energy use is less costly to society than it actually is. This may be another reason to expect slower reforms in countries where the energy-intensive sector is larger.

If the government is not democratic, then the paths of influence will tend to go directly from interest groups to government actors, with less influence by the public along the way. If the energy-intensive industry is well organised, it may succeed in blocking the implementation of climate policy commitments that benefit the public but are costly to entrenched interests.

The nature of the political regime may affect reform in one other way: by determining the time horizon of policy-makers. Preventing climate change has potentially huge long-term benefits, but also large short-term costs. If leaders are focused on winning the next

Chart 4.1
Stylised model of climate policy formation



policies. The norms and extra scrutiny associated with EU membership could plausibly motivate governments in the accession countries to demonstrate their commitment to the European approach.
⁶ See Tsebelis (2002).
⁷ See Olson (1965), Becker (1983), Grossman and Helpman (1994).
⁸ See, for example, Botcheva (1996).

⁹ See Snyder and Ballentine (1996) for a discussion of the battle of ideas – and the need to regulate free speech effectively – in the development of ethnonationalism in the post-communist region.

election (as in a democracy), or on avoiding an imminent coup (in an unstable autocracy), their regard for the future may be lower than that of the broader society. By contrast a (well-informed) autocrat who expects to remain in power for 20 years might take the threat of global warming more seriously.¹⁰

As should be clear from this discussion, most of the macro-variables likely to affect climate policy – democracy, press freedom, even the relative size of carbon-intensive industries – may have conditional or even conflicting effects. How economic structure, the extent of democracy and other factors influence countries’ performance in climate change mitigation is therefore an empirical question. This is the subject of the following sections.

Measuring climate change policy

To understand the likely factors driving poor emission outcomes in many transition countries, it is important to understand to what extent and in which ways climate change policy in the transition region is substantively different from that adopted elsewhere in the world. However, while a number of international measures of climate change *outcomes* (such as emissions or carbon-intensity data) exist, there is no internationally comparative measure of climate change *policies and measures*. Policies and measures are based on, and embodied in, laws and institutions. We therefore constructed a globally comparative index: the Climate Laws, Institutions and Measures (CLIM) Index, or CLIMI.

Comparing the quality and depth of climate policies, measures, laws and institutions across a wide range of countries is no simple task. First, the range of government policies and measures that can influence climate change is vast.¹¹ It is therefore necessary to select, *ex ante*, from the set of government policies and measures those that are most effective in reducing carbon emissions and therefore mitigating global climate change.

A second major methodological problem relates to the availability of reliable data on climate change policies and measures that are comparable across countries. While there are a large number of country studies on the quality of individual countries’ climate

change policies, there are no available cross-country comparative assessments of climate change policies with global coverage.

We therefore chose to use the most systematic information on countries’ climate change mitigation policies and measures available: National Communications to the United Nations Framework Convention on Climate Change (UNFCCC). The National Communications include detailed accounts of climate change adaptation and mitigation policies and measures adopted by national governments. All countries that ratified the Kyoto Protocol are required to submit National Communications. Developing countries submit National Communications only periodically, whereas developed economies (those listed in Annex I of the Kyoto Protocol) submit one every year.

Since 2005, 93 governments have submitted National Communications to the UNFCCC. In addition, in order to capture the largest and fastest growing emitters, we also include China, India, the Republic of Korea and South Africa, which all submitted National Communications prior to 2005, as well as the two missing transition countries, Azerbaijan and Turkey.¹²

There is an obvious benefit to using the National Communications: governments have a clear incentive to report all their climate change policies – or even to exaggerate them. To prevent misreporting based on exaggeration, the relevant policies were cross-checked with existing databases of climate change policies (such as the IEA and Climatico¹³), using national legislation as well as expert and UNFCCC country focal point consultations.

The components of the CLIM Index follow the standardised structure of the National Communications, which was designed to highlight the most important areas of climate change mitigation policies and measures. The CLIM Index therefore has 12 constituent variables grouped into four key policy areas:

- **International cooperation:** how quickly a government ratified the Kyoto Protocol and whether it developed institutional capacity to participate in the flexible mechanisms and host projects under Joint Implementation (JI) or the Clean Development Mechanism (CDM).¹⁴
- **Domestic climate framework:** this includes broad climate change laws and targets, and levels of institutional engagement in climate change (ministerial, independent committee and so on).
- **Sectoral fiscal or regulatory measures or targets:** these include targets and regulations in each of the sectors identified in the reports of the Intergovernmental Panel on Climate Change, apart from waste, as detailed in Table 4.1.
- **Cross-sectoral fiscal or regulatory measures:** these include carbon taxes and emission-trading schemes.

Most variables are scored on a 0/0.5/1 basis, apart from CDM/JI and Kyoto ratification. The policy areas, variables, scoring and weighting used in this analysis are reported in Table 4.1.¹⁵

Table 4.1
Components of the CLIM Index

Policy area	Policy area weight	Variable	Score	Sub weight
International cooperation	0.1	<i>Kyoto ratification</i>	0 to 1	0.5
		<i>JI or CDM</i>	0/1	0.5
Domestic climate framework	0.4	<i>Cross sectoral climate change legislation</i>	0/0.5/1	0.33
		<i>Carbon emissions target</i>	0/0.5/1	0.33
		<i>Dedicated climate change institution</i>	0/0.5/1	0.33
Significant sectoral fiscal or regulatory measures or targets	0.4	<i>Energy supply / renewables</i>	0/0.5/1	0.3
		<i>Transport</i>	0/0.5/1	0.13
		<i>Buildings</i>	0/0.5/1	0.07
		<i>Agriculture</i>	0/0.5/1	0.13
		<i>Forestry</i>	0/0.5/1	0.17
		<i>Industry</i>	0/0.5/1	0.2
Additional cross-sectoral fiscal or regulatory measures	0.1	<i>Cross-sectoral policy measures</i>	0/0.5/1	1

¹⁰ Even the public may tend to overweigh the immediate future relative to the distant future in ways that are “time inconsistent” (O’Donoghue and Rabin 1999). However, we see no obvious reason why such tendencies would be more pronounced in some countries than others. For an application to the political economy of climate policy, see Hovi, Sprinz and Underdal (2009).

¹¹ For example, minimal energy-efficiency standards in residential building regulations can have a significant impact on carbon emissions, whether or not the consequence is intended. More broadly, Chapter 1 demonstrated that economic reforms associated with the transition process have had a substantial impact on emissions, even though the emissions consequences were not intended.

The CLIM Index thus offers a comparative assessment of the extensiveness and quality of climate change mitigation legislation, policies, measures and institutions in 95 countries around the world.¹⁶ The Index includes all countries in the EBRD region and the EU, all large developing countries, many least developed countries and small island states, covering 91 per cent of global emissions and 73 per cent of the world's population.

Importantly, the Index does *not* include an assessment of outcomes, implementation quality or adaptation measures. Thus, it is possible that emissions may be on a rising trend in countries that have a high score on the CLIM Index. For example, China's industrial growth puts pressure on emissions, but its mitigation policies (which limit emissions that would not have occurred anyway) are increasingly ambitious. Thus, CLIMI measures the policies that countries *have adopted* to mitigate climate change, but does not provide an assessment of the quality of implementation of those policies. Instead, it relies on an assessment of the extensiveness of policy measures. Finally, CLIMI looks only at climate change mitigation; it does not look at either adaptation or broader environmental policies, which are likely to have different political economy mechanisms from those we identify.

Table 4.2 report the results of the CLIM Index. Box 4.1 sketches out the key differences between the CLIM Index and the Index of Sustainable Energy (ISE), which was presented in Chapter 3.

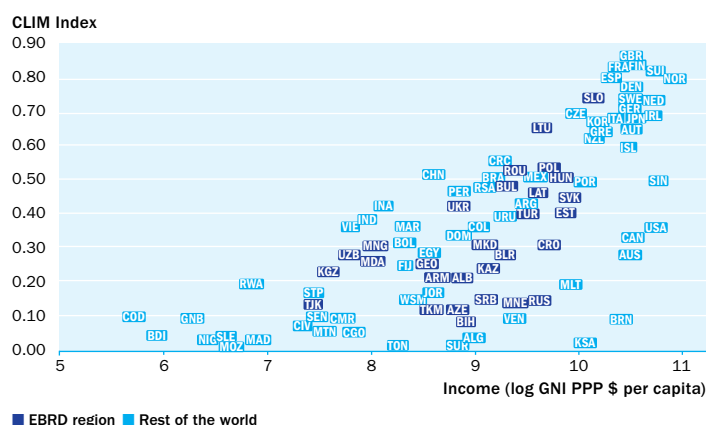
The countries that score best on the CLIM Index tend to be northern European countries, mostly EU member states. The countries that score lowest on the CLIM Index tend to be low-income countries, predominantly located in sub-Saharan Africa, which have little pressure to reduce their relatively low emissions and low state capacity. Indeed, there is a clear correlation between

countries' per capita income and the adoption of good climate change policies, as highlighted in Chart 4.2.

There is little correlation between countries' vulnerability to climate change and the adoption of climate change mitigation policies and measures. This reflects the fact that the countries most vulnerable to climate change tend to contribute little to the problem and hence focus their efforts on adaptation rather than mitigation.

There is significant variation among the transition countries, highlighted in dark blue in Table 4.2. Slovenia leads in 9th place globally while Bosnia and Herzegovina, ranked 83rd globally, lags

Chart 4.2
Correlation between per capita income and the adoption of good climate policies



Source: EBRD, World Bank.
Note: Data for 2007.

Table 4.2
Results of the CLIM Index

Rank	Country	CLIMI	Rank	Country	CLIMI	Rank	Country	CLIMI	Rank	Country	CLIMI
1	United Kingdom	0.801	25	Poland	0.496	49	Canada	0.316	73	Tajikistan	0.134
2	Finland	0.787	26	Mexico	0.486	50	Bolivia	0.296	74	Montenegro	0.133
3	France	0.783	27	China	0.485	51	FYR Macedonia	0.293	75	Turkmenistan	0.115
4	Switzerland	0.770	28	Hungary	0.483	52	Croatia	0.290	76	Azerbaijan	0.108
5	Spain	0.758	29	Singapore	0.468	53	Mongolia	0.288	77	DR Congo	0.091
6	Norway	0.749	29	Portugal	0.468	54	Egypt	0.267	78	Venezuela	0.090
7	Denmark	0.722	31	Brazil	0.464	55	Australia	0.265	79	Senegal	0.088
8	Sweden	0.701	32	Bulgaria	0.457	56	Belarus	0.262	80	Guinea Bissau	0.087
9	Slovenia	0.698	33	South Africa	0.456	56	Uzbekistan	0.262	81	Bahrain	0.086
10	Netherlands	0.691	34	Peru	0.437	58	Moldova	0.247	82	Cameroon	0.084
11	Ireland	0.667	35	Latvia	0.433	59	Georgia	0.238	83	Bosnia and Herzegovina	0.081
12	Germany	0.665	36	Slovak Republic	0.422	60	Fiji	0.233	84	Mauritania	0.071
13	Belgium	0.660	37	Indonesia	0.402	61	Kazakhstan	0.226	85	Cote d'Ivoire	0.064
14	Czech Republic	0.653	38	Argentina	0.401	62	Kyrgyz Republic	0.214	86	Congo	0.049
15	Austria	0.641	39	Ukraine	0.398	63	Armenia	0.201	87	Burundi	0.037
15	Italy	0.641	40	Estonia	0.383	64	Albania	0.199	88	Madagascar	0.029
17	Japan	0.636	41	Turkey	0.381	65	Malta	0.183	89	Niger	0.025
18	South Korea	0.629	42	Uruguay	0.369	66	Rwanda	0.182	90	Mozambique	0.023
19	Lithuania	0.615	43	India	0.358	67	United Arab Emirates	0.159	90	Saudi Arabia	0.023
20	Greece	0.608	44	Vietnam	0.345	68	Jordan	0.156	90	Algeria	0.023
21	New Zealand	0.602	45	Colombia	0.340	69	Sao Tome and Principe	0.143	93	Suriname	0.016
22	Iceland	0.561	45	United States	0.340	70	Samoa	0.142	93	Sierra Leone	0.016
23	Costa Rica	0.517	47	Morocco	0.339	71	Serbia	0.139	95	Tonga	0.011
24	Romania	0.497	48	Dominican Republic	0.319	72	Russia	0.134			

¹² For these two countries, we used a large number of sources to obtain the information that is normally provided in the National Communications. See Teytelboym and Steves (2011) for a description of these data sources.

¹³ See Climatico Policy Monitor Baseline Report 2010; IEA Climate Change Database (<http://www.iea.org/textbase/pm/index.html>).

¹⁴ See Dolsak (2009).

¹⁵ Detailed explanations of the variables can be found in Teytelboym and Steves (2011), in which sensitivity analysis shows that the arbitrary choice of weights is justified as the ranking is usually preserved.

¹⁶ We exclude Liechtenstein, Luxembourg, Monaco and San Marino.

Box 4.1 Comparing the ISE and the CLIM Index

The CLIM Index assesses only the extensiveness of policies adopted, and only in the particular area of climate change mitigation, and is global in scope. The Index of Sustainable Energy (ISE) assesses sustainable energy more broadly, including both policies and outcomes, and focuses primarily on the transition region.

Chart 4.1.1 plots the transition countries' scores on the ISE versus their scores on the CLIM Index. As one would suspect, the two indices correlate. This is not surprising because sustainable energy policies are also measured in the sectoral component of the CLIM Index. Most policies that promote energy efficiency and renewable energy also contribute to national efforts to mitigate climate change. Sustainable energy is reinforced through effective climate change mitigation measures. In addition, ISE has a climate change component, which may drive the correlation.

However, there are also important differences between the two indices. First, the CLIM Index has significantly broader country coverage, which allows us to make inferences about the determinants of individual aspects of climate change policy-making in the global context. Furthermore, the broader sample allows us to assess whether the relationship between the drivers of climate change mitigation policy have any regional specificity – and whether the transition countries are somehow “different” from the rest of the world in this regard.

Second, unlike the ISE, the CLIM Index does not combine policies and outcomes, focusing solely on climate change policies and measures.

Third, the CLIM Index assesses the existence of laws and regulations “on the books” as well as the existence of climate change institutions; it does not assess the effectiveness of those laws, regulations or institutions. This is important for understanding the political economy mechanisms underlying the adoption of mitigation measures, which are likely to be different from the political economy mechanisms underlying the adoption of, for example, energy-efficiency regulations. The CLIM Index therefore makes it possible to assess the impact of these policies and measures on actual carbon-emission outcomes.

Lastly, the CLIM Index covers all of the sectors of the economy that contribute to greenhouse gas (GHG) emissions – not just the energy sector. This is important for many developing countries, where the energy sector is not the largest contributor to GHG emissions.

well behind even the Commonwealth of Independent States (CIS) countries. Not surprisingly, the new EU member countries in Central and Eastern Europe and the Baltics (CEB) all score in the top half of the Index, although Estonia scores relatively poorly – worse than Ukraine, which leads the CIS countries by a large margin.

The remainder of the CIS countries are located within the third quartile globally, reflecting in part their energy-intensive economic legacies, but also a political economy setting that has not been conducive to effective climate change policies over the past twenty years. As Chart 4.2 shows, these countries have implemented significantly fewer climate change policies than would be expected given their levels of per capita income.

In the following section we explore in more detail the underlying drivers of the adoption of climate change policy – and the explanations for the relatively poor performance of the CIS countries in this regard.

Determinants of climate change policy

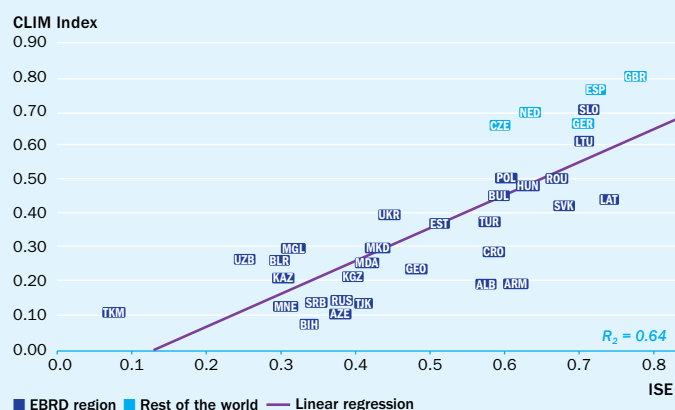
The CLIM Index can be used to analyse the relationship between climate change policies and measures – the outcome of interest – and the various aspects of the stylised model of climate policy-making outlined above. However, the stylised model by necessity oversimplifies what are in reality complex, and in many cases country-specific, political processes and decision-making calculi.

In the real world, some governments will be constrained by overwhelming public opposition to carbon-reduction policies – regardless of the hard economic facts – while in other countries the tide of public opinion will leave political leaders with little choice but to implement policy measures that are economically painful in the short run. In some countries, the influence of the carbon-intensive industry lobby will be channelled via opaque means or personal relationships, while in other countries the debate between carbon-intensive and low-carbon industries will take place in the public arena with open engagement by civil society and the independent media.

Given this complexity, we estimate a reduced-form statistical model, based on six major factors that the political economy literature identifies as likely to drive public policy on climate change:

- Public knowledge of the threat represented by climate change.** Given the extent to which the government responds to public pressure, one would expect public knowledge of climate change to lead to stronger policies. The data used to measure this are taken from a 2009 Gallup poll, conducted in 175 countries, which asked people whether they see climate change as a threat, how much they know about climate change, and whether climate change is caused by human activity or is a natural phenomenon. However, because the public's understanding of climate change, as revealed in the survey, will itself also be influenced by national climate policies, so-called instrumental variable techniques will be required to understand this link (see below).
- The level of democracy.** Democratic political systems are designed to transmit popular concerns and priorities into the policy-making process. In democratic countries where public

Chart 4.1.1
The CLIM Index versus the ISE



Source: EBRD.
Note: Latest rankings.

knowledge of climate change is high, one would expect climate policy to be ambitious. In contrast, if the public is opposed to climate policy because it may harm short-term economic prospects, democratic political systems may inhibit the adoption of ambitious policy in this area. Therefore, the direct effect of democratic systems on climate change mitigation policy could be either positive or negative. We employ the widely used Polity IV regime characteristics dataset for the year 2007 to measure the level of democracy.

- **The strength of the carbon-intensive industry lobby.** The political weight of the carbon-intensive industry lobby is simultaneously the most important determinant of climate change policies and measures, and the most difficult to measure. For the purpose of this analysis, the share of carbon-intensive industries – manufacturing, mining and utilities – in each country's Gross Domestic Product (GDP) was used as a rough proxy.
- **State administrative capacity.** Once political leaders have announced a course of policy action, the stated intention may or may not be translated into state policy. This will depend, at least in part, on the administrative capacity of the bureaucracy to draft regulations and laws, and submit them for legislative and executive approval. This factor is only implicitly addressed in the political economy literature, but might be important. Countries with strong democracies, free media and weak carbon-intensive industry lobbies might nevertheless have weak climate change policies because of insufficient capabilities to design and implement such policies – much less enforce them, an issue not dealt with in this chapter. The simple average of the World Bank's "Government Effectiveness" and "Regulatory Quality" Governance Indicators for 2007 was used to measure state administrative capacity.
- **Per capita and total CO₂ emissions.** There are two possible ways that per capita or total CO₂ emissions might affect climate change policy adoption. On the one hand, the countries with the highest CO₂ emissions per capita tend to be the highest income countries who have historically generated the most atmospheric carbon, and who are therefore expected to reduce their emissions more than countries with lower per capita CO₂. On the other hand, in countries with higher per capita CO₂ emissions, it is likely that introducing aggressive carbon emission-reduction targets will be resisted more fiercely by both individuals and

firms. Countries that have lower total emissions may be more reluctant to cut emissions because their contribution to climate change is small and hence any decrease in emissions will only have a negligible effect on global emissions. We therefore test empirically what kind of impacts per capita and total CO₂ emissions have on the adoption of climate change policy.

- **International commitments.** In all countries the nature of internationally negotiated carbon emission-reduction targets will play a role in domestic leaders' and polities' cost / benefit deliberations on climate change policy innovation. We therefore control for ratification of the Kyoto Protocol, as well as the size of the emission-reduction target to which Annex I countries committed themselves. In addition, the most binding international commitments are entailed by membership in the EU, which we control for using a dummy variable in the regressions. We also use a dummy variable to test whether being a transition country has a significant effect on the adoption of climate change policy once other variables are controlled.

The determinants of public opinion on climate change

As mentioned above, the observed correlation between public knowledge of the threat posed by climate change and better climate policy could reflect causal effects in both directions. Better knowledge of the causes of climate change could both influence, and be influenced by, climate change policies. To see whether public information affects climate change policies, it is therefore important to focus on cross-country differences in public knowledge that are driven by factors unlikely to be influenced by climate policies, and that do not influence policies independently. Three possible factors are considered in this context:

- **Levels of tertiary education.** Higher levels of tertiary education produce a more sophisticated population, which is likely to be better informed about the scientific evidence on climate change. We use the latest data available from the World Bank's World Development Indicators.
- **Freedom of the media.** Independent and critical media play a crucial role in assessing and disseminating scientific findings, particularly in such vital areas as climate change. A free media is a key factor in shaping public understanding of climate change. We use Freedom House's Freedom of the Media index for 2007 for this issue.

Table 4.3
Determinants of knowledge of anthropogenic climate change

Dependent variable	Climate change a threat		Some knowledge of climate change		Much knowledge of climate change		Global warming caused by humans		Global warming has natural causes	
	A	B	C	D	E	F	G	H	I	J
Education	0.019	0.051	.208***	.184***	.345***	.338***	.146***	.180***	-.340***	-.394***
Media freedom	0.029	0.153	-.149***	-.210***	-.190**	-.291**	-0.068	0.028	.319***	-0.046
Vulnerability	-.386***	-.330***	-0.011	-0.032	0.411	-0.447	-.441***	-.416***	.711**	.763***
EU		0.08		-0.031		-.215*		0.064		-.596***
EBRD region		-.250***		.143**		0.061		-.202***		.363***
Number of observations	71	71	83	83	83	83	81	81	81	81
R ²	0.23	0.33	0.6	0.62	0.54	0.55	0.27	0.37	0.32	0.43

- **Vulnerability.** If a country is vulnerable to climate change, the population is more likely to be aware of climate change in general and its causes in particular. For this variable, we use the Climate Change Vulnerability Index 2011 compiled by Maplecroft, a risk analysis and mapping firm.¹⁷

Table 4.3 reports the results of the regression of various aspects of public opinion on climate change, as found in the 2009 Gallup poll, on the three independent variables listed above. The coefficients indicate whether countries with, respectively, a higher degree of education, more media freedom, and a greater vulnerability to climate change were more likely (positive coefficient) or less likely (negative coefficient) to agree with the statements described in the column headings.

As model A in this table illustrates, when controlling for the average level of education and for media freedom, the perception of climate change as a threat is driven almost entirely by a country's actual vulnerability to climate change.¹⁸ Model B shows that the coefficient on a "dummy variable", which takes the value of 1 if a country is in the EBRD region and 0 otherwise, is negative and significant. This means that for similar levels of education, media freedom and vulnerability to climate change, the public in EBRD countries is significantly less aware of the threat posed by climate change than people in the rest of the world.

Models C-F show that people in countries with more widespread tertiary education and greater media freedom are more likely to state that they have knowledge of climate change. Countries' actual vulnerability to climate change has no significant effect here. In contrast, models G-H suggest that that awareness that global warming is caused by humans depends on education and country vulnerability, while media freedom makes no difference in this context. For similar levels of education and country vulnerability, this awareness is significantly weaker in the transition countries than in the rest of the world (model G).

The same pattern is visible in the inverse question (models I-J): people in more vulnerable countries and countries with more tertiary education are less likely to believe that global warming is a natural phenomenon. Controlling for levels of education and

vulnerability, this belief tends to be less prevalent in EU countries and more prevalent in EBRD countries.

Political factors in climate change policy adoption

We now turn to this chapter's core question: what political economy factors drive the adoption of climate policy? We employ the two-stage least squares (2SLS) regression approach. This enables us to address the problem of reverse causation outlined in the preceding section and therefore make causal statements about the impact of public knowledge on climate change policy.

In the first stage, a regression along the lines of models G and H in Table 4.3, pooling the respondents who believe that global warming is caused by human activity, is used to construct predicted values of knowledge of climate change across countries. This constitutes a measure of climate change knowledge that is not influenced by climate change policies. In the second stage, this constructed variable as well as the remaining potential determinants discussed at the beginning of the section are then used to investigate the causes of cross-country variations in climate change policy. The results of this second stage regression, using the CLIM Index as the outcome variable, are presented in Table 4.4.

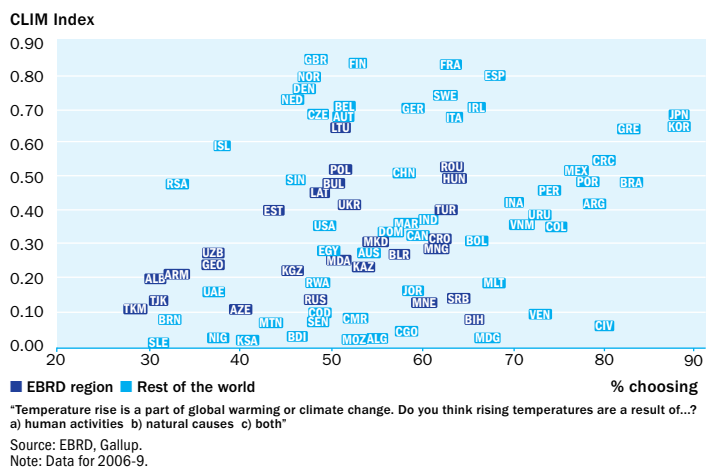
Model A shows that popular knowledge of climate change is positively associated with the adoption of more extensive climate change policies and measures, controlling for international commitments and per capita CO₂ emissions. This is illustrated graphically in Chart 4.3, which shows that countries where a larger proportion of the population believe that climate change is anthropogenic tend also to have more ambitious climate policies – and hence to score better on the CLIM Index.

Table 4.4 also shows that, controlling for international commitments and CO₂ emissions, democracy and state administrative capacity are not significant influences on climate change adoption. State administrative capacity is a significant predictor of active climate change policies only when Kyoto commitments and per capita CO₂ emissions are excluded from the regressions.

Table 4.4 Instrumental variables (2SLS) regression results

Dependent variable	Global Index of Climate Change Policies and Measures					
	A	B	C	D	E	F
Model						
Knowledge of climate change	3.012***	2.213*	2.254***	2.082**	2.087**	2.248**
Democracy		0.218	-0.230	-0.133	-0.0441	-0.156
Carbon intensive industry size			-0.687**	-0.730**	-0.942**	-0.871***
State administrative capacity			1.002**	0.682		0.562
Kyoto Protocol target	-2.319**	-2.119**			-2.806***	-2.708**
CO ₂ per capita	0.237*	0.196*		0.0990	0.223**	0.139
Total CO ₂ emissions	-0.0313	0.0168	0.0695	0.0501	0.0414	0.0453
EU	0.161	0.630**	0.389*	0.390**	0.430	0.393
EBRD region	0.315	0.294	0.494**	0.371*	0.148	0.307
Number of observations	75	71	77	71	71	71
R ²		0.326	0.411	0.440	0.459	0.434
Instrumented	Knowledge of climate change					
Instruments	Media Freedom, Level of Education, Vulnerability					

Chart 4.3 Knowledge of climate change and the CLIM Index



¹⁷ We are very grateful to Maplecroft for sharing the aggregated results of their Climate Change Vulnerability Index 2011 with us for this analysis.
¹⁸ The Maplecroft Climate Change Vulnerability Index is scored on a 1-10 scale, with 1 representing extreme vulnerability and 10 representing no vulnerability.
¹⁹ The empirical finding that democracy is not a significant determinant of climate change policy adoption is

consistent with the theoretical argument by Aumann, Kurz and Neyman (1983) that voting is irrelevant for pure (non-exclusive) public goods when resources are privately owned.
²⁰ While democracy and state administrative capacity are not significant, we leave them in as control variables to be sure that we are accurately capturing the effects of knowledge, the carbon-intensive industry lobby, per capita emissions and EU membership on climate change policy.

Similarly, models C and D show that EU members are significantly more likely to adopt climate change policies than non-EU members – until Kyoto Protocol commitments are controlled for.¹⁹ Thus, Kyoto targets are of overriding significance for predicting cross-country variation in climate change policies, followed by EU membership and state administrative capacity.²⁰

It is perhaps surprising that the level of democracy does not drive the adoption of climate change policies and measures, once we control for the other factors that influence the climate change policy-making process, including popular awareness of climate change. As we argued above, democratic political systems are intended to transmit popular concerns and priorities into the policy-making process. In the area of climate change policy-making, this appears not to be the case.

Perhaps the most important finding from this analysis is the strength of the carbon-intensive industry lobby as a factor holding back climate change policies (see in particular models E and F). This is illustrated in Chart 4.4, which plots countries' carbon emissions per tonne of CO₂ against their scores on the CLIM Index.

The final regression result, model F, summarises the main results from the analysis. Controlling for all other policy-influencing factors, including countries' CO₂ emission-reduction targets under Kyoto, reveals several findings:

- Popular knowledge of climate change is a powerful driver of climate change policy adoption. This is a very robust result. For every one per cent increase in public knowledge of the anthropogenic causes of climate change, there is a 2.25 per cent increase in countries' score on the CLIM Index.²¹
- The relative size of the carbon-intensive industry is significantly and negatively associated with climate change policy adoption.
- There is no clear evidence that the state's administrative capacity (at least as measured by the World Bank indicators) matters: states with low administrative capacity are just as likely to adopt climate change policies as states with high administrative capacity.

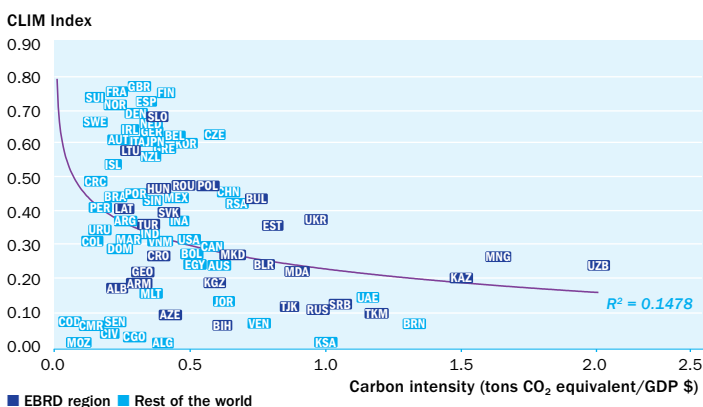
- EU member countries tend to adopt more assertive climate policies than non-EU members, although this effect is much less significant than countries' adoption of emission-reduction targets under the Kyoto Protocol.
- After taking account of these factors, climate change policies in transition countries do not appear to be different from those in the rest of the world.

This last conclusion – that the drivers of climate change policy in the transition region are the same as the drivers of climate change policy in the rest of the world – gives cause for optimism that the Soviet legacy of energy-inefficient production can be overcome, in time, through the appropriate reformulation of economic and fiscal incentives in the transition economies. However, the empirical relationships identified so far offer only limited guidance on how to achieve this.

The role of international commitments such as emissions targets in incentivising subsequent domestic policies suggests that there is a role for leadership in reformulating incentives. However, it is much more difficult to say how lobbies representing carbon-intensive sectors can be weakened, or public awareness can be developed. Factors such as level of education, vulnerability to climate change, and media freedom tend to evolve only very slowly over time. Press freedom can change more quickly – for instance, after coups or popular uprisings – but such events are relatively rare. None of these factors can explain the rapid acceleration in the adoption of climate change policies that has occurred over the past decade in many countries.

To unravel some of these more complex causal relationships – and in particular, to try to understand what provokes changes in governments' policy responses to the challenge of climate change in the transition region – we now turn to three case studies: Russia, Ukraine and Estonia. We focus in particular on the nature and role of veto players in those countries' political systems, and the ways in which these veto players have either blocked or facilitated the adoption of progressive policies to mitigate climate change.

Chart 4.4
Carbon intensity correlated with the CLIM Index



²¹ Thus, for example, if the level of public knowledge of climate change in Ukraine increased to the level seen in Italy, Ukraine's score on CLIMI would increase by 52 per cent – to be on par with New Zealand.

Case studies: climate change policy in the transition region

In this section we look in more depth at the domestic political landscape in three countries – Russia, Ukraine and Estonia – with very different economic structures, and levels of energy intensity of production. We specify who the key veto players are for each country – based on both *de jure* constitutional provisions and *de facto* sources of political authority – and where their ideal points on climate change policy lie. This requires judgments about the relative influence of different industries over various government institutions, for example the executive branch, upper and lower houses of parliament and so on, which we relate to the “carbon-intensive industry lobby” measurement used in the statistical analysis. We also highlight where carbon-intensive industries have formed a political coalition with the public (and perhaps the media) and those where the low-carbon industries are in coalition with the public (and perhaps the media).

We then identify the range of policy outcomes that all veto players would consider an improvement over the status quo, factoring in collective action and incentive problems at the international level. We identify within this range the point most preferred by the agenda setter, and then see how accurately this predicts the actual policy outputs of the different countries.²² The relationships outlined in Chart 4.1 above are specified for each of these three countries in Charts 4.5.1-4.5.3.

Key veto players

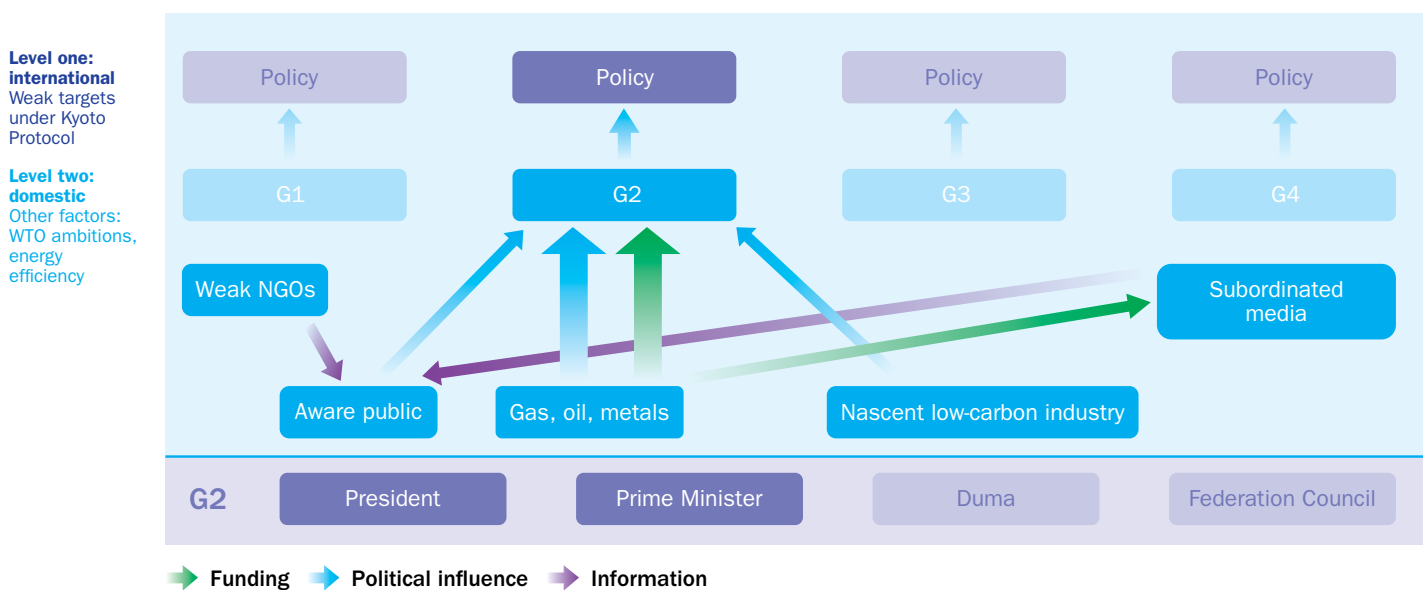
The Russian Federation today is a strong presidential republic in which the parliament has come to play a subordinate role. President Dmitri Medvedev and Prime Minister Vladimir Putin wield most of the political power and set the agenda for virtually all legislation. The lower house of parliament, the *Duma*, is dominated by the pro-Kremlin United Russia party, which is led by Mr Putin and supports most – if not all – of the government’s legislative initiatives.

However, the Russian political system has evolved significantly over the past decade, altering the number and position of both official and unofficial veto players. Until the election of Mr Putin to the Presidency in 2000, the other major veto players included both the *Duma* and the upper house of parliament, the Federation Council. Until the early 2000s, Russia’s regional governors also held situational veto player roles, as they were able to block the effective implementation of federal law at the regional level.

Since the abolition of direct elections for regional governors in 2004, they have become significantly less influential in this regard. The veto player landscape in Russia underwent another major shift in 2008 when Mr Putin transferred from the presidency to the premiership, thus *de facto* strengthening the government’s veto player role. In short, there are currently in practice two veto players – the President and the Prime Minister – both of whom have agenda-setting power. The veto power of the President is mostly limited to the literal veto he can place on legislation, which can be overturned by a two-thirds majority.

Like Russia, Ukraine has gone through two major shifts in the constitutional distribution of political power over the past decade, which have resulted in a shifting kaleidoscope of veto players in the Ukrainian political system. Prior to the Orange Revolution of 2004, Ukraine was a strong presidential republic in which the President was the main agenda setter as well as the most powerful veto player. From 2006, when constitutional amendments took effect, Ukraine became a mixed presidential-parliamentary republic, in which the legislative branch acquired a number of executive functions, and the government and parliament became influential veto players in their own right. However, the new constitution also blurred the political prerogatives of the legislative and executive branches, resulting in a *de facto* multiplication of veto players across all branches of government, including the judiciary, which came to be used by competing political elites as a veto device.

Chart 4.5.1 Relationship among key actors on climate change policy in Russia



²² This requires some subjective judgments but is nevertheless a powerful tool to illuminate the domestic political barriers to climate policy implementation.

With the election of Viktor Yanukovich to the Presidency in February 2010 and the subsequent formation of a pro-presidential government, these overlapping constitutional powers became less significant from a policy perspective as both executive and legislative branches were committed to the same policy agenda. In September 2010, the Constitutional Court ruled that the 2004 constitutional amendments were unconstitutional, which implicitly entails a reversion to the strong pre-Orange Revolution presidential regime.

In strong contrast to Ukraine, Estonia has a limited number of *de facto* veto players when it comes to climate change policy-making. Estonia has a unicameral parliament with a largely ceremonial Presidency, meaning that the government under the leadership of the Prime Minister is the agenda setter as well as the most influential veto player. However, unlike Russia, Estonia's electoral system is based on pure proportional representation (PR) with a large number of parties represented in parliament: while the electoral threshold is relatively high, at five per cent, the PR electoral system also provides an incentive to political party fractionalisation, and the two most recent parliaments (2003 and 2007) have had seven and six parties represented in them, respectively. This leads to often weak coalition governments and assigns opposition parties influential veto player roles in certain situations.

Media and civil society organisations

National television in Russia is largely subservient to the Kremlin when it comes to news coverage, almost never criticising the President or Prime Minister. Consequently, the media do not serve as an effective check on presidential or prime ministerial powers, and tends to funnel messages that have been pre-approved at the highest political levels to the Russian electorate. Although President Medvedev and Prime Minister Putin hold call-in shows with the public, most demonstrations against the government by

civil society organisations are suppressed. Thus, the media and civil society today are not significant veto players.

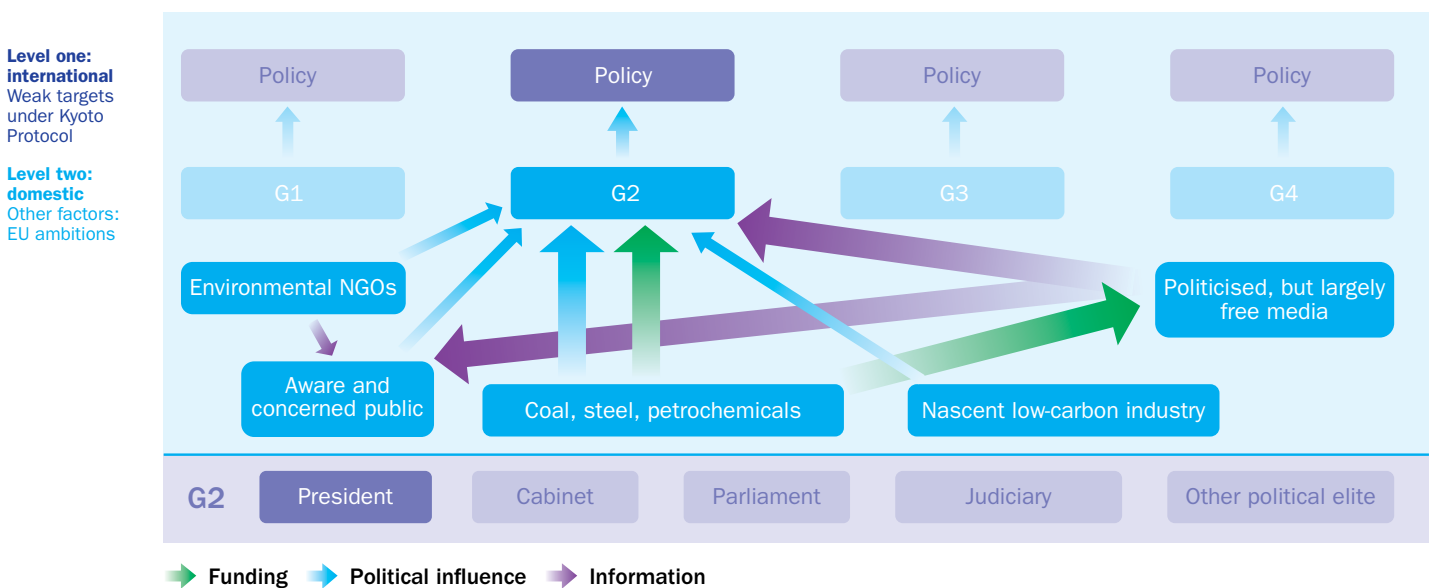
In contrast, the media in Ukraine are highly pluralistic and, particularly since the Orange Revolution, largely free from government interference. While oligarchic ownership has sometimes resulted in the extreme politicisation of some media outlets, these have not been necessarily in the service of the state or the incumbent political leadership. Likewise, in the aftermath of the Orange Revolution, campaigning civil society organisations, including environmental NGOs, rapidly grew in voice and effect within Ukrainian society. They have thus served as effective channels for the dissemination of information about the threat posed by climate change – and therefore the necessity for the Ukrainian government to undertake mitigating measures to help combat climate change.

The media in Estonia are pluralistic and independent, and a large segment is foreign-owned, which should facilitate the penetration of climate change knowledge into the social and political spheres. Moreover, the judiciary is both free from political interference and well-trained, which should likewise facilitate the adoption of EU norms and standards, including those related to climate change policy.

Public knowledge of climate change

Despite the political control of national television in Russia, almost half of all Russians (48 per cent) believe that global warming is a result of human activity. A similar proportion views it as a threat to themselves and their families. This may be caused, in part, by the extreme weather events that have affected European Russia in recent years, most recently in the form of record high temperatures and peat bog fires around Moscow in the summer of 2010. It probably also reflects the country's very high rate of tertiary education.

Chart 4.5.2 Relationship among key actors on climate change policy in Ukraine



The issue of global warming and the need for energy conservation, to the extent that it has been politicised at all, is one that President Medvedev has embraced. There is a growing awareness among the Russian population of the dangers of melting permafrost in Siberia and the vulnerability of Russian agriculture to climate change. Some attention has also been drawn to global warming issues by the popular environmental movement protests against a motorway through the Khimki forest near Moscow, as well as by previous campaigns to save Lake Baikal from industrial pollution.

The Ukrainian public is unusually well-informed about the threat of climate change; 78 per cent of the population claim to know something or a great deal about climate change and almost two-thirds worry that it might adversely affect their lives. The interesting mix of high public awareness and a relatively low CLIM Index score has produced the strongest disapproval of state policy in a worldwide sample of 80 countries: only 3 per cent of Ukrainians are satisfied with how seriously their government is taking climate change.

The Estonian public, by contrast with Ukrainians and to a lesser extent Russians, have the lowest public awareness of the causes and consequences of climate change in the EU.²³ Only 14 per cent of the population say that they know a great deal about climate change. Despite being a country with an extensive coastline, only 36 per cent of Estonians view climate change as a serious threat to their livelihoods. Nevertheless, the overwhelming majority of Estonians (83 per cent) do not believe that their government does enough to tackle climate change.

The carbon-intensive industry lobby

The carbon-intensive industry in Russia is extremely powerful, and has been since the onset of transition. Russia is the world's largest producer of natural gas and in 2009 became the largest exporter of oil. Moreover, the fossil-fuel industry has long enjoyed close links to the Kremlin: before his election, President Medvedev served as the

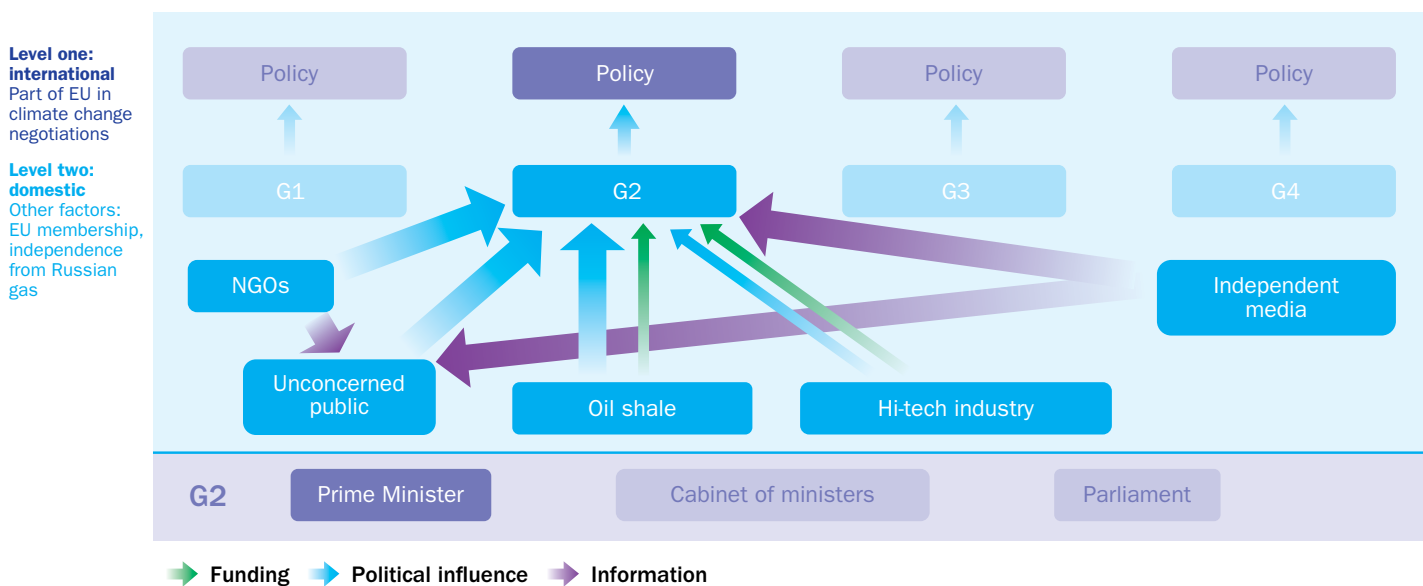
Chairman of Gazprom, a state-owned energy company. Igor Sechin, the current chairman of another state energy company, Rosneft, also serves as Deputy Prime Minister.

Russia's largest and most powerful financial-industrial groups (FIGs) have concentrated interests in the metallurgical and other carbon-intensive industry sectors: gold, potash, steel, nickel and other heavy industry, to name but a few. The owners of these FIGs exercise significant influence on government policy. In comparison, Russia's low-carbon industry is negligible – a fact that the Russian government has acknowledged and proposes to address through support for the development of high-tech industry, such as the Skolkovo high-tech innovation hub.

The carbon-intensive industry lobby is also very powerful in Ukraine, with FIGs in the steel, coal and petrochemical refinery sectors exerting major influence on a succession of governments, predominantly through financial support for political parties and party leadership campaigns, but also through the placement of their subordinates in government positions, and through their ownership of the media. Although these players have not enjoyed the same veto powers that their counterparts in Russia have periodically exercised, they have served nevertheless as powerful influences – and at times constraints – on successive governments' climate change policy preferences.

In Estonia, despite having a modern service-based economy specializing in high-tech and high-value-added sectors, the carbon-intensive industry lobby is very influential. The explanation for this is due, at least in part, to Estonia's post-independence wariness of reliance on imports of energy, particularly gas, from neighbouring Russia. This has led to the large-scale commercial development of oil shale deposits, of which Estonia enjoys large reserves and from which it extracts 90 per cent of its domestic fuel energy. The oil shale industry also employs about one per cent of the Estonian work force, is significantly increasing its political clout in climate policy.

Chart 4.5.3 Relationship among key actors on climate change policy in Estonia



²³ While 72 per cent of Estonians claim to know something about climate change, only 44 per cent believe that climate change is caused by human activity – the lowest level in the EU, followed closely by The Netherlands (46 per cent), Denmark and Norway (47 per cent).

Climate change policy outcomes

Over the past two decades various officials in the Russian government have been hostile to any climate change legislation, some even arguing that a warming climate might in fact benefit Russian agriculture and tourism. The Russian Academy of Sciences includes several notable global warming sceptics, such as Khabibullo Abdusamatov. Some of them, such as Yuri Izrael, act as senior policy advisers in the government and favour geo-engineering solutions to climate change, rather than mitigation measures that might damage Russia's natural resources sector.

Prior to the UNFCCC summit in Copenhagen in December 2009, President Medvedev signed the Climate Doctrine, which was largely a political gesture as it contained no emission-reduction targets. Russia, despite being one of the most energy-intensive economies in the world, will effortlessly meet its Kyoto obligations under Annex I due to improvements in carbon performance over the past decade and the collapse of industry in the early 1990s.

However, by February 2010 President Medvedev's public statements on climate change began to match those of his Western counterparts.²⁴ He called on Russian legislators to expand the Climate Doctrine in the context of several recent pieces of legislation and presidential decrees.

Two key factors prompted President Medvedev's rhetorical shift: growing concern among the Russian population about climate change-induced extreme weather events and strong moral pressure from the other G20 leaders for Russia to join in multilateral efforts to reduce global CO₂ emissions. However, as its weak CLIM Index score shows, the domestic political game in Russia has resulted in few measures being enacted to mitigate climate change. These are mainly related to energy efficiency (Russia's Energy Strategy plans to reduce energy intensity by 1 per cent annually until 2030) and international agreements. For example, there has been strong political pressure on Gazprom to reduce gas-flaring, and there was a much-publicised ban on incandescent light bulbs in 2009 (which will take effect in 2014).

Ukraine is the top-ranked CIS country on the CLIM Index, on par with the lowest ranked EU-member transition country Estonia and significantly better than neighbouring Russia, which has a similar reliance on energy-intensive industry. This is surprising, given that public knowledge plays a significant role in driving the adoption of climate change policy and that carbon-intensive industry lobbyists have a strong deterrent effect. The differences are the result of Ukraine's adoption of the "National Plan on Approaches for the Implementation of the Provisions of the Kyoto Protocol," adopted in August 2005, and the establishment of the independent National Ecological Investment Agency.

Furthermore, the Ukrainian authorities have enacted laws on renewable energy (including wind energy targets and feed-in tariffs) and energy efficiency. And unlike in neighbouring Russia, the Ukrainian "Reforestation and Afforestation Programme 2010-2015" contain ambitious targets for carbon capture using land use, land-use change and forestry mechanisms.

Despite having a political structure that appears *ex ante* to be conducive to the introduction of ambitious climate change policy, Estonia has been relatively slow in adopting climate change policies and measures over the past decade. This can be seen in the country's score on the CLIM Index, where it ranks the lowest among the EU-10 countries, on par with Ukraine and Turkey.

The explanation for this lies primarily in the strength of the oil shale industry lobby, although the markedly *laissez-faire* approach that has dominated Estonian economic policy since the collapse of the Soviet Union has also played an important role. These factors are not independent of course: it is no coincidence that in a country that is otherwise fully open in terms of trade, investment and media, an overriding dependence on a carbon-intensive energy source is correlated with low levels of public understanding of climate change – nor that lack of policy action on climate change is the result.

This is particularly reflected in Estonia's comparatively poor performance with regard to the development of a national climate change framework: the country has not developed any cross-sectoral climate change legislation or established a dedicated governmental climate change institution for binding GHG emissions targets. While Estonia has implemented the minimal sectoral targets in the energy, transport and industrial sectors as required by EU legislation, the national leadership has been reluctant to move beyond these preliminary steps to formulate and implement broader cross-sectoral policies that might affect the price-competitiveness of the domestic shale oil sector.

This is, in some regards, surprising: for the past twenty years Estonia has been a pioneer in high-tech and information technology sectors. With its strategic location on the Baltic Sea coast, plentiful wind resources, a fully integrated Baltic electricity network and a serious deficit in energy supply – particularly since the closure of the Ignalina nuclear power plant in neighbouring Lithuania – Estonia risks losing out on an opportunity to develop renewable technologies and energy generation, and preserve the country's energy independence from Russia.

²⁴ See Charap and Safonov (2010) and Andonova (2008).

Conclusions

This chapter takes a political economy approach to explain why some countries adopt climate change mitigation policies and measures while others do not. Statistical analysis, together with a qualitative assessment of climate change policy-making in three transition countries, leads to a series of important conclusions.

We found that the level of democracy alone is not a major driver of climate change policy adoption. This is important as it means that there is no reason to assume that countries with weak or even non-democratic regimes are unable to make significant contributions to the global challenge of reducing carbon emissions. Expectations of contribution to global climate stabilisation by a given country need not, therefore, be limited by the nature of its political regime.

We also found that public knowledge of climate change is a powerful determinant of climate change policy adoption: countries in which the public is aware of the causes of climate change are significantly more likely to adopt climate change mitigation policies than countries in which public knowledge is low.

Public knowledge of climate change, in turn, is shaped by a number of key factors, including the threat posed by climate change in a particular country, the national level of education and the existence of free media. Democracy and free media tend to go hand-in-hand – there are few countries with free media but no democracy. Thus, the conclusion that democracy *per se* does not determine climate change policy does not mean that certain key aspects of democracy, such as free media, are not important drivers of policy adoption.

The focus, therefore, should be to try and penetrate closed information landscapes in order to promote public understanding of the urgent threat posed by climate change. Societies that are denied access to information about contemporary global events and risks, such as climate change, are not capable of mitigating or adapting to those risks.

Information asymmetries in many transition countries, particularly in disseminating information about the threat of climate change, are caused partly by the predominant role of the extractive sectors and carbon-intensive industries in many countries in the region. Our global analysis found that the relative strength of the carbon-intensive industry is a major deterrent to the adoption of climate change mitigation policies and measures, regardless of the level of democracy or the administrative capacity of the state.

It is hard to overcome the powerful influence of carbon-intensive industries. In many countries in the transition region, these industries are the largest export earners, the largest employers and the largest contributors to the national tax base. It comes as no surprise, therefore, that these carbon-intensive industries influence governments' approaches to climate change policy. Moreover, the carbon-intensive industries are unlikely to be replaced by low-carbon industry in a short enough timescale to make a difference to mitigating global climate change.

Therefore, it may be necessary to alter the incentives that the carbon-intensive industries are given and facilitate their transition from lobbyists against carbon-efficient production to lobbyists in

favour of low-carbon production. Chapter 3 outlined efficient means to achieve this transition: energy price reform to encourage energy conservation, and new means of monetising carbon such as the introduction of international carbon trading mechanisms. These steps must be taken alongside broader improvements to the business environment to lower the cost of capital and thus make investment in long-term energy savings more attractive. Levers that will help governments implement such policies even in the face of initial domestic opposition include international emission reduction commitments, and information campaigns that increase public awareness of the long term benefits of climate change mitigation.

The pay-off for national political leaders in the transition region is clear: their national economies will gain a significant competitive edge in a global economy where there is increasing international pressure to reduce emissions. This in turn will enhance their political regime's domestic legitimacy. These steps – which are fully consistent with the “modernisation agenda” that has been laid out by the governments of many of the region's largest economies – would help to address the inherent economic weaknesses created by the lack of economic diversification and which were revealed by the recent global economic crisis.

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