Chapter 9

Carbon Markets, Values, and Modes of Governance

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Market Governance at the Interface of Competing Logics and Modes of Organization

Market governance of climate change is situated at the interface of two competing logics: universalistic governance predicated on technocratic norms, and the particularities of politics embedded in local cultures. Here, *local* refers to subglobal political units that are internally constructed as political entities. The issue of how global-level ideational frameworks are translated into local contexts has formed an important part of discussions on the green economy and environmental governance. A particular focus within these debates is whether and the extent to which green economy concepts and practices constitute a post-political project. The term “post-political” here references the idea that political problems surrounding environmental futures and resource allocation are removed from political discourse and recast in technical language (Garsten & Jacobsson, 2007; see also Chap. 4 by Stehr).

To this end, markets represent a universalistic or technocratic logic whose proponents contend that global problems can be solved with the application of one-size-fits-all solutions derived from science and economics (Bailey & Wilson, 2009). Interwoven into this logic is the idea that markets can be made to work more effectively for environmental and social equity through the recalibration of economic valuations aimed at making environmental investments more desirable not just on moral grounds or as responses to practical problems, but also because they offer profitable investment options (Newell & Paterson, 2010). This logic is reductionist,

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operates at scale, and is built from codified knowledge that exists independent of the particularities of location.

Treating climate change as a problem of internalizing economic externalities through the pricing of greenhouse gases gives authority to a particular set of economic principles. The technocratic prescriptions for resolving climate change rely on metrics to measure the effects of climate change, establishing quantitative baselines, pricing emissions that exceed quantity limits, and building a market-based governance institution to control emissions quantities through price. The role of the Intergovernmental Panel on Climate Change (IPCC) and United Nations Framework Convention on Climate Change (UNFCCC) is to build and disseminate the universalistic solution. Carbon markets will be more successful to the extent that they operate on a global scale, so proponents craft the architecture to achieve fluidity and permeate other spheres of economic activity. In theory, a global market would also allow emissions reductions to be achieved in the places of least cost by the actors who can most afford to pay for emissions reductions.

The universalistic assumptions underlying global climate policy are similar to the high-modernist logics in centrally planned state projects (Scott, 1998). These projects often fail because they are based on presumptions about the effectiveness of state coordination and do not take into account local or practical knowledge (*metis*) that arises from everyday life. Proponents of Community Based Conservation similarly argue that centralized conservation planning, by failing to engage local knowledge, sets development and conservation programs up for disaster (Goldman, 2003). The application of technocratic approaches to climate governance highlights both the universalistic assumptions about market financialization (cf. Hayek, 1945) that underlie the post-political consensus and how those holding them fail to appreciate the ways scale and place impact on political and economic behavior. The Kyoto Protocol's requirement for commoditization, standardization of measurement, and homogenization matches well with high-modernist ideology.

The Kyoto Protocol's authors set out the trade of certified emissions reductions as a principal policy response to climate change. The Protocol's framework thus positions commodification through the expansion of carbon trading systems as central to resolving the problem of climate governance. As institutions, carbon markets can be expected to transfer and develop with a degree of isomorphism. Indeed, to some extent the hope of building global governance through interconnection of regional schemes relies on the compatibility of markets in each jurisdiction. However, by focusing on market mechanisms, the Protocol's authors marginalize other policies (taxation, command-and-control, technology transfer) that may be more effective in some political economies (Knox-Hayes, 2012). Although governments have mobilized a primarily techno-economic fix to address climate change, this is not necessarily indicative of the solutions desired by various societal stakeholders (Owens & Cowell, 2011).

Furthermore, carbon markets must be translated from the global scale into the particularities of each operating jurisdiction. Here the universalistic logic encounters different sociopolitical and cultural governance logics and values operating on the ground. Variations in political-economic cultural contexts—understood as

socially established norms, rules, and expectations that define how social actors operate and interact (Katzenstein, 1996, p. 6)—play a key role in shaping how societies respond to global imperatives. Culture influences the conduct of economic interactions within specific societies as well as the role of economic processes in policy and society. As the markets are constructed, everything from the nature of the legislation that is developed, to the organizations used to operationalize the markets, to the way in which various polities respond to the idea of market-based governance, are affected. The dynamics on the ground affect not only the shape that the markets take, but also the ways in which they perform.

The variability in market form causes problems for efforts to establish climate governance arrangements that rely on universalistic assumptions about socioeconomic systems. Cultures are not monolithic, of course, and vary as the scale and location of analysis shift, and care is needed in drawing conclusions about the influence, causal or otherwise, of culture. Nonetheless, there is value in looking at the influence of culture at different scales as a means by which to draw attention to differences and the reasons for these differences. Moreover, by examining links between culture and climate governance we recognize that climate policy is fundamentally political in nature.

Another important point of analytical concern is the issue of scale. Subnational governments, nongovernment organizations, corporations and government agencies in “hybrid” (combining state and non-state actors), and transnational environmental governance networks play an increasingly important role in climate governance (Andonova, Betsill, & Bulkeley, 2009; Betsill & Bulkeley, 2007; Hoffmann, 2011). One of the effects of this dispersal of governance is a resistance to efforts to establish universalistic environmental governance arrangements as regional/local governments, businesses, and communities reinterpret governance concepts through the particular lenses of their beliefs, traditions, circumstances, and dilemmas (Krueger & Gibbs, 2010). The creation of standards and agreements through which carbon management occurs can similarly vary (Ocampo, 2011). As a consequence, the institutional landscape of carbon governance is highly variegated across initiatives, actors, and countries. The translation of international commitments into action remains reliant on and imbedded within territorially bound politics (While, Jonas, & Gibbs, 2010). Thus, this plurality of approaches can in part be seen as a response by the various actors involved in promoting and implementing the carbon governance to integrate—and potentially challenge—neoliberal capitalist attempts to fit environmental problems within prevailing political-economic paradigms (Pattberg, 2007; Redclift, 2012).

The organizational terrain of policy further complicates the carbon governance landscape. Specifically, political economic culture interacts with modes of network governance. Provan and Kenis (2008) provide a useful typology for mapping networks: participant-governed networks (shared governance), lead organization-governed networks (lead organization), and network administrative organizations (NAOs). These network governance types are informed by their position along two dimensions. The first addresses centralization. For networks governed internally by participant organizations, those that exhibit a centralized broker are classified as

lead organizations. Those in which governance is decentralized across participants are classified as shared governance. The second axis of classification deals specifically with centralized modes of governance. Here, the distinction lies between those that have a centralized broker that is internal to the network (lead organization) versus those in which the broker is an organization external to the network (network administrative organization/NAO).

Taken together, logics of governance and modes of governance represent two important axes along which climate policy can be mapped and assessed. In this chapter, we seek to assess how policy intersects with these axes and in the process provide a broad-based qualitative and quantitative assessment of how geographically specific sociocultural factors shape intersubjective understandings of markets in general and carbon markets in particular. To do so, we adopt a cross-national perspective, examining and evaluating the intersubjective meanings of carbon market formation drawn from interview data of market makers across the United States, Australia, China, the EU, Japan, and South Korea. In the next section, we address the role of technocratic norms, and in so doing provide an extensive overview of our methodology.

Technocratic Norms and Political Context

Methods of Analysis

Drawing on 245 interviews with actors from various institutions involved in climate policy and market development, including professional service firms, legal firms, and regulatory agencies in the EU, US, Australia, South Korea, China (including Hong Kong), and Japan, we utilize techniques from grounded theory to explore perspectives on market-based climate governance. The interviews were semi-structured to guide the conversations while allowing respondents to address topics they considered significant (Clark, 1998) and lasted between 45 min and 2 h. Individuals were asked about the nature of their firms, practices, network relationships, perspectives on climate policy and market-based governance, and the importance of various types of expertise in developing climate policy and markets. We then triangulated the responses with each other and with relevant policy and organizational documents.

We coded interviews to generate insights into the relationship between technocratic norms and politics in climate policy, and to identify attributes of market-based governance in each geographic region. We deployed two coding techniques. First, we treated the interview transcripts as data and analyzed them in a coding pattern from raw text to first-order concepts, and then to analytic categories (Eisenhardt & Graebner, 2007). Specifically, we coded two questions to generate insights into how market-based governance is perceived in each region: What are the advantages or disadvantages of using markets to govern climate change and what are the

opportunities and challenges of the creation of carbon markets? We used our analysis of these questions to gauge positive and negative associations of market-based climate governance, as well as to identify governance concepts that are positively associated with market-based governance in the form of opportunities and challenges.

Second, following Gioia (1998), we treated interlocutors as “knowledgeable agents,” people who know what they are trying to do and can explain their thoughts, intentions, and actions. This grounds the study in accounts of the informants’ experience (Gioia, Corley, & Hamilton, 2013). The knowledge provided by key informants informs our understanding of the ways in which each region has negotiated tensions between technocratic governance norms and place-specific politics. We have used anonymized quotations to support key observations and combine them with relevant policy, organizational, and press material where appropriate.

Coded Concepts of Market-Based Governance

Through the coding of the interview data, we identified seven prominent perceptions of the advantages and opportunities of carbon emissions markets (efficiency, technology investment and innovation, global scale, flexibility to participate, political viability, and capacity to reduce emissions) and six prominent disadvantages and challenges (reliance on governance cohesion, political uncertainty, technical complexity, time to translate, prevalence of economics, and intangibility).

Advantages and opportunities

The concept of *governance efficiency* refers to the fact that markets are a more efficient form of governance. Respondents often identify efficiency with the ability to resolve climate change using economic techniques that would not require significant behavioral changes, particularly by bringing about technological development. Similarly, the concept of *efficacy* is described as providing transparency for government and industries to make production decisions through the carbon price. There was an associated belief that the price is useful in identifying and distributing the “real” value of low-carbon production.

Some participants identified the benefits of markets as being associated with the *flexibility* they give various actors to participate in the governance of greenhouse gas emissions. Unlike taxes and command and control types of regulation (such as efficiency standards or renewable energy portfolios), the market generates a profit incentive and allows a range of organizations from banks to professional service firms to participate. Many individuals also expressed the belief that the market is more flexible as a governance mechanism in that it allows actors to pursue a variety of strategies to reduce emissions rather than having the government mandate a set course of action. For these reasons and others, participants also identified *political*

viability as an advantage of emissions markets. In many jurisdictions there is less political resistance to emissions trading than to other forms of governance. Some interlocutors argue that a market is the only palatable solution for industry. This is a popular perspective in the United States as well as in China, where there is considerable resistance to the idea of taxes.

The emphasis on *investment and innovation* reflects a belief that through the creation of a price signal carbon markets effectively distribute revenue to the “best” developers of technology. Respondents additionally identify the ability to *operate on a global scale* as a market advantage, suggesting that carbon markets can provide liquidity, and the potential for offshoring (of finance) and offsetting (of financial credits) in ways other governance mechanisms cannot. This argument primarily rests on the idea that markets are transnational and do not respect national boundaries, which stands in contrast to other approaches like command and control or taxation where the generative force of action lies firmly within states. Also note the emphasis of scale and how it is seen as generating ease and affordability. Finally, several respondents (thought fewer than might be expected) identify the ability to *reduce emissions* as an advantage of market-based governance. Not surprisingly, they view the pathway to emissions reduction through the lens of technological development rather than behavioral change. Participants express confidence that a price for carbon will give renewable energy technologies an advantage.

Disadvantages and challenges

Participants identify six primary disadvantages and challenges of market-based governance. Although markets have the ability to operate at the international level, participants identified *reliance on governance cohesion*, or the idea that markets need to operate according to common rules in order to be effective, as an associated disadvantage. As witnessed by the challenges in achieving binding targets under the UNFCCC, this is a major challenge for climate governance. Additionally, participants identify domestic *political uncertainty* as a major challenge, because carbon markets are derived from and reliant upon politics for their existence. Here the belief seems to be that carbon markets are efficient except for political contestation, which is thought to destabilize them.

In addition, participants identify the *technical complexity* required for markets to operate effectively. In addition to the basic rules and regulations of the capping of emissions and distribution of allowances, to be effective the markets require a system of standards and infrastructure to measure and monitor emissions as well as enforcement mechanisms for the actors under the cap. There is considerable technical complexity required to build such a system, and unless the policy details are correct, there is strong potential for the system to fail. Many interlocutors point to the early phases of the EU Emission Trading System (ETS) as an example of the technical complexity required to build an emissions trading system as well as what happens (e.g., price collapse) when the technical details are incorrect.

Associated with this concept is the idea that it takes *time to translate* markets into new jurisdictions and that they are a slower form of governance. The concept is particularly raised by participants in Asia, with recognition that to be effective, the markets not only have to be built to operate according to a technically high capacity, but that they must also be translated to fit different sociopolitical and cultural norms in the jurisdictions where they are being built.

One of the drawbacks identified is that markets give *prevalence of economics* over the environment and often achieve economic gains without environmental benefits. In particular, markets treat climate change as though it were purely an economic problem, with economic concerns. Many actors join the markets not to reduce emissions but to pursue the profit incentive. This concept is associated with concern that markets do not reduce emissions because of the inability to *price the intangible*. Here there is recognition that the absence of carbon dioxide is an intangible commodity, and considerable skepticism over the concept of additionality of offsetting (the requirement that allowances and offsets produce emissions additional to what otherwise would have occurred). The difficulty in pricing carbon dioxide and associated negative and positive externalities generates doubt as to whether emissions reductions are real.

We have summarized these concepts with exemplary quotes in Tables 9.1a and 9.1b (Knox-Hayes, 2016, p. 53). Quotes in the first section of the table exemplify universalistic conceptions of markets as solutions to climate change. The second section embodies counter-conceptions that underline the political nature of markets and doubts about their universality. Importantly, many of the comments in the second section of the table stress the role of scale and cultural difference in shaping how universal, technocratic norms are interpreted and applied, such as the difficulties of developing common global rules for carbon markets. The two sets of observations in turn provide a basis for synthesizing these cultural variances.

Comparisons Between East and West

We identified the coded concepts as common responses to the questions of market advantages/disadvantages and opportunities/challenges. Given that there were 245 responses to the data recorded, it was possible to do statistical analysis of the data to look for macro trends across the regions. In Table 9.2 we provide a count summary of the identified concepts according to location, dividing the region of residence into six categories: the United States, the European Union, Australia, China, Japan, and Korea (Knox-Hayes, 2016, p. 59). It should be noted that to maintain statistically comparable sample sizes, respondents from Hong Kong have been grouped into the China category. Hong Kong serves as one of the financial centers for the trade of carbon out of China, and these interlocutors were asked questions specific to the developing Chinese carbon markets. London was likewise coded as part of the EU. It is one of the financial centers of the EU ETS and respondents were asked questions specific to the EU ETS. Table 9.2 shows that neither conceptions of

Table 9.1a Summary of positive concepts of market governance from coded interview data

Concept	Manifestation in the data	Illustrative quote
<i>Advantages and opportunities</i>		
Governance efficiency	Markets are a more efficient form of governance. It is possible to have minimal impact on the operation of business and industry and still achieve environmental objectives because markets are efficient. Efficiency is often associated in the data with the belief in a carbon price to solve climate change by driving investment into clean technology. Market efficiency suggests that technical solutions rather than behavioral change will solve climate change. The market is perceived to be the ultimate driver of technical efficiency.	Cap and trade makes sure the things we take for granted, lifestyle, transportation, etc. are not affected. With the cap and trade approach the biggest benefit is the ability to resolve the problem while maintaining business as usual! Cap and trade helps lubricate energy transaction. With the cap and trade approach you drive up the price of coal and support renewables. You could burn coal 50 years from now with the price today. There is a huge shift in renewable and other areas. The market adjusts; that is the beauty of it. (Managing Director, Market Technology Provider, New York)
Efficacy of a carbon price	The carbon price provides the transparency for government and industries to make efficient production decisions. Unlike the price generated by a tax or command and control mechanism, a market price represents the “real” value of reducing emissions. Markets, and particularly market actors, provide the transparency and liquidity in the market to transmit the price as widely as possible. The efficacy of the carbon price is often identified in conjunction with issues of scaling up market activities.	The market provides a strong advantage of price transparency. There is liquidity in the market, which advantages everyone. They can do activities to manage their actions etc. That is why the banks are in this market, to create transparency and liquidity. (Environmental Products Team Leader, Multinational Petroleum Firm, London)
Technology investment and innovation	Through the creation of a price signal carbon markets effectively distribute revenue to the best developers of new technology. This is often described as a normative and objective process that allows the “best,” “brightest,” or most efficient to win. The perspective fits with the notion that markets provide individual justice in contrast to the social justice provided by governments.	That’s where you get your innovation and your development and your new ideas. If you incentivize the private community—What you are effectively doing with a market-based mechanism is you’re saying that the smartest person wins. And that’s what drives the way to innovation. Now that might be big corporates, it might be small one-man bands; it might be the next Google in the environmental world. You’re just incentivizing the smartest person at the table to be rewarded. And that’s all the market-based mechanism does. (Managing Director, Brokerage, Melbourne)

(continued)

Table 9.1a (continued)

Concept	Manifestation in the data	Illustrative quote
Ability to operate on global scale	Two issues stand out under global scale. The first is the perception that markets are capable of functioning on a global scale, where other systems of governance cannot. Global scale is often associated with liquidity and greater market capitalization. These are assumed to be positive attributes of markets. The other issue of scale is the ability to dislocate emissions reduction activities through offshoring and offsetting, presumably to places where least-cost reductions can be made.	It's part of the solution, and it's the only mechanism we have that can mobilize resources and allocate them at scale, at speed. (CEO, Carbon Aggregator, Sydney) The cost structure for emissions reduction in domestic are actually quite high that there may well be better opportunities for emissions reduction offshore in the initial years A tonne of carbon is a tonne of carbon. Whether the reduction is here or international, it shouldn't matter. (CEO, Business Council, Melbourne)
Flexibility to participate	The markets allow more individuals to participate because they are not specific only to the entities who have obligations under the cap. The markets generate a profit incentive and allow a range of organizations to participate in both the construction and operation of the market. Wide-scale participation is thought to be important to generating shared belief in the operation of markets, as well as making the markets function efficiently. The markets are additionally seen as a more flexible mode of governance; giving actors the flexibility to structure emissions reductions with the means they see best.	We appreciate cost reducing aspects of markets including flexibility and the opportunity to bring other players in. They link well and are adaptable systems that bring the cost effective emissions as well. Markets are valuable for reductions. For example with the US the market with offsets, unregulated international players can participate via offsets. It provides funds for others to get involved. (Senior Research Associate, Environmental Think Tank, Washington, DC) I think it's my personal opinion but the market approach has more advantage than recommending control, or carbon tax, or other options. That's what the research results said and that's what I think too. The company would have more flexibility to comply with carbon regulation if that's an Emission Trading Scheme rather than recommending control, or carbon tax. (Head of Climate Change Division, Accountancy, Seoul)

(continued)

Table 9.1a (continued)

Concept	Manifestation in the data	Illustrative quote
Political viability	Compared to other options like taxes and command and control regulation (energy portfolios, emissions standards, etc.), markets are more politically viable. This is in part because they operate with a profit incentive. Even if the results are theoretically comparable to those under a tax, individuals feel less penalized by a market system and that flexibility gives them greater tenure over the system. The approach also allows governments to popularize other associated green initiatives.	<p>Low-carbon, green-growth was the national agenda of the former government of President Myung-bak Lee. ETS and Carbon-tax were considered as regulation tools for GHG reduction, but because the ETS was more symbolic, representative and popular than carbon-tax, in the political aspect, they decided to introduce an ETS in 2012. The main reason was it could be a significant signal that all business entities must be part in developing green technology or patents for GHG reduction for new green market from K-ETS. (Climate Change Leader, Government Ministry, Seoul)</p> <p>There are a couple of advantages of carbon trading schemes. They're probably harder to implement, but they're not as much viewed as a tax. It's also an issue like in the US, because we don't like taxes. Instead of taxing, you do a carbon-trading scheme. Then I guess there's also the possibility of linkages you know with other carbon trading schemes. I mean that's definitely a big trend that we're trying to go towards. (Climate and Energy Policy Director, NGO, Beijing)</p>
Capacity to reduce emissions	Respondents express a belief that carbon markets reduce emissions. Faith in markets to reduce emissions is often attached to a technology pathway. Markets create a carbon price, which should drive investment in clean energy technology and generate emissions reductions. Associated with this perspective is often the belief that climate change is simply a problem of failing to price externalities.	<p>As a more widespread approach, the market approach drives down cost to society, and allows the private sector to seek out the least cost methods of reducing emissions. It allows and focuses the economy on finding the least cost emissions reductions and creates investments into new technologies. We are reducing emissions by putting a price on carbon capture as an externality. The market decides the price. If we had a 100 per tonne price, we wouldn't have a climate change problem. (Director, Carbon Asset Developer, New York)</p>

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Table 9.1b Summary of negative concepts of market governance from coded interview data

Concept	Manifestation in the data	Illustrative quote
Disadvantages and challenges		
Reliance on governance cohesion	To be effective markets need to operate according to common rules and standards. Many participants identify the construction of a cohesive system of governance (at various scales) as one of the major challenges to the operation of market-based governance of climate change. Here universal logics of efficiency, efficacy and global scale compete with the messy reality of implementing policy on the ground. Even if guided by a coherent universalist perspective, policy is transformed as it moves from region to region, leading to differences in outcome that can restrict the cohesion of markets.	I love carbon pricing and I love the notion of a budget and I love the notion of letting the free market determine the lowest cost way of doing it. Where we've been naive was that thinking the world would unite on a common set of rules. That was extraordinarily brave, and we have never done that on anything of any kind, ever. Why would this be different? We've built a system that was bound to fail from day one, which was a united global, common language. And if you just pull back for a moment, look at free trade and currency and everything else; they are geocentric, idiosyncratic, negotiated, debated. So why would carbon be any different? (Managing Director, Investment Firm, Melbourne)
Challenge of political uncertainty	Political uncertainty is associated with the fact that the markets are derived from and reliant upon politics for their existence. This is seen to be problematic both at the international scale, and in domestic politics, particularly in Australia. Respondents often express a belief that markets are efficient except for the political instability that underlines them. The efficacy of a carbon price, signaling low-carbon investment, only holds so long as the markets also have a long-term stable policy platform to underlie them.	The biggest problem in Australia with these market mechanisms is really the political uncertainty. Now we have a carbon price but you know of course today's carbon price is not what effects investments decisions it's the expected carbon price over the lifetime of an investment. And so, if half of your industry experts think the carbon price will be dead and buried in three years' time, and the other half thinks it will actually keep rising, then you've really got a problem for decision-making in investments, and that's what ultimately matters. (Professor of Economics, Sydney)

(continued)

Table 9.1b (continued)

Concept	Manifestation in the data	Illustrative quote
Technical complexity	To be effective, markets require considerable technical complexity to operate. Everything from the systems and technologies of monitoring, verifying, and reporting emissions to the rules and standards of how emissions markets operate must be built. There is considerable technical complexity and interlocutors express doubt whether the markets will function unless the technical details are correct. This is particularly a concern expressed among interlocutors in Asia. Many point to the example of the first phases of the EU ETS where lacking technical specificity (over allocation of credits for example) led to a price collapse. Additionally, from a bureaucratic standpoint, there is a sense that markets have a single correct form, and must be engineered to a correct standard in order to function effectively. This is at odds with the complexity and diversity of the types of industries that operate under a cap and require different standards and methodologies of reduction.	<p>The disadvantages are that it is very difficult to have a fair cap setting. That is the difficult part, very difficult, the allocation of allowances and emission are theoretically impossible, so there is room for lobbying, huge room for lobbying, which actually happened in the EU and there is plenty of evidence that such fair allocation of allowances is impossible. So it is a government failure. It is a perfect system if allocation is done fairly. However, it is in reality impossible to allocate fair distribution of our caps, of our allowances, so therefore, it doesn't happen today. (Manager Market Mechanism Group, Government Think Tank, Tokyo)</p> <p>The ability to speculate on price is not actually achieving reductions We are in the process of learning how we measure, how we verify the amount of carbon footprint and how we more importantly, how we estimate the capacity or capability of companies to reduce greenhouse gases. That is critical to calculate the allowance If you are a government, how can you put allowance to each company that has different instruments, different processes, and different businesses? (Managing Director, Consultancy Seoul)</p>

(continued)

Table 9.1b (continued)

Concept	Manifestation in the data	Illustrative quote
Economics takes precedence over environment	Climate change is treated as predominantly an economic problem. The solution of using markets to govern greenhouse gas emissions also creates an economic logic for solving the problem. While the profit motive brings participants into the markets, there is concern that the markets accomplish only economic and not environmental gains. Also present are concerns that economic logics of market governance take precedence over environmental concerns and benefits. The predominance of economics can be at odds with the need to generate material changes in order to reduce greenhouse gas emissions, and to transform energy supplies.	<p>I feel like there's a lot of enthusiasm for carbon trading, but not necessarily as much concern about whether the actual emissions reduction with normal impact would be there, and how do you ensure the integrity of it. Carbon trading, like any kind of stock trading bond trading, it's a profit incentive. And I think people are really looking at carbon trading as a profit, as a business. But I think before you get to that point, you need to go into these things about the institution and data, and all that. (Climate and Energy Policy Director, NGO, Beijing)</p> <p>We should focus on the market, of course, but we should focus on good market, or technological market. We are not focused on, I don't know, cap and trade system, with its financing, we don't think so. In order to reduce the CO₂ emissions, we have to improve the energy efficiency or we have to reduce the carbon intensity of the energy. Then, in order to realize these two things we need renewed technologies. Technologies are really the key to saving this planet. [Cap and trade] system will not be an incentive to make research and development because [companies] are just buying credits. It seems they do not have any material impact or any real impact on emissions reductions. (Vice Chairman, Industry Association, Tokyo)</p>

(continued)

Table 9.1b (continued)

Concept	Manifestation in the data	Illustrative quote
Time to translate	It takes time to build a market, and it particularly takes time to translate a market institution across socio-political boundaries. Many interlocutors, particularly in Asia, identified the time to operate as a drawback of the market system. They expressed the belief that to be effective the markets, while initially adapted from the model of the EU ETS, would have to be translated to take on different “cultural” norms and expectations. As part of this process, it is important that companies acculturate to the idea of market governance. Such a process takes more time than simply implementing a tax or even setting up command and control legislation.	The advantage and the disadvantage of this are because the emission trading is a totally new idea for China. So, we need a long time to develop this carbon market, to develop all the institutions that will be involved in this market, also the regulations and the regulators, or the governance of this market. It's like the stock market. The first challenge will be the registration of the permits of the market. We define the emission rights as a commodity rather than financial instruments due to the fact that in China the market is restricted, regulated by the financial security commission. That's one of the challenges we are facing at this moment. The second one is how to develop this new carbon market in China. We have to get the companies to accept the idea. We also need to develop the stakeholder engagement. (CEO, Exchange, Shenzhen)
Inability to price the intangible	There are challenges both in pricing carbon dioxide because it is an intangible asset, as well as inadequately pricing the associated positive and negative externalities attached to the carbon. The intangibility of externalities creates doubts as to whether or not emissions reductions are real. Associated with this concern is recognition that the value markets trade is a reduction in the range of social values that give meaning to environmental assets.	The disadvantages, I think, are some of the things that we haven't priced correctly over time—Ever—Are the hardest things to measure. And it's very, very difficult to include or to put a price on something that's difficult to measure For example, there might be local employment benefits if it's an indigenous project in the middle of Australia. There might be water quality or biodiversity benefits, which are hugely valuable in and of themselves but aren't—At the moment—Priced into the carbon market. So, we and other organizations around the world are currently trying to figure out how would you attract a price premium or place a value on these additional co-benefits. That's a market-based mechanism, and it's incredibly difficult and controversial. (Senior Associate, Consultancy, Melbourne)

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Table 9.2 Count summary of governance concepts by region

Advantages and opportunities					Disadvantages and challenges															
Efficacy of a			Technology investment and innovation		Ability for global scale		Capacity to reduce emissions		Reliance on governance cohesion		Challenge of political uncertainty		Technical complexity		Time to translate		Prevalence of economics		Inability to price the intangible	
Governance efficiency	caron price	Flexibility	Political viability																	
US	23	4	2	14	22	15	17	11	1	1	1	1	1	1	1	1	1	1	8	
Australia	25	21	0	7	3	1	6	11	2	0	0	0	1	1	1	1	1	1	6	
EU	9	14	1	6	17	3	23	4	1	0	0	0	1	2	2	0	2	1	1	
					213										96					
China	3	10	5	6	2	1	2	3	8	12	10	1								
Japan	5	3	4	1	0	0	1	1	9	8	15	4								
South Korea	2	1	3	2	2	0	0	0	9	7	2	1								
Total	270				57		189								93					

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cultural difference nor conceptions of the technocratic/political nature of markets are universally held, thus highlighting the fundamentally contingent nature of climate policy in different national contexts despite the underlying norms that inform it at the global level.

In total, the data contain 270 identifications (some participants' responses are coded for more than one concept) of positive constructs of market-based governance and 189 identifications of negative constructs. Additionally, over half of the respondents (139 out of 245) directly identify efficiency and or the efficacy of a carbon price as advantages of market-based climate governance. The overwhelming majority of positive responses regarding the utility of carbon markets give some validity to the notion of a post-political consensus around market-based climate governance. Some interlocutors voiced support for markets even when recognizing the difficulties involved in pricing environmental externalities:

[We] believe in a market-based instrument, a carbon price. That said, markets have a history of creating externalities and mispricing things that should have a price. So, I mean, creating a market to fix a problem that was caused by the market is ironic and I guess we understand that. But, we would say, yes, it's positive. I mean, how else can you possibly address environmental issues that are otherwise not a part of our daily economic and social life? (Senior Associate, Consultancy, Melbourne)

Surprisingly, however, only twenty respondents (8.1%) directly suggested that carbon markets have the positive benefit of reducing emissions. Many of these respondents suggested that the way in which a carbon price has a positive impact is by generating technological innovation and investment.

When the respondents are categorized as either Anglo/European (US, EU, Australia) or Asian (China, Japan, South Korea), differences in perspective are even more surprising. The respondents from Anglo/European countries produced 213 identifications of advantages and opportunities of market-based governance of climate change and only ninety-six disadvantages and challenges (a positive-negative ratio greater than 2:1). In general, respondents from these regions are much more likely to have a positive perspective of how the markets operate. In contrast, individuals from Asian countries are much more likely to have a skeptical perspective of the use of market mechanisms to govern climate change. Individuals from China, Japan, and South Korea generated fifty-seven identifications of advantages of market-based governance, in comparison with ninety-three identifications of disadvantages (2:3 positive-negative ratio).

We explore the reasons for the skepticism in Asia in greater detail below. In short, however, the differences between Anglo/European and Asian countries reflect underlying differences in beliefs regarding the role that markets play in governance, the role of different institutions and sources of authority in generating policy, as well as different aspirations and values. To better distinguish the nature of these differences, we statistically tested the significance of differences in responses across regions (Table 9.3).

Table 9.3 Correlation analyses of market constructs by region of residence

Advantages and opportunities					Disadvantages and challenges								
	Governance efficiency	Efficacy of a caron price	Flexibility	Political viability	Technology investment and innovation	Ability for global scale	Capacity to reduce emissions	Reliance on governance cohesion	Challenge of political uncertainty	Technical complexity	Time to translate	Prevalence of economics	Inability to price the intangible
US						0.15**	0.27***			-0.22***	-0.21***	-0.23***	
Australia	0.33***	0.22***	-0.12*			-0.12**			0.20***		-0.15**	-0.13**	
EU						0.28***		0.43***		-0.12*			
China	-0.23***			0.12*		-0.18***	-0.22*	-0.19***			0.20***	0.11*	-0.11*
Japan		-0.15**			-0.12*	-0.16***	-0.16*	-0.16**		0.20***	0.18***	0.41***	
Korea			0.18***	0.14**						0.46***	0.36***		

Note. *Significant at the 90% Confidence Interval, **Significant at the 95% Confidence Interval, ***Significant at the 99% Confidence Interval. Reprinted from Knox-Hayes (2016, p. 60). Copyright 2016 by Oxford University Press. Reprinted with permission

Statistical Analysis of Regional and Occupations Difference

We used logistic regression and correlation analysis to evaluate differences across the regions (Table 9.3) as well as across industry sectors (Table 9.4). As with region of residence, we coded occupational background to maintain statistically comparable sample sizes. We distinguished five categories: financial services (banks, brokerages, hedge funds, exchanges), professional services (accountancies, legal firms, news wire, consulting), industry (energy companies, manufacturing companies, project developers, industry associations), government (regulatory agencies, policy-makers, staffers, legislators), and NGOs (environmental advocacy, think tanks, academics).

We report statistically significant correlation coefficients in Table 9.3 (Knox-Hayes, 2016, p. 60) for region of residence tests and in Table 9.4 (Knox-Hayes, 2016, p. 61) for occupational sector analysis, and we tested responses from each category against all others. The results can be interpreted as follows: In Table 9.3, the positive 0.33 under efficiency for Australia signifies that compared to respondents in all other geographies, individuals from Australia are 33% more likely to identify governance efficiency as an advantage of market mechanisms to govern carbon emissions. The triple asterisk beside 0.33*** signifies that the difference is statistically significant at the 0.99% confidence interval. In contrast, the negative 0.23 in China's row under efficiency indicates that respondents from China are 23% less likely than respondents in all other geographies to identify governance efficiency as an advantage of market mechanisms.

Respondents in the United States are more likely to identify global scale and the ability to reduce emissions as advantages or opportunities of using emissions markets to govern climate change. In general, participants in the United States have a more positive perspective about the potential of market-based governance. There is strong belief in the utility of market-based governance in the US, which has clear linkages to the perspective that the markets can succeed in reducing emissions. The focus on global operation, particularly among individuals from the financial services industry, relates to logic that markets operate best at a global scale. Thus, carbon markets can be effective at a global level, and in the process would also displace some of the burden of reducing emissions from the United States, which is one of the largest emitters of greenhouse gases. Respondents from the United States are less likely to identify technical complexity, time to translate, and prevalence of economics as disadvantages of emissions markets. This fits with the generally neo-liberal perspective and lack of concern over economic or incentive-based regulatory mechanisms.

Australian respondents are more likely to positively identify governance efficiency and efficiency of a carbon price as advantages of market-based governance. This reflects the strong emphasis on technical competence in Australian governance. Across all sectors, respondents from Australia demonstrated a high degree of technical (particularly economic) competence. By contrast, Australians are less likely to identify flexibility and global scale as advantages of market-based governance. In

Table 9.4 Correlation analyses of market governance constructs by occupational sector

Construct	Advantages and opportunities				Disadvantages and challenges							
	Governance efficiency	Efficacy of a caron price	Political viability	Technology investment and innovation	Ability for global scale	Capacity to reduce emissions	Reliance on governance cohesion	Challenge of political uncertainty	Technical complexity	Time to translate	Prevalence of economics	Inability to price the intangible
Financial services		0.15**			0.16***	0.13*			-0.12**			
Professional service						-0.10*			0.11*			
Industry		-0.10*										
Government								0.12*				
NGOs							-0.10*					

Note. *Significant at the 90% Confidence Interval. **Significant at the 95% Confidence Interval, ***Significant at the 99% Confidence Interval. Reprinted from Knox-Hayes (2016, p. 61). Copyright 2016 by Oxford University Press. Reprinted with permission

general, the focus of Australians seems to be much more domestic, even if there is recognition that efforts to address climate change come from an obligation to be a good global citizen. With respect to disadvantages, Australians were more likely to identify the challenges of political uncertainty. This perhaps reflects the tumultuous political experience Australians have had with emissions trading. Finally, Australians are less likely to express concern over the time it takes to translate markets into local context, and less likely to identify the disadvantage of the fact that markets privilege economics over the environment (interview respondents across occupational sectors in Australia demonstrated a sophisticated understanding of, and comfort with, the application economics).

Respondents from the EU were much more likely to identify global scale as an advantage of market-based governance with a correlation coefficient of 0.28. Many respondents expressed the idea that climate change is a unifying policy because it cannot be addressed by any nation-state acting on its own. As such, it helps consolidate policy authority at the EU level. Furthermore, the EU has taken global leadership on the issue of climate change, which is a source of pride amongst policymakers and market makers. EU responses were also strongly correlated with the disadvantage of carbon markets requiring governance cohesion, with a correlation of 0.43. In line with the global focus, EU respondents acknowledge that to be effective markets must be international and interconnected, which requires a strong degree of governance cohesion that does not yet exist in the international system. The EU remains one of the strongest proponents for a binding agreement under the UNFCCC. Finally, respondents from the EU are less likely to identify technical complexity and time to translate as disadvantages of market-based governance. This aligns with the fact that the EU ETS was one of the first established systems as well as the fact that the EU, and particularly the Commission, has strong technical capacity.

Reflecting a divergence in values vis-à-vis other regions, Chinese respondents are less likely to identify efficiency, global scale, and the ability to reduce greenhouse gas emissions as advantages of market-based systems. The only advantage Chinese respondents are more likely to identify is political viability. Many interlocutors suggested that, despite the fact that the Chinese government uses many command and control measures for regulation, they are also concerned about minimizing unrest among industry and society. Markets are seen as a more politically viable approach to climate change than taxes or command and control. Chinese respondents are less likely to indicate governance cohesion as a negative aspect of market-based governance. Chinese emissions markets are in some ways more flexible because they are being tried in different regions with an experimental approach. This generates a more local focus.

The Chinese are also less likely to indicate the inability to price the intangible as a negative aspect of market-based governance. This may reflect the fact that China was the largest host country of Clean Development Mechanism (CDM) projects, and most concerns about pricing the intangible relate to offsetting in the CDM. Several respondents identified the large number of operating CDM projects as a reason the government should use markets rather than taxes or command and control to address climate change. Finally, respondents from China are more likely

to identify the time to translate and the preference for economics over the environment as disadvantages of market-based governance. The respondents were concerned that markets be better tailored to cultural expectations once they are scaled to the national level and begin to have greater effect on industry. They also expressed concern that the markets would be focused more on economic benefit (i.e., profit-taking), for although the environment is increasingly a concern in China, development is still the greatest priority.

In Japan, respondents express a far more negative perspective over emissions markets than in any other region. Japanese respondents are less likely to identify efficiency, technology innovation and investment, global scale, and capacity to reduce emissions as advantages or opportunities, and more likely to identify technical complexity, time to translate, and economic prevalence over the environment as disadvantages of the markets. The Japanese place strong emphasis on the need for technological development to resolve climate change, but express considerable skepticism that carbon markets work efficiently and effectively to generate environmental impact. There is also a recognition that Japan is culturally different from other regions like the EU, where markets have been trialed, and that it would take considerable time to develop a market approach that would work in Japan. To some extent, this is the solution the Japanese have identified with their Bilateral Offset Credit Mechanism/Joint Crediting Mechanism (BOCM/JCM). Finally, the responses from Japan are negatively correlated with concern over governance cohesion, which reflects the fact that there is a much greater domestic than global focus. For example, the Joint Crediting Mechanism is designed to allow each host country that partners with Japan to independently tailor the program to their needs.

Korean respondents are more likely to identify flexibility and political viability as positive advantages of market-based governance and more likely to identify technical complexity and time to translate as disadvantages. Several interlocutors suggested that the government tends to be focused on command and control, so markets would generate a welcome change. Additionally, as in Australia there is strong technical competence in Korea, where the ministries are very influential, and therefore a high degree of concern for the creation of technical policy. Korean respondents are more likely to see technical complexity as a challenge, in part because the carbon markets are managed by the ministries, particularly the Ministry of Environment and Ministry of Trade, Energy, and Industry, and treated as technical devices. Respondents also expressed more concern with the time it would take to translate and operationalize the markets.

With respect to the occupational sector (Table 9.4), there are only a few statistically significant differences among the groups. Unsurprisingly, individuals from financial services are more likely to identify efficiency, global scale, and reducing greenhouse gas emissions as advantages or opportunities of market-based governance and less likely to identify technical complexity as a disadvantage of market-based governance. Members of the financial services are among the strongest proponents of market-based governance and are comfortable with the technical requirements of structuring carbon as a commodity. In contrast, individuals from the professional services are less likely to believe markets have the capacity to reduce

emissions, and more likely to see technical complexity as a disadvantage. These firms also stand to gain from servicing emissions markets, but in contrast to the financial services industry they benefit from the markets regardless of whether or not the markets are successful because their revenue is generated from service fees. For example, legal firms generate revenue from writing contracts for carbon credits, structuring products, and litigating disputes regardless of whether or not the price of emissions is high. They are consequently more familiar with the technical complexity required for markets to operate efficiently, and more skeptical of the ability of markets to reduce emissions.

Individuals from industry are less likely to see price efficacy as an advantage of emissions markets. Even if the markets are a more flexible means of governance, they still place a burden on the industry sectors subject to a cap. Individuals from government are more likely to recognize political uncertainty as a disadvantage of emissions markets. These individuals operate most closely and are most familiar with the political tensions involved in markets. Whether or not respondents were in favor of the markets, they recognized that they operate only if they have political support. The markets require a consistent and stable regulatory framework to be effective. However, as in the case of Australia, the regulatory framework is subject to change every time there is an election. The political turnover creates market uncertainty. Finally, NGOs are unsurprisingly less likely to identify reducing emissions as an advantage of emissions trading. NGOs tended to be more concerned with the environmental impacts of governance and more skeptical of market-based approaches.

In sum, statistically significant regional variations around the idea of market-based climate governance belie the apparent consensus in the Anglo/European space regarding markets as a basis for managing climate change. European respondents emphasize global-scale coordination and governance beyond the nation-state. US respondents hold a stronger belief in the efficacy of markets as a means of reducing emissions, and Australian respondents demonstrate a more internal focus and a stronger emphasis on technocratic norms. Australian's associate market-based governance with fairness but recognize the limitations.

In the East there is much greater skepticism in general about the use of market mechanisms for governance. The respondents who favor markets tend to demonstrate different priorities. The perspective from respondents in China is perhaps at odds with the government rationale for pursuing market-based governance. In China, markets are associated with modernity and China's international standing relative to other great powers, but more importantly as the path to ecological modernization through which economic growth will be connected with environmental preservation. Nevertheless, market participants express skepticism about where the markets come from, the technical complexity involved in creating them and how they will relate to a Chinese institutional setting of governance.

In South Korea, there is a similar association with development and international standing through the construction of markets. To the extent that they provide flexibility, the actors who have considerable expertise (particularly within the ministries) see the markets as an advantage. Nevertheless, there is also recognition of the

complexity involved in building effective carbon markets, and concern over the time it will take to properly operationalize them. Japan is the country most skeptical of emissions trading, with individuals across occupational sectors voicing strong concerns. Some of the most vocal critics come from within the industrial and financial service sectors. The strong negative associations of market governance, particularly regarding the technical complexity of the markets and prevalence of profit over environmental impact, are derived from cultural norms and values that differ from those of the Anglo/European context.

The Role of Politics in Shaping Political Norms

The differences in how markets are conceptualized between regions highlight the importance of intersubjective coherence in perspective within regions. The idea of market-based governance resonates in different ways in different geographies, but there is also a surprising degree of coherence in concepts within and even between places. In countries like Australia and the United States, efficiency is a major goal. In Europe, the ideas of economic opportunity and global leadership predominate in discussion of markets. The term “modernization” is common in both China and South Korea. In Japan, respondents associated their skepticism of financial markets by describing emissions markets with the term “money game.” Although these differences in conception and in the language used to describe markets are interesting in and of themselves, what is particularly interesting is the way markets permeate the social conscious and resonate with their own language in different places. This suggests that scholars and policymakers cannot speak of “the market” because processes of syncretism driven by local sociopolitical factors produce multiple permutations of “the market,” each with greater or lesser degrees of divergence from the abstracted ideal. This has potentially significant ramifications for using markets to manage climate change, which requires markets to have an extremely high degree of interoperability and thus low tolerances for divergence.

Consequently, in addition to communicating particular economic values about energy use and efficiency through a price signal, markets also communicate a range of other concepts and social values. The language that permeates the markets in each region reflects common understandings of what the markets are expected to be as well as who has the authority to govern and shape them. As Donald MacKenzie (2009) suggests, material agencements (combinations of human beings, material objects, and technical systems) structure markets. It is a combination of human agency, organizational structure, and systems of meaning that constitutes markets.

The global imperative to address climate change through technical framing as generated by the UNFCCC provides both a logic of action as well as an infrastructure of organization. It suggests, and relies upon, institutional isomorphism of the markets, in particular giving a common basic framework: a cap, the allocation of permits, a commodity of trade, and comparable organizations of monitoring, verifying, and reporting. The agencies with expertise in navigating these roles take on

market authority. And yet, the global imperative and isomorphic form (markets copied from the structure of the EU ETS for example) competes with economic *metis* grounded in sociocultural and political norms. For example, in China private accountancies, consultancies, and legal firms do not have the same authority as the National Development and Reform Commission to perform the functions of monitoring, verifying, and reporting. Conversely, in the United States the construction and functioning of the market lies largely in the hands of private sector accountancies, consultancies, and legal forms. The basic shape and function of the market is therefore translated through different infrastructures and the isomorphism disappears as the markets are built and enacted through different cultural logics.

Network Governance in the Context of Market Cultures

Linking network governance to market culture allows for additional insight into the dynamics that underpin climate policy. Because climate policy requires coordination across multiple organizations within the complexity of contemporary political economies, the concept of network governance can provide important analytical leverage. Provan and Kenis (2008, p. 231) define a network as three or more legally autonomous organizations working collaboratively toward a common goal. By emphasizing multiple nodes of agency, this approach allows for a more realistic engagement with climate policy, in which multiple organizational actors must be harnessed into collaborative networks to produce the profound shifts in energy production and use required to reduce carbon emissions.

All networks are not the same, however. Provan and Kenis (2008) identify two cleavages. First, networks vary by the degree of centralization. At one end—called shared governance—are completely decentralized networks in which all the participants interact and governance direction is equally shared. The underlying market cultures shape their function and organization. At the other end of the spectrum—termed lead organization—are networks in which one or a small number of organizations take the lead directing governance and contact between the other organizations in the network is limited. A second cleavage concerns the source of leadership. At one end are networks that are governed by their own members. At the other are networks that are governed by organizations external to the network. These external governors are called network administrative organizations (NAO) (Provan & Kenis, 2008, pp. 233–234). In their comprehensive review of the network governance literature, Dal Molin and Masella (2016, pp. 497–498) identify an additional set of six factors: trust in others to take account of interests, size of network, goal consensus, leadership that support governance, embeddedness of goals in network relations, and diversity of network members. Table 9.5 below combines the typology identified by Provan and Kenis with the factors outlined by Dal Molin and Masella and applies them to the United States, Japan, European Union, China, South Korea, and Australia. Clearly, these polities differ quite dramatically. Much of this difference is due to differences in the market cultures.

Table 9.5 Network archetype defining characteristics

Archetype defining characteristics						
Country	Size	Diversity	Embeddedness	Goal consensus	Trust	Leadership
United States of America	Large—50 states with 535 elected representatives, and open campaign finance laws	Geographic interests, democratic vs republican, special interest groups and industries	Strong state-state dyadic relations based on region, very loosely connected through the federal government	High—High among the parties, low among the federal government	Low to moderate—Federal government monitored by states, competition in private sector	Federal government
	Lead or NAO	Shared	NAO or Lead	Shared governance or lead	NAO	NAO or Shared governance
Japan	Small	Low—Consensus that technology is the solution	High level – Joint Crediting Mechanism implies that Japanese ministries/agencies are working together to form individual plans with other countries	High – Recognition of need for “good” or “technological” market	High density	Lots of cooperation between industries
	Shared governance	NAO	NAO or Shared	NAO	Shared governance	Shared

(continued)

Table 9.5 (continued)

Archetype defining characteristics						
Country	Size	Diversity	Embeddedness	Goal consensus	Trust	Leadership
European Union	Moderately large – 28 member states	Very diverse based on different member state size, cultures/history, and objectives	Strong relational embeddedness – Certain countries have a history of working well together, or share common climate change goals. Structural embeddedness – High level. Network actions are determined by dyadic relations.	Moderately high	Moderate density— Countries can place trust in the EU, which represents the whole. Don't need to necessarily trust every individual country	Single overarching government
China	Lead or NAO Large	NAO High—Large country with different geographic and economic needs, but united under centralized gov.	Shared governance Strong relational and structural embeddedness due to highly centralized government	NAO Very high	NAO Moderately high	Lead Centralized government
	Lead or NAO	Lead	Lead	Shared governance or NAO	NAO	Lead

Note. Source: Design by authors

Fig. 9.1 Form of network governance plotted against market culture. Source: Design by authors

In Fig. 9.1, we present the differences in network governance mapped onto market culture.

With this figure, we clearly demonstrate the relational position of the various polities with respect to climate policy. The United States, more than any of the other countries surveyed, indicated a strong positive correlation with the idea that the capacity of market governance to reduce emissions is an advantage. The United States' positioning on the y-axis is due to the dynamics created by the two-party system and the profusion of political lobbying. Although the United States bears potential to demonstrate characteristics more akin to that of a lead organization, the checks and balances system of the US system along with strong party polarization are indicative of a form of shared governance. As such, goal consensus within the parties is high, but goal consensus within the federal government is low. Similarly, trust between the parties is low, but within each party is moderately high. Additionally, lobbyists from a variety of business industries have a large presence in American governance. Campaign contributions from wealthy individuals and special interest group have reached historical highs since the Citizens United decision, adding more voices to the American political process.

As evidenced by the figure, Australia's culture is moderately state oriented and network is moderately lead oriented. Australia respondents were of the opinion that although a private-sector-driven market solution to climate change is likely the

optimal solution due to how markets incentivize innovation, it is unlikely that consensus on a global market structure will ever be reached. The Australian view is that pricing within a carbon market is fraught with challenges due to the uncertainty of pricing environmental impacts and the challenges of maintaining stable, long-term projections amidst that uncertainty. The uncertainty surrounding pricing and the unlikelihood of global consensus places Australia in favor of more state-controlled responses to climate change. In relation to governance, Australia is dominated internally by a strong private sector and is host to a similar lobbying presence like the US. However, the party in power in Australia has control over the ministries, indicative of a lead-organization style of governance.

By contrast, the EU demonstrates characteristics that align well with the NAO form of network governance. The number of member states is moderately high, with moderate trust density between member states and the EU itself and between member state dyads. The leadership style is an external network organization, the EU, overlooking participant member states. Additionally, because of the separation of the member state governments from the EU, lobbying does not affect EU governance in the same way that lobbying impacts the United States: Member-state politicians are not the same politicians as those who represent the member state at the EU level. The EU respondents indicated a strong correlation with the reliance on governance cohesion as a disadvantage for global climate markets—EU respondents acknowledged that markets must be international and interconnected to be effective, but the international governance cohesion necessary does not yet exist. The aforementioned response is reflected in their positioning towards the center of the x-axis, with a slight preference for markets.

Japan differs from the rest of the study polities in that the Japanese respondents indicated a strong preference for domestic solutions to climate change through technological development. The Japanese BOCM/JCM is structured to allow each host country to partner independently with Japan, creating highly specialized partnerships as opposed to facilitating participation in a general, global system. Goal consensus among Japanese ministries and industries is high with a low diversity of opinions, indicative of a shared form of governance. Finally, Japan's position on the x-axis is reflective of the respondents' consensus across different occupational sectors that the faults of market governance are high, coupled with their emphasis on a "good" or "technological" market as the solution to emissions reductions.

Korea sits with Australia and China in the State and Lead quadrant. Although the Korean respondents appreciate the flexibility and viability that carbon markets offer, they do not see carbon markets as a mechanism for combatting climate change that can be easily implemented at a global scale because of the differences between industries in terms of the instruments and processes that are used. The leftward positioning on the x-axis is complemented by a more lead-organization style of network governance, as the Korean ministries are highly influential within the government and contribute to a single national agenda.

Finally, China most strongly demonstrates the characteristics of a lead organization as its form of network governance, with a substantial emphasis on state governance for climate change solutions. Chinese respondents indicated a negative

correlation with the idea that markets are a more efficient form of governance than the state, especially considering the amount of time it would take to develop the necessary institutions and regulatory agencies within China to monitor a carbon market. The preference towards a state solution is indicated by China's left leaning position on the x-axis. Additionally, applying the Provan and Kenis typologies of network governance while using the expanded Dal Molin and Masella characteristics, we have determined that the size, embeddedness, and leadership qualities of China are most like those of a lead organization, with the remaining characteristics of trust, diversity, and goal consensus indicating state cohesion and cooperation due to the highly centralized nature of the Chinese government.

Market Perceptions: From General Claims to Specific Cases

Market-based governance is driven by assumptions that climate change is a techno-economic rather than a sociopolitical problem and is thus amenable to universalistic neoliberal-economic policy prescriptions. However, these prescriptions interact with political and social systems in different scalar contexts, producing variations in how the market is understood and operates. With our analysis presented here, we show that climate policies cannot neglect the ways in which differences in scale and place—local, national, and regional—impact on how international mandates translate into action. Shortcomings in the global effort to address climate change can thus in part be traced to failures to appreciate how economic *metis* shapes economic practice at different scales and in different places. As suggested in this chapter, culture at the national and regional levels plays a crucial role in determining the enactment of international imperatives. Markets do not exist in institutional vacuums and failure to account for local economic knowledge means that efforts to establish governance on the basis of universalistic economic behavior are unmoored from the ways states and societies practice economics. These variations also play out across different network governance forms, making for a complex climate policy landscape.

The mix of social and governance contexts and motivations behind policy suggests that greater flexibility is needed at the international level to enable states to act on climate change. The arrival of different polities at different policy solutions reflects the distinctive sociopolitical systems in which they are formulated. In the EU, the market has been implemented quickly but has struggled to make even slight adjustments. In the US, global and popular discourses have generated periods of heightened concern over climate change, only for these to be destabilized by “economic realism.” Nonetheless, well-established bureaucratic systems to manage air-quality-control problems in the 1970s and 1980s in California enabled the establishment of a technocratically managed system, albeit years after the EU ETS. In Australia, a strong bureaucratic culture propagated carbon-pricing policies only for political turmoil to threaten to unravel the system a few years later.

In China, the emissions markets have been established as political compromise to mitigate climate change but in a less stringent manner than the usual command

and control approach. Although the strategy of trialing different forms across seven regions has lent greater flexibility to the system, it to a degree has also marginalized the impact of emissions trading. In Japan, attempts by the Ministry of Environment to institute regional and domestic emissions trading systems have been met with strong resistance from industry. Cultural norms dictate that markets must have a material impact. The compromise has been to adapt the basic idea and structure of emissions market or offset trading and apply it to the transfer of technology to developing regions. Although the approach is beneficial for both energy and emissions gains, it has pulled Japan from international negotiations. In South Korea, the markets adapt well to the strong technical capacity and existing authority of various ministries. And yet, the South Koreans have struggled to scale the markets to a size and form that best fits the conditions of their relatively consolidated industrial groups. As we have demonstrated in this chapter, the idea that climate change can be addressed through a single, unified techno-economic prescription does not hold against empirical reality.

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