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Comparing the Climate Policy Performance of Emerging Economies

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Summary. — Domestic climate policies and the actual environmental performance differ between emerging economies. Using a fuzzy set Qualitative Comparative Analysis (QCA), this paper tests the influence of the domestic green industry, the ratio of fossil fuels to financial power, the international negotiating position, and the environmental civil society in Brazil, China, India, Indonesia, South Korea, Mexico, and South Africa. A bad ratio of domestic fossil fuel production to financial power and a weak environmental civil society are a sufficient condition for weak climate policy performance. A weak domestic green industry combined with a weak influence of the negotiations only explains some of the cases.

Key words — climate change, environmental performance, emerging economies, green economy, QCA

1. INTRODUCTION

The international climate negotiations in Doha in December 2012 kept the bureaucratic proceedings going, but were devoid of any real breakthrough. Under the Durban Platform for Enhanced Action, a new binding agreement is supposed to come about till 2015. As progress remains slow, the practice of climate governance continues to shift to other levels. The four BASIC countries Brazil, South Africa, India, and China as well as other emerging economies are no longer completely abstaining from engaging in global climate governance. While commitments at the rhetoric level in the international climate negotiations do not differ that much from each other—largely remaining rather defensive—clear differences exist in the actual climate policy performance of these countries over time. The analysis of the causes for this variance is the aim of this paper.

It is still not fully understood which factors (or which combination of factors) explain (a) the commitment to differing climate mitigation targets and, more so, (b) the differing performance in reducing greenhouse gas emissions in emerging economies. It is also required to examine if larger nonBASIC-economies such as South Korea, Mexico, and Indonesia implement at least slightly deviant programs (BASIC+). Therefore, these next major emitters (apart from oil producers) are included in our analysis.

In International Relations, the latter countries and the interplay of domestic and international factors have been largely left out of a comparative analysis until now. Recent studies compare only the behavior of the BASIC group in the international negotiations (Hallding *et al.*, 2011; Hurrell & Sengupta, 2012; Nhamo, 2010), provide in-depth analyses of one or two BASIC countries (Atteridge, Shrivastava, Pahuja, & Upadhyay, 2012; Betz, 2012; Hochstetler & Viola, 2012; Never, 2012a; Stevenson, 2011; Walsh, Tian, Whalley, & Agarwal, 2011) or focus on specific issues such as the reduction of emissions from deforestation and forest degradation (REDD, e.g., Okereke & Dooley, 2010).

Moreover, only few studies integrate domestic influences into an explanation of international climate policy of these countries. Hallding *et al.* (2011) undertake first valuable steps in this direction, but limit themselves to the BASIC group. Dubash (2009) shows in a useful way that three divergent positions among domestic actor groups impact the Indian negotiating position—an analysis that Michaelowa and Michaelowa (2012) largely confirm. Finally, Rong (2010) compares the influence of several domestic and international factors on the likely future stances of China, India, Brazil, South Africa, and Mexico in the international negotiations. She looks at the ecological vulnerability, the mitigation capability, the amount and financing of technology transferred, international pressure, and the adoption of aggressive climate policies by other countries. Her findings indicate that the mitigation capability of a country is more important than its vulnerability for a proactive stance, while the failure of developed countries to fulfill their financial and technology transfer obligations present a hindering factor. These results can, however, only explain the prospective negotiating position of the BASIC+, not the actual impact of these positions or the environmental outcome dimension. Moreover, the comparison itself could be significantly improved by a more rigorous methodological proceeding.

Overall, research that makes a systematic connection between domestic and international levels to explain the differing behavior of the BASIC+ with a focus on actual outcomes has not reached a sufficient stage yet. In this paper, we therefore

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ask: *Which factors explain the differences in the climate policy performance of the BASIC+?*

This article provides answers to these questions through the conduct of a fuzzy set Qualitative Comparative Analysis (fsQCA) and a qualitative discussion of the individual cases. Qualitative Comparative Analysis (QCA and fsQCA) provides tools to test combinations of conditions and to differentiate between necessary and sufficient conditions. This method has been recommended for the analysis of multi-level policies (Lacey & Fiss, 2009) like climate policy. QCA is particularly suitable for a small to medium number of cases (10–50) that are at least partly assessed with qualitative data. Moreover, the method allows for multiple, possibly collinear independent conditions that cause the outcome in cumulative equifinal combinations (Ragin, 2008). This contribution thus presents a novel comparative analysis of internal and external causes for the climate policy of the BASIC+ and their evolution. We argue that these countries share certain features that explain their still somewhat restrictive behavior in international climate negotiations. Despite their once unified international position, national climate-related actions and their impact differ markedly.

The paper is structured in five sections. In the first section, we present our theoretical framework and the four hypotheses we seek to test. The second section follows with a brief overview of our methodological approach. In the third section, we turn to the fsQCA calibration and tests for necessary and sufficient conditions. In the fourth section, we provide a discussion of the fsQCA results in the light of the behavior of the BASIC+ in the international climate negotiations. Additionally, we discuss the strength, positions, and activities of domestic civil society, business, and government agencies. A concluding section summarizes the results.

2. THEORETICAL FRAMEWORK

We aim to contrast and test the explanatory power of four different arguments resulting from different schools that integrate domestic factors into climate foreign policy concepts. The first one can be termed the International Political Economy (IPE) view. Authors analyze the role of business and technological power (Falkner, 2008) and propose alternative explanations for the state of global environmental governance or climate capitalism that focus on the relationship between states, markets, and civil society (Newell, 2008; Paterson, 2000). Game-theoretic and public choice explanations share some of the basic assumptions of the IPE literature (Carraro & Fragnelli, 2004; Mayr, 2009). They generally accept that cost–benefit calculations, the role of companies, and business associations are important forces in international climate policy. Game theoretic and public choice approaches emphasize the rational choice model of decision-making and the primacy of individual-relational interests. Public choice theorists extend it to other interest groups such as voters. The impact of domestic level factors on the international behavior of a government then becomes a reflection of rational preferences and perceived political incentives for more or less proactive climate policies. Change primarily occurs if it makes commercial sense, or if relevant domestic groups identify exogenous developments that may produce losses for them, e.g., higher costs due to delayed action on climate change. This is in line with the general idea of Putnam's (1988) two-level game.

Following these rational choice arguments, it can be assumed that the BASIC+ will only commit more strongly to climate policy if economic growth and development are not compromised, or if opportunities or threats are identified by domestic groups pressuring their governments. Domestic groups shall comprise only "green" and traditional enterprises (in their relative weight), as the remaining civil society is dealt with in Hypothesis 4. We deduce the following hypothesis from this:

Hypothesis 1. If domestic industry groups identify economic opportunities that converge with climate change goals, and are relatively strong compared to traditional sectors, then the government commits more strongly to managing climate change, leading to a stronger performance.

The debate about the mitigative capacity or mitigation capability of a country is related to the modeling of abatement costs in economics, but analyses are based on a broader account of socio-economic factors (Richerzhagen & Scholz, 2008; Rong, 2010; Tompkins & Adger, 2003; Winkler, Baumert, Blanchard, Burch, & Robinson, 2007). In its most simple form, the concept of mitigative capacity captures "the ability of a country to reduce anthropogenic greenhouse gas emissions or to enhance natural sinks" (Winkler *et al.*, 2007, p. 694). Different authors integrate different socio-economic data in their assessments; some add the ecological vulnerability (e.g., Rong, 2010). The shift of the energy structure of a country to more renewable energies requires large financial outlays by state agencies as the energy sector of the countries selected is still dominated by state enterprises. Both political and financial incentives are required to induce this change. Up to now, however, greenhouse gas emission taxation only happens on an experimental basis in emerging economies. Since the "low hanging fruit" of energy efficiency has not been completely picked yet—the so-called energy efficiency gap (Alcott & Greenstone, 2012)—private investments matter, but may need carefully constructed political support (see Section 5). For operationalization, we therefore settle on the ratio of fossil fuel production of a country to its financial capacity, measured by the fiscal balance and income per capita, while taking into account the size of the economy. We exclude education and skill levels as well as the absorptive capacity for technologies relevant to mitigation because in-depth data on mitigation-specific technological capacities was not available. General data on schooling, for example, do not give adequate insights.

Accordingly, we hypothesize:

Hypothesis 2. The ratio of fossil fuels to the financial capacity determines the ability of a country to implement climate policy. If this ratio is favorable (less fossil fuels, more financial capacity), then countries' performance is strong. If the ratio is unfavorable, then countries perform weakly.

Another important group of approaches follows normative-institutionalist arguments (Cass, 2006; Stevenson, 2011) and gives more attention to the role of the global environmental civil society for global norm-building (Hochstetler & Viola, 2012; Schroeder, 2008). The interplay between domestic and international normative attitudes may come about through framing or grafting (Stevenson, 2011). In international climate policy, recent years have seen a shift toward the position that all countries have to do their share to control climate change. This position is shared not only among the industrialized countries, but increasingly by least developed countries, the small island states and—tentatively—even some emerging economies. We assume that this is a new informal international norm. Previously, the G-77 (including the BASIC and most other emerging economies) formed a defensive

negotiation block that used the same lines of argumentation, putting international equity and the responsibility of the industrialized countries in terms of mitigation, financing adaptation, and technology transfer above all else (IISD/ENB, various years). This front is crumbling.

Mexico and South Korea have already left the camp of the hardliners in 2000, forming the Environmental Integrity Group with Switzerland, Liechtenstein, and Monaco. In 2012, the new Association of Latin American and Caribbean States (AILAC) left the G-77. The AILAC calls for the mitigation of emissions by all countries and corresponding incentives. Opposing the AILAC is the new "Like Minded Group," which is comprised of members of the Arab Group, Argentina, Venezuela, Bolivia, Ecuador, India, and China. At the international level, they continue to advocate for international equity and the historical responsibility of the industrialized countries (IISD/ENB, 2012). Internally, however, actors in some countries seem to accept this new informal norm, while others stick to the traditional position (e.g., Dubash, 2009; see Section 5). The legacy of the traditional positioning may thus be important in both domestic institutional structures and actor composition. Corresponding to these arguments, we hypothesize:

Hypothesis 3. The congruence of international and existing domestic norms matters. If the legacy of the previous traditional negotiating position resonates strongly within government, then the country performs weakly in terms of the climate policy outcome.

While civil society organizations are by no means the only relevant group for the building of climate change norms, they are particularly important for awareness raising and the implementation of environmental laws. This is happening in emerging economies as well (Di Gregorio, Brockhaus, Cronin, & Muharrom, 2012; Hochstetler & Viola, 2012; Never, 2012a). Environmental civil society organizations may question dominant norms or framings through their campaigns, for instance by demanding more domestic financial commitments to climate governance. In turn, transnational advocacy networks as well as the participation in international climate change negotiations are likely to influence the positioning of domestically grounded NGOs—through learning, emulation, and spill-over (Keck & Sikkink, 1998). These roles of civil society lead to the following hypothesis:

Hypothesis 4. If environmental civil society participates a lot in domestic climate policy decision-making in a meaningful way, then a country performs strongly. If their participation is limited or small, then performance is weaker.

By focusing on these four hypotheses, we chose to exclude the regime type and ecological vulnerability as possible explanations. Existing studies show that they are not among the decisive factors for environmental performance (Rong, 2010; Ward, 2008). Pure foreign policy explanations fall short of integrating the domestic level, which is the aim of this paper.

To test the four hypotheses, we conduct a fuzzy set QCA. The outcome is defined as the *climate policy performance* of each of the BASIC+. For measurement, it will be differentiated into different components. In line with our four hypotheses, we look at four conditions. They are (1) the strength/weight of the domestic green industry, (2) the ratio of fossil fuels/finances, (3) the legacy of the traditional negotiating position (framing), and (4) the strength of the domestic environmental civil society.

Our cases are all emerging economies with very significant greenhouse gas emissions, putting them under particular pressure to participate in a prospective climate regime and take action in both mitigation and adaptation on their own. The seven BASIC+ are also particularly active in the UNFCCC negotiations, but differ according to their actual domestic performance. Among the nonBASIC countries Indonesia is particularly interesting because of its high emissions from deforestation and forest degradation and its resulting strong interest in REDD+ mechanisms. Mexico continues to play an active part in the international climate negotiations after hosting the Conference of the Parties (COP) in Cancun in 2010. South Korea initiated a Green Growth strategy as the new national development paradigm in 2008, followed by an explicit green growth stimulus package that was set to help economic recovery after the global economic crisis in 2009. Since South Korea generally counts as a highly developed country by now, but falls into the large category of developing countries under the UNFCCC, it is interesting to analyze whether it performs better.

3. METHOD: FUZZY SET QCA

Qualitative Comparative Analysis is a set-theoretic technique based on Boolean algebra. In this paper, we apply fuzzy set QCA (Schneider & Wagemann, 2012). The use of a fuzzy set QCA enables us to not only test each of the four hypotheses, but also possible combinations of factors responsible for the outcome. We use a six-scale fuzzy set. The outcome and all conditions will be calibrated along the following scale:

1 = the case is fully in the set
0.8 = mostly but not fully in
0.6 = more in than out
0.4 = more out than in
0.2 = mostly, but not fully out
0 = fully out of the set

Defining the crossover point 0.5 very important in a fsQCA because it splits the overall set into two sub-sets: in the one sub-set, the condition is likely to be observed or present (>0.5), in the other one the condition it is unlikely to be observed or absent (<0.5). We define the crossover points for the conditions and the outcome in Section 4(a).

The outcome "climate performance" can be operationalized either as the change of total/per capita greenhouse gas emissions, the deforestation rate, the carbon intensity or the energy intensity of an economy. We chose a composite of the carbon intensity of a country in purchasing power parities (PPP) and its deforestation rate. The carbon intensity captures the amount of CO_2 generated by one unit of the Gross Domestic Product (GDP). Since it is a relational indicator avoiding the problem of large differences between emerging economies' absolute greenhouse gas emissions and their per capita emissions, it is particularly useful for our purposes. The deforestation rate indirectly shows how much additional carbon gets into the atmosphere because it is not bound in forests anymore. Together, these two values make up the vast majority of a country's greenhouse gas emissions, albeit in different proportions. Carbon emissions from deforestation are not taken into account in the available calculations of carbon intensities, but they are central for the overall performance of countries with large forest cover such as Brazil. Even though both factors are also determined by the technical, geographical and economic set-up of a country, they are significantly altered by policies. In this paper, we are interested in the impact or outcome-dimension of policies. We calibrate the carbon

intensity and the deforestation rate separately, and then take the mean of both as an overall QCA value, adjusted according to the overall amount of forest coverage in the respective country compared to the other cases (see Section 4(a)).

For each of the four hypotheses, we take one indicator that serves as a condition in the fsQCA. For the strength of the domestic green industry (condition "*Renewables*"), we compared several market analyses available (e.g., Bloomberg New Energy Finance [BNEF], 2012, 2011; REN 21, 2012, 2007) and the relevant documents by business and industry associations. This led to a qualitative assessment. The ratio between fossil fuels and the financial capacity of a country is calculated based on the sum of oil, coal, peat, and natural gas produced in a country—taking imports and exports into account—and a composite of the overall fiscal balance (after the IMF), the GDP-PPP and the GDP/capita-PPP (condition "*Fossil_Finance*"). The influence of the previous, traditional negotiating position on the current behavior of a country ("*Trad_Negotiations*") is an aggregate, qualitative measure based on expert assessments, official statements, and a series of interviews conducted as part of another project. The same interview data were fed into the qualitative assessment of the condition "*NGO*". Here, we also assessed the intensity of environmental protests in the respective country and the influence of environmental NGOs on governmental decisions, again based on available evidence, newspaper articles, and gray literature. To validate our own judgments, we conducted a range of supplementary interviews with peers working in the field. This data also served the qualitative analytical discussion, complementing the fsQCA (Section 5). The quantitative data we use stem from the FAO (deforestation), the IEA (for all energy-related indicators and carbon intensity, the IMF (overall fiscal balance) and the World Bank Development Indicators Database.

We analyze 14 cases, splitting the analysis of the seven emerging economies into a temporal comparison of their respective situations in 2005 and 2010. The year 2005 is a suitable point in time because the pressure on emerging economies to participate in the mitigation of climate change increased sharply in 2005 and after. Climate change moved higher on the international agenda (ratification of the Kyoto Protocol, publication of the so-called Stern review in 2006 and the IPCC Fourth Assessment report in 2007). Moreover, the emerging economies had a rather fixed, unified position concerning climate change until 2005, making larger differences in the actual performance rather unlikely (IISD/ENB, various years). The latest data for our performance indicators is available for 2010 only. Given the relatively low number of cases for the conduct of a fsQCA, our claim to identify definite causal relations beyond our sample is realistically moderate.

4. EMPIRICAL ANALYSIS: DIFFERING PERFORMANCE IN CLIMATE POLICY

(a) *Calibration of the outcome "climate policy performance" and conditions*

We now turn to the calibration of the climate performance of the BASIC+ and the four conditions. For each variable, a crossover point at 0.5 and the extreme values 0 and 1 have to be set with clear criteria before attributing a fsQVA value for each case.

For the carbon intensity part of the outcome "*Performance*," we chose the world average (2010 = 0.44 kg CO_2/\$, 2005 = 0.47 kg CO_2/\$,) as the crossover point 0.5. To guide our calibration of the spaces between QCA values, we took the average of all NonAnnex I countries to the Kyoto Protocol as the QCA value for 0.4 (2010 = 0.5 kg CO_2/\$; 2005 = 0.53 kg CO_2/\$,), then calibrating the other QCA values with 0.1 above or below these values. Thus, we set the extreme values at 0 = 0.72 kg CO_2/\$ and 1 = 0.22 kg CO_2/\$, taking also the trend over time into account (see Table 1). The calibration for deforestation is an assessment of the annual change rate in the last 5 years (2000–05 and 2005–10), taking both the hectares per year and the annual change rate in per cent into account. We set the crossover point 0.5 as no change. A case is fully in when it shows an afforestation rate of one per cent per year or above and/or afforestation concerns at least +800,000 ha per year. A case is fully out when deforestation takes place at −0.4% annual change or worse and/or −800,000 ha per year—the latter is the rounded off world average during 1990–2000. To allow for the differences in forest cover between the countries surveyed, we took this world average as the lower threshold. Additionally, we decided on the smaller percentage −0.4 for deforestation to account for the differences in time and impact of deforestation: a young, freshly planted tree can absorb less carbon than a fully grown tree. It takes a long time until the new tree has reached the capacities of the fully grown one that is being cut, making deforestation relatively worse. In the case of South Africa, we took the country's conservation efforts in its national parks as a positive sign, attributing a value of 0.6. The final fsQCA value for the following analysis is the mean of the two calibrations, adjusted to the trend and the overall amount of forest coverage in a country (see Table 1).

The calibration of the outcome and the four conditions is summarized in Table 2. The condition "*Renewables*" is based on a qualitative assessment of the market share and the number of domestic industries active in renewable energy. A case is fully in when its domestic green industry is the world leader in more than one sub-field of renewable energy. A case is fully out when it does not take part in the world market on renewable energy at all or only to an insignificant part. The cross-over point 0.5 marks the average strength of the domestic green industry compared among the seven countries under analysis here. The QCA values in between are relational assessments compared to the cross-over point, extreme values, and the other cases. India, for example, recently expanded its market share in both the wind and solar energy markets, but does not play a significant role in hydropower, as Brazil does. India is, however, neither the world leader in any of these markets, nor has it surpassed China in the wind and solar markets. India thus received a value of 0.6 in 2005 and 0.8 in 2010.

The values for the ratio "*Fossil_Finance*" derive from the comparison of the sum of crude oil, natural gas, coal, and peat production in a country (adjusted to imports/exports) to the financial capacity in both 2010 and 2005 (see Annex). The calculation of the financial capacity of both the respective governments and the private sector draws on the overall government fiscal balance and the GDP-PPP per capita, while taking the GDP-PPP into account as a reference for correcting QCA values up or down in case the other indicators do not result in a clear composite value. Taking more than one indicator here increases the robustness of the calculation. Moreover, we argue that both the public and the private sector have to bear the costs of climate change abatement. The overall government fiscal balance is the most commonly used measure of governments' fiscal situation (IMF., 2012: 37), displaying the difference between all revenue and all spending transactions during a given period. It is a measure of the financial leverage governments have for their measures, e.g., investing in renewable energy subsidies. The income per capita reflects relative poverty levels, while the GDP gives insight into the

Table 1. *Calibration of the outcome "Performance"*

Case	Carbon intensity (ppp) in kg CO_2/$[*]	Calibration 1	Deforestation (annual change, 2005–10 and 2000–05)		Calibration 2	Final fsQCA Value (mean of 1 and 2, adjusted to trend and overall amount of forest of a country)
			1,000 ha/year	%[**]		
BRAZ10	0.2	1	−2194	−0.42	0	0.4
CHIN10	0.77	0	2763	+1.39	1	0.6
IND10	0.43	0.6	145	+0.21	0.6	0.6
SA10	0.73	0	0	0	0.6	0.4
KOR10	0.43	0.6	−7	−0.11	0.4	0.6
INS10	0.44	0.4	−685	−0.71	0.2	0.4
MEX10	0.3	0.8	−155	−0.24	0.4	0.6
BRAZ05	0.20	1	−3090	−0.57	0	0.4
CHIN05	0.91	0	3209	+1,75	1	0.4
IND05	0.46	0.4	464	+0.70	0.6	0.4
SA05	0.81	0	0	0	0.6	0.2
KOR05	0.43	0.6	−7	−0.11	0.4	0.6
INS05	0.48	0.4	−310	−0.31	0.2	0.2
MEX05	0.3	0.8	−235	−0.35	0.2	0.4

Sources: International Energy Agency and FAO.
[*] ppp = purchasing power parities; World average 2010 = 0.44 kg CO_2/$, NonAnnex I average 2010 = 0.5 kg CO_2/$; World 2005 = 0.47 kg CO_2/$, NonAnnex I 2005 = 0.53 kg CO_2/$.
[**] Rate of gain or loss in percent of the remaining forest area each year within the given period.

Table 2. *Calibration of all variables*

Case	Performance	Renewables	Fossil_Finance	Negotiations	NGO
BRAZ10	0.4	0.8	0.6	0.2	0.8
CHIN10	0.6	0.8	0.4	0.6	0.4
IND10	0.6	0.8	0	0.2	0.4
SA10	0.4	0.2	0.4	0.8	0.4
KOR10	0.6	0.4	0.6	0.8	0.4
INS10	0.4	0.2	0.4	0.6	0.6
MEX10	0.6	0.2	0.6	0.6	0.4
BRAZ05	0.4	0.8	0.4	0.2	0.6
CHIN05	0.4	0.6	0.2	0.4	0
IND05	0.4	0.6	0	0	0.2
SA05	0.2	0	0.4	0.4	0.2
KOR05	0.6	0.2	0.6	0.8	0.6
INS05	0.2	0.2	0.4	0.4	0.4
MEX05	0.4	0.2	0.4	0.6	0.4

Source: Authors' own calculations.

overall strength of the economy and the ability of the private sector to invest. Both present important factors for the mitigative capacity of a country (Rong, 2010; Winkler *et al.*, 2007).

For the calibration of this condition, we used the average amount of fossil fuels produced in a country in 2010/2005 to define the crossover points. China produces more than double the amount of fossil fuels than the other BASIC+ combined, strongly contorting the average. As we only have seven countries per time period analyzed, we therefore decide to exclude China from the calculation of the average of fossil fuel production as a moderating effect through a high number of cases is not possible. [1] For the year 2010, the average amount of fossil fuels produced was 218 million tons of oil equivalents, for 2005 it was 196 mtoe. A case is fully out if it produces more than double of these average amounts (2010 0 = 430 mtoe, 2005 0 = 392 mtoe). A case is fully in both years if it produces 30 mtoe or less. Since hardly any country can survive without fossil fuels today, this threshold seemed appropriate. We calibrated the values in between with equal distances to each other (for 2010 90 mtoe between QCA values, in 2005 75 mtoe per between values). The value for the crossover point 0.5 was the threshold whether a case receives the value 0.4 or 0.6. We also assigned a separate QCA value for all the two indicators of financial capacity, then taking their average as the final input into the ratio Fossil/Finance (see Annex). If the average lay between two QCA values, we took the GDP-PPP as reference. Concerning the overall fiscal balance, we calculated the average of preceding years, if data were available, as variation may be high between single years. We defined the crossover points for the fiscal balance as the average of 30 emerging markets over time (0.5 = −0.8% for the 2010 cases, 0.5 = −2% for 2005). We set the extreme values 0 at −3.3% (2010) and −4.5% (2005), and 1 at +2.3% (2010) and +1.5% (2005). For the calibration of the QCA values in between the extremes, we decided to take moderate steps of 0.5 each. For the calibration of the income per capita, we started with the world average as 0.5 (2010 = 9,584$; 2005 = 8853$) and then decided for a spacing of 2500$ between values for both years. This seemed an appropriate, manageable jump to achieve for emerging economies within 5 years (see Annex for calibration key). Values for the GDP-PPP are relational measures among the emerging economies and compared to the other countries in

the world. In the cases of China, India, and Brazil in 2010, we decided to increase the QCA value for the financial capacity by one step in order to better take into account that these three economies are much larger than the other emerging economies and all developing countries. For the other cases, the GDP served as the guideline if the average of fiscal balance and income per capita feel between two QCA values (e.g., 0.3). This produced the final QCA values for the condition "Fossil_Finance" (see Annex).

The condition "*Trad_negotiations*" is necessarily calibrated in an inverse way: Given the long-standing opposition of all developing countries and emerging economies to engage in mitigation efforts themselves, we assume that the traditional negotiation position of a country runs along these lines and therefore has a negative impact on performance. Accordingly, a case is fully in if the traditional, blocking negotiation position has no influence on the current behavior anymore and staff advocating for the old position has been exchanged. A case is fully out if the traditional blocking position continues to shape the current behavior of the country in such a strong way that it impedes any shift from its "hardliner" position, refusing to engage in any mitigation efforts. We set the crossover-point 0.5 to be the situation in which a government shows first signs for a possible shift, but has not taken any substantial steps toward changing its position yet. The values chosen for each case are based on a variety of qualitative data such as the official declarations of the respective governments and/or lead negotiators at UNFCCC conferences and media coverage of the issue in the respective countries. To clarify this by way of example: South Africa kept to the traditional negotiation position in 2005, even though domestic attitudes had begun to change among some bureaucrats, as both our interviews and secondary data show—but the government did not want to shift (as indicated by the official statements and speeches). This led to the value 0.4, just below the crossover-point for 2005. In 2010, however, South African rhetoric and attitude had changed clearly and the government now supports a much more proactive standing internationally. An example is president Zuma's pledge in the Copenhagen Accord (see also Never, 2012b). However, South African actors do not completely step away from the traditional negotiating position either as this would mean going beyond voluntary commitments (see Section 5). This led to the value of 0.8 for South Africa in 2010.

The condition "*NGO*" captures the influence of NGOs on governmental decision-making in climate policy and the intensity of environmental protests taking place in the respective country. A case is fully in this set when both the influence of NGOs is deemed very high and there is a significant number of environmental protests (more than 15 per year) that capture media attention. A case is fully out of this set if no influence of environmental NGOs on decision-making and no environmental protests can be made out. The crossover point reflects the situation when environmental NGOs officially take part in governmental consultation processes, but do not have real influence and/or when the number of environmental protests is small and struggling to capture media attention. The values in between (0.2; 0.4; 0.6; 0.8) are relational categories that provide qualitative gradations to these thresholds.

(b) *Tests for necessary and sufficient conditions*

Our four conditions can be combined in 16 possible ways to the outcome—in Boolean language: $2^k \rightarrow Y$, where k is the number of conditions and Y the outcome. We observed eight of these possible combinations among our 14 cases. Five cases show strong performance (Y = *Performance*) and nine cases show weak performance (Y = ∼*Performance*). The relatively low number of overall cases and high number of logical remainders (possible, but unobserved combinations of conditions) challenges the robustness of the results somewhat. We therefore decide to focus on the complex solution in the test of necessary conditions, taking no assumptions about unobserved combinations of conditions. We use the software fsQCA 2.5 for these tests. Tables 3 and 4 summarize the test for necessary conditions for both possible outcomes, strong and weak performance.

On a superficial level, the results seem somewhat contradictory to our hypotheses. In the literature, a consistency value of 0.9 and above is recommended for a condition to be deemed necessary (Schneider & Wagemann, 2012). Looking only at the consistency score, the weak influence of environmental civil society (∼NGO) is a necessary condition for the strong climate policy performance of an emerging economy. However, the coverage value is rather low. This condition is a strong explanation for the cases South Africa, India, China, and Indonesia in 2005. It also explains the cases South Africa and Mexico in 2010 albeit a little less clearly (cases are closer to the diagonal an XY-Plot indicating sub-sets). The cases Brazil 2005, India 2010, Indonesia 2010, Korea 2010, Mexico 2010, and China 2010 may or may not be explained by this condition (they are on the diagonal of the XY-Plot), while Brazil (2010) and Korea (2005) cannot be explained. Several explanations for these counterintuitive results are possible (see Section 5). Given the relatively low coverage values for this necessary condition, more cases would be necessary to decide whether the weak influence of environmental civil society is a relevant or irrelevant necessary condition. For our analysis here, it has to be considered as an ambiguous necessary condition.

A weak ratio of fossil fuels to the financial capacity of a country is a necessary condition for the outcome weak performance. Here, the values for both consistency and coverage are high enough. This is in line with our Hypothesis 2 proposing that the stronger this ratio (more nonrenewables, less financial capacity), the less likely a better climate policy performance becomes.

Table 3. *Analysis of necessary conditions: Outcome Performance*

Condition	Consistency	Coverage
Renewables	0.709677	–
∼Renewables	0.806452	–
Fossil_Finance	0.774194	–
∼Fossil_Finance	0.903226	0.65163
Negotiations	0.806452	–
∼Negotiations	0.774194	–
NGO	0.774194	–
∼NGO	0.935484	0.707317

Source: Authors' own calculations.

Table 4. *Analysis of necessary conditions: Outcome ∼Performance*

Condition	Consistency	Coverage
Renewables	0.615385	–
∼Renewables	0.794872	–
Fossil_Finance	0.615385	–
∼Fossil_Finance	0.923077	0.837209
Negotiations	0.666667	–
∼Negotiations	0.794872	–
NGO	0.692308	–
∼NGO	0.871795	–

Source: Authors' own calculations.

However, a weak ratio of fossil fuels to the financial capacity also seems to be a necessary condition for strong performance. The consistency is just high enough (0.90) but coverage is again low. Looking at the XY-Plot, this condition only explains the well-performing cases China 2010 and India 2010—but the other four cases with strong performance (both Korean cases and Mexico 2005) cannot be explained. This skewedness of results is a recurring problem in fsQCA (Schneider Wagemann 2012) that can be solved by looking at XY-Plots and PRI consistency values. Thus, this finding can be dismissed as a trivial or irrelevant necessary condition caused by the closeness of the QCA values to the crossover point 0.5.

To check the robustness of these results (Schneider/Wagemann 2012), we chose to change the calibration of the condition "NGO" by taking into account the number of registered environmental NGOs at the International Union for Conservation of Nature. [2] Interview partners conceded that smaller domestic NGOs register with IUCN to represent them at UNFCCC negotiations rather than registering at UNFCCC directly. This meant lowering the values for the Brazilian and Korean cases and increasing the values for the South African and Indian cases. Testing again for necessary conditions, the consistency levels for ~*NGO* as a necessary condition for *Performance* remains the same, but coverage decreases to 0.69. Additionally, the condition ~*NGO* becomes a necessary condition for weak performance *(~Performance)* as well, reaching a consistency level of 0.92 as well and a coverage value of 0.85. This underlines the argument that the influence of civil society is ambiguous for emerging economies' performance.

Next we construct a truth table to calculate a fsQCA algorithm for the test of sufficient conditions. Since the test for necessary conditions already indicated that the number of cases observed empirically for performance values above 0.5 is too small to produce robust results, we refrain from constructing a truth table on *Performance.* We employ the complex solution, thus not making any assumptions about logical remainders. This further strengthens the decision to simply focus on weak performance *(~Performance*) for the test of sufficient conditions (see Table 5).

We set the raw consistency value to be at least 0.80 for an inclusion into the fuzzy set truth table algorithm, above the minimum level of 0.75 suggested by Schneider and Wagemann (2012). The solution terms for the complex solution that tests for sufficient conditions are presented in Table 6.

The complex solution shows that an unfavorable ratio of fossil fuels to financial capacity and a low influence of environmental civil society *(~Fossil_Finance*~NGO*) together form a sufficient condition for weak performance. The consistency value is just below the threshold with 0.89, but the coverage passes well. In the light of the comparatively small number of cases, we still take this as a confirmation of both Hypotheses 2 (if the ratio of fossil fuels to finance is unfavorable, then a country's performance is weak) and 4 (if environmental NGOs lack influence, then a country's performance is also weak). Additionally, the result indicates that only Hypothesis 2 on the ratio of fossil fuels to financial capacity can stand alone. This sufficient condition explains both Indian cases, both Chinese and both South African cases as well as Indonesia in 2005.

A second path has lower consistency and coverage values, but may turn out to be another sufficient condition if more empirical cases beyond our 14 cases tested showed similar configurations: A weak domestic green industry and a weak influence of the previous negotiating position (~Renewables*Trad_Negotiations) would then together be a sufficient condition for weak performance. Since we calibrated the condition *Trad_Negotiations* inversely following the logic of the corresponding Hypothesis 3, *Negotiations* mean weak influence. This path would point toward the confirmation of Hypotheses 1 for both South Korean cases, both Mexican cases, South Africa, and Indonesia in 2010 as well as a confirmation of Hypothesis 3 for Korea (both years) and Mexico (2010). For South Africa, Hypothesis 3 might have to be falsified. A third path (Renewables*~Trad Negotiations* NGO) has high consistency values but very low coverage. It only applies to the Brazilian cases, so that it does not have enough explanatory power for a broader range of emerging economies.

Testing again for robustness by using the alternative calibration for the condition NGO, the consistency for the solution term ~*Fossil_Finance*~NGO* as sufficient conditions for weak performance increases to 0.94 and the coverage level increases to 0.87. The consistency and coverage values for the solution term ~*Renewables*Trad_Negotiations* remain the same. This strengthens our results, indicating that they are sufficiently robust despite the low number of cases. As another test for robustness, we exchanged the carbon intensity data with a calibration of energy intensity (data of the World Energy Council) and used different data for the condition *Fossil_Finance*

Table 5. *Truth table for weak performance (~Performance)*

Renewables	Fossil_finance	Negotiations	NGO	Number of cases	~Performance*	Raw consist.	PRI consist.	SYM consist
1	0	0	0	3	1	0.952381	0.666667	0.666666
0	1	1	0	2	1	0.909091	0.500000	0.500000
0	0	1	0	2	1	1.000000	1.000000	1.000000
0	0	0	0	2	1	1.000000	1.000000	1.000000
1	1	0	1	1	1	1.000000	1.000000	1.000000
1	0	1	0	1	1	0.937500	0.000000	0.000000
1	0	0	1	1	1	1.000000	1.000000	1.000000
0	1	1	1	1	1	0.947368	0.500000	0.500000
0	0	1	1	1	1	1.000000	1.000000	1.000000
1	1	1	1					
1	1	1	0					
1	1	0	0					
1	0	1	1					
0	1	0	1					
0	1	0	0					
0	0	0	1					

Source: Authors' own calculations.
* Value 1 = included in analysis of sufficient conditions.

Table 6. *Complex solution for outcome = ~Performance*

Solution term	Raw Coverage	Unique Coverage	Consistency
~Fossil_finance*~NGO	0.846154	0.128205	0.891892
~Renewables*Trad_Negotiations	0.641026	0.025641	0.833333
Renewables*~Trad_Negotiations*NGO	0.461538	0.076923	0.947369
Solution coverage: 0.948718	Frequency cutoff: 1.000000		
Solution consistency: 0.787734	Consistency cutoff: 0.909091		

Source: Authors' own calculations.

(only oil, coal, and peat production compared to country's public debt, current account balance, and budget deficit). It confirmed that an unfavorable ratio of fossil fuels to financial capacity is a necessary and sufficient condition for weak performance, but eliminated it as a necessary condition for strong performance as consistency drops below 0.9. Consistency for this necessary condition was higher at 0.97 and coverage at 0.78. In this robustness check, a weak ratio of fossil fuels to financial capacity was only a sufficient condition in combination with weak civil society influence (consistency: 0.91, raw coverage: 0.82). This again confirms our main results. We now turn to a discussion of these results by hypothesis, analyzing the relevance of solution paths and differing domestic context factors per country.

5. DISCUSSION

(a) *Hypothesis 1: The role of the domestic green industry*

The impact of the domestic green industry is not as relevant for the climate policy performance of the BASIC+ as expected. A weak influence of the domestic green industry together with a weak influence of the international negotiation position (~Renewables*Trad_Negotiations) suffices as an explanation for the degree of performance in Korea and Mexico, and to a lesser extent for South Africa and Indonesia. The strong and growing renewable energy industries in China and India have not led to commensurate climate performance yet.

In both China and India, investments in renewable energy are considerable, rising especially in the last few years (BNEF/Bloomberg New Energy Finance., 2011, 2012). In both countries, a domestic CDM [3] industry has evolved, advocating for the continuing of the mechanism under a new climate regime. In wind and solar energy, companies from both countries are among the world leaders by now, while Chinese companies are better positioned than Indian businesses (BNEF, 2012). As international competitiveness grows, the resistance against a restructuring of the energy sector and more proactive climate mitigation and energy saving diminishes - at least in parts of the domestic industries. The political strength of capital and emission-intensive industries in China and India is still greater than the influence of the renewable energy sector, which exports a considerable share of its products and therefore does not have to rely on domestic use.

In China, the shift to a less carbon-intensive strategy could have been easier if one follows the argument that an authoritarian system has fewer problems to control anti-sustainable behavior of firms and citizens (Gilley, 2012). Two sets of actors functioned as veto powers, initially resisting change to a more climate-friendly policy: On the one hand, lagging provinces, endowed with considerable political autonomy, were still eager to accelerate growth at any cost. On the other hand, state energy companies pursued their own agenda, perpetuating interests in fossil fuel production (Kong, 2011; World Bank, 2012). In addition, the institutional set-up of energy and climate policies was rather chaotic, characterized by a high number of agencies with overlapping and limited power (Downs, 2011; Kennedy, 2010; Zhou, Levine, & Price, 2010). These actors still function as a counterweight to the increasing power of renewable energy companies.

In India, the interests of domestic companies in the global renewable energy market converge with a need to produce more energy efficiently since energy shortages persist. However, the position of the industry on climate policy is far from uniform: Progressive industry associations such as the Confederation of Indian Industry are very much in favor of more progressive climate policies, as quite a few of its members are well-positioned to profit from a shift to cleaner energy sources. Other associations (e.g., ASSOCHAM) with a high share of members from traditional energy-intensive companies form are more critical. Several competing networks between influential companies and different governmental departments exist that pursue opposing interests (Betz, 2012; Never, 2012a). They lead to the limited influence of this condition on the performance level in India.

Brazil's domestic green industry is largely focused on hydropower and biofuel production. Brazilian companies hold major shares in the global markets in these sub-sectors and even export their biofuel production know-how. The wind and solar sectors are slowly taking off, but are not on a comparable level to India and China yet (Ren 21, 2012 and BNEF, 2011; Ren 21, 2007). In 2009, a number of coalition of "bootleggers" from industry started advocating for a proactive domestic climate policy and stronger deforestation controls, fearing future disadvantages to their competitiveness (Hochstetler & Viola, 2012). But there is opposition as well. State-controlled Petrobras is the dominant player in Brazil's energy sector. It is still enjoying a near monopoly in oil and gas production and distribution. Thus, it has no interest in assisting the continual growth of renewable energy sources or energy-saving programs. Illegal logging and deforestation continue, hampering pro-active moves of the domestic green industry (Viola, 2011).

In Indonesia, the domestic green industry sector is very small, hardly taking part in the respective global markets. On the one hand, awareness among parts of business is slowly rising: The Indonesian Chamber of Commerce (Kadin) has taken on the topic and urges the government to provide more support to pro-environmental business practice. Other business alliances followed suit. Coordination between the private sector and the government are deemed low in this regard. On the other hand, the awareness of climate change and its translation into action is much greater in multi-national corporations than in purely Indonesian companies (Breuer, 2011). The palm oil industry, the timber trade industry, and the two pulp and paper giants APP and APRIL are responsible for a large amount of the deforestation happening. These companies build their success on logging rainforest. In the past,

their blocking business coalitions have been dominant over smaller coalitions composed of national and international environmental civil society organizations that tried to influence national policy-making toward a change (Di Gregorio, 2011; Di Gregorio *et al.*, 2012).

In 2005, South Africa had no domestic green industry to speak of. Only in 2008, the country's first and only wind farm started operating. South African researchers also invented solar thin film panels that are being produced in Germany since 2008. Generally, the South African business sector is aware of climate change, but split on how much to engage. Eskom and the liquid chemical company Sasol are responsible for the major parts of South Africa's greenhouse gas emissions. They are therefore important veto players, although they are not unitary actors, as both pro- and contra-positions regarding climate change commitments exist within the companies. After 2007/8, a handful of big companies have taken the lead and started acting in South Africa, together with business associations such as the National Business Initiative (NBI). A second group of companies have only recently become aware of the climate change challenge and potentially started working on risk assessments. A third, large group of all other companies are either not really aware yet, or see the sole responsibility for acting to be a matter of the big GHG emitting companies only (Never, 2012c). A domestic green industry hardly exists, but emerging actors in renewable energy are challenging the interests of the minerals-energy-complex together with rising coal costs and electricity supply problems (Baker, 2011).

In Mexico, critics of a more proactive climate policy have been weakened after wide-ranging liberalizations of energy policies in the early 2000s. Considerable portions of existing oil and electricity prices have been privatized and energy prices for industry have been brought on a par with the international standard. The parastatal oil company Pemex, however, has not been privatized. Efforts to reform the oil sector in 2008 to let foreign investors partner with Pemex have not been very successful this far (Valenzuela & Qi, 2012). A domestic renewable energy and clean technology industry is only developing in the last few years.

Korea is, like China, a relatively over-industrialized country with a big share of energy- and emission-intensive industries. In spite of its insignificance in the global renewable energy markets (Ren21, 2012, 2007), Korea is well positioned internationally to benefit from green growth. This is due to its good record in the development of environmental innovations, especially in the automotive sectors, and its governmental incentive scheme under the Green Growth strategy. The latter is in place since 2008. Korea is already a world leader in the production of lithium batteries and the government is supporting the production of electric and hybrid cars. Parts of industry feared the introduction of an emission trading system and potential dangers to competitiveness resulting from it, thus advocating against more severe mitigation policies. The cap-and-trade system was voted on in 2012 and will be introduced in 2015. Despite its potential in clean technology innovations, the development of an influential domestic green industry is still at an early stage, somewhat hampering Korea's climate performance (OECD, 2010; OECD, 2012).

While a weakness of the domestic green industry is not conducive to performance levels of the BASIC+, its relative strength does not automatically lead to better performance either. For South Africa and Indonesia, their underdeveloped domestic green industry is becoming more and more of an obstacle, as global renewable energy and green technology markets gain in significance.

(b) *Hypothesis 2: The relevance of fossil fuels and financial capacity*

The result that an unfavorable ratio of fossil fuels to financial capacity is both a necessary and a sufficient condition (together with weak NGO influence) for weak climate policy performance shows that the BASIC+ really struggle with this factor, more than with any of the others. Overcoming the dependence on usually more affordable fossil fuels such as coal and switching to more expensive renewable or nuclear energy sources is difficult in itself already. This difficulty amplifies if parts of domestic industry depend on reasonable energy and electricity prices to remain competitive and electricity prices for the poor have to be subsidized. Climate mitigation, energy saving, and conservation policies are costly, first of all by making partly obsolete former investments on less climate friendly power plants and energy-intensive factories. As a substantial share of new investments has to be borne by the public exchequer, for instance by giving tax incentives for importing cleaner technologies, fiscal scope has a significant constraining effect on "green investments."

Yet differences among the BASIC+ exist in terms of the availability and quality of domestic fossil fuels and the financial capacity to change toward a low-carbon development path. Among the seven emerging economies analyzed, only Korea stands out clearly with a high financial capacity. It leads to a favorable ratio of fossil fuels to financial leverage in both 2010 and 2005, followed by Mexico and Brazil in 2010.

Korea and Mexico are both OECD countries and perform very well economically. Growth in Korea has fallen compared to earlier times, but the positive overall fiscal balance, income per capita, and GDP-PPP levels are very comfortable. The low amount of coal and oil produced in the country generally enables a good climate policy performance, only moderated by natural gas production and fossil fuel imports. The size of Mexico's economy and its relatively high income per capita income would have allowed proactive climate policies, but the negative fiscal balance is constraining to some extent. Similar to Brazil, Mexico has to pay a lower price for a switch to a cleaner development path. More than a fifth of electricity is already produced from clean sources. Compared to the other BASIC+, the growth of emissions is rather small. This rate has also been declining in the last two decades, an indication that Mexico is near the tipping point of emission growth (Valenzuela & Qi, 2012). Reasons for its moderate climate policy performance therefore have to be found among the other conditions tested.

The other five emerging economies all have similar problems. China's financial capacity in terms of its GDP allows for a comparatively easy financing of mitigation problems. But low per capita income and lower than average government fiscal balance also restricts governmental expenditure on mitigation measures. Moreover, the sheer amount of fossil fuels produced, coupled to a very high and increasing energy demand, limited the effectiveness of the measures in the past. In mid-term, China has good prospects to perform better if energy efficiency and renewable energy programs as well as economic growth continue, consolidating high foreign exchange reserves and a broad tax base.

India and South Africa are in a similar situation. Despite high economic growth rates, India's ability to finance a large shift to low-carbon development was highly constrained because of persistently low overall fiscal balance, deriving from large budget deficits. Even though some experts agree that India can come up with the finances to adapt to climate change impacts by itself (Never, 2012c), finance remains a seri-

ous problem. Low per capita income and negative fiscal balances limit the leverage gained by the size of the economy and its growth rates. While India produces large amounts of fossil fuels, it also has to import considerable amounts of coal to use for electricity generation as domestic coal is of lower quality. The shift to more renewable energies may thus prove to be both resource and cost-efficient in the long run. South Africa faces the additional challenges of moderate economic growth and an even higher dependence of key industry on low energy and electricity prices. Higher income levels per capita allow for a better ratio of fossil fuels to financial capacity than in India, but actual shifts away from fossil fuels are not easier. Since the coal found in South African mines is of better quality and the current domestic green industry is still in its infancy, making a switch to low-carbon development path more difficult compared to India from this perspective.

Both Brazil and Indonesia managed to increase their mitigative capacities during 2005–10, albeit starting from different levels. In 2005, both countries suffered from a substantial public debt, but only Brazil had a very negative overall fiscal balance. Social expenditures absorbed a large part of fiscal leeway made possible by the growing Brazilian economy, moderate per capita income, and a budget surplus. Brazil's federal institutional set-up is more an asset than a liability, as more prosperous states have the means and the will to switch to more sustainable policies. This applies especially to Sao Paolo, a state which adopted its own law in 2009, requiring a 20% reduction in GHG emissions.

Indonesia only marginally managed to turn its good economic performance during the last decade into better climate policy performance. The country produced a lot more fossil fuels than Brazil in both 2005 and 2010 and has much lower per capita income in both years. This severely constrains potential leverage made available by nearly level general fiscal balances. Poverty levels in Indonesia are thus closer to the situation in India than to Brazil. The high amounts of fossil fuels produced as well as the continuing deforestation impede better performance. The implementation of laws and policies aimed at halting deforestation are a major problem in both Brazil and Indonesia, partly exacerbated by the behavior of domestic actors and interest coalitions (see e.g., Mulyani & Jepson, 2013). We discuss this in more detail in the next sections.

(c) *Hypothesis 3: International and domestic behavior*

In the international negotiations, the BASIC group behaves not as stable and homogeneous as might be expected (Hallding *et al.*, 2011). Brazil and South Africa are generally more open to mitigation commitments. Brazilian and South African experts favor a different burden-sharing approach in their calculations than China and India, who base their calculations on a global carbon budget (Basic Experts., 2011). The level of voluntary mitigation commitments in the so called Copenhagen Accord differs: China and India offered to reduce their emission intensity per unit of GDP by 40–45% (China) and 20–25% (India) until 2020. The other five countries pledged to reduce their emissions compared to a business as usual trajectory by 36–38% (Brazil), 34% (South Africa), 30%, (Mexico, Korea) and 26% (Indonesia) until 2020. These commitments are nonbinding, so that higher pledges by themselves do not say much about deeper normative shifts yet.

Indeed, the concrete behavior of the BASIC+ and the influence of previous negotiation positions vary, indicating a difference in the congruence of international and domestic norms. A weak influence of traditional negotiation positions (=*Trad_Negotiations*, inverse calibration) and the weak influence of the domestic green industry (~*Renewables*) explain the cases South Africa 2010, Indonesia 2010, and both Korean as well as both Mexican cases. Korea performs rather well in both years (0.6, 0.6) and Mexico in 2010 as well so that these results have to be carefully analyzed.

This result for South Africa is somewhat puzzling. In contrast to the other BASIC+, South Africa's international commitment to climate change is more ambitious than current domestic policy. Internationally, the country is caught between its ambitions between (1) the ambition to belong to the big emerging economies, (2) the goal to legitimate itself as a representative of the poorer African countries and (3) the will to present itself as a reliable partner to the North. The latter ambition needs to be understood in a broader economic foreign policy frame as well (Atteridge, 2011). Internationally, South Africa kept to the general positions of the G-77 for quite a long time, although already in 2005, more proactive positions existed at the domestic level (Koch, Vogel, & Patel, 2007). Domestic climate governance is driven by a club-like structure of different communities of practice (Never, 2012b). They are composed of individual actors from the bureaucracy, primarily the Department of Environmental Affairs, individual business actors, scientists, and a very limited number of environmental NGOs. They are also at least partly responsible for the direction South Africa takes at the international level. Despite a number of strategies and policies under way toward implementation (Never, 2012b), attaining the pledge made in the Copenhagen Accord will be very challenging. For South Africa, the hypothesis on normative congruence has to be falsified. Other factors such as the unfavorable ratio of fossil fuels to financial capacity affect its performance more strongly.

The Indonesian government played a constructive role in the dialog between the industrialized and developing countries as the host of the COP in 2007. This facilitated the agreement on the so-called Bali Roadmap. At the same time, the Indonesian government passed a National Action Plan Addressing Climate Change, which served as a general guide to implement climate change into national development plans (Republic of Indonesia, 2007). Apart from this active role at COP 13, Indonesia is a rather quiet international player compared to the other BASIC+. In a reaction to the slow progress of REDD in the international climate regime, the country has set up a separate national trust fund to attract external funding, similar to Brazil. Several domestic actions plans have been published in 2010 and 2011 only, so that implementation has hardly happened yet. Arguably, the most important domestic policy instrument concerning climate and forest governance is the so-called forest moratorium, issued in 2011. It contains a set of presidential instructions to various ministries on new forestry concessions for a two-year period. Due to its confusing definitions and a variety of exceptions, it is highly contested among domestic actors (Murdiyarso *et al.*, 2011). The weak influence of traditional negotiation positions is thus likely to reflect the beginning of a turn away from an international solution by the government and the prevalence of domestic forest challenges.

In 2005, neither Korea nor Mexico stood out as particularly active players in the international climate negotiations. Relevant domestic mitigation actions in both countries happened after 2007/8 only. A voluntary agreement system to encourage energy efficiency in Korea's industrial sector is particularly relevant, having been partly converted to a mandatory program in 2010 (OECD, 2010). Korea only became seriously committed to mitigating climate change after the onset of the international financial crisis. In 2009, the President proclaimed green growth as the leading vision for the next 50 years. The country

also adopted an ambitious National Strategy for Green Growth (2009–50) and a mid-term Five Year Plan detailing interim measures. In the past, Korea's normative positions on climate change have been used to fit and frame the national economic interests of the respective party in government, for instance being counted as a NonAnnex I country under the Kyoto Protocol. Together with Mexico, Korea initially aimed to be a bridge-builder between the industrialized and developing countries (von der Goltz, 2009). As an OECD-country and member of the Environmental Integrity Group in the international climate negotiations, Korean policymakers' and institutions did not internalize the traditional, blocking negotiation position of developing countries as much. Moreover, the shift to the Green Growth strategy counts as a strategic move to provide a new political vision and the goal to be among the world leaders in an important international field again (Rhee, Jang, & Chung, 2012; Shim, 2010). Rhee *et al.* argue that Korea's government takes the new trend as a shift in the business environment to which it has to adapt, but without accompanying it with a deeper philosophical change (Rhee *et al.*, 2012: 32). In this sense, the weak (=*Trad_Negotiations*, inverse calibration) or partly absent influence of what we defined as the traditional negotiation position here makes the normative congruence between the international and the domestic now easier to attain for Korea.

Recently, Mexico acted more flexibly in the international negotiations than the other BASIC+. While insisting on the principle of global equity, the government had no objections against a more ambitious framework than the Kyoto Protocol and the inclusion of (voluntary) commitments by developing countries, at least of those emitting large quantities. As a member of the Environmental Integrity Group, Mexico shifted from the G-77 blocking position quite early, albeit without being an active, pushing force for binding actions in the early 2000s. Weak spots in the Mexican climate stand are (a) that the government makes own commitments dependent on financial and technological support from developed countries "on an unprecedented scale" (Gobierno Federal., 2009), (b) that Mexico is starting from a rather low base in terms of energy efficiency and the development of renewable energies, (c) that energy prices for individual consumers are still far below economic parity. The move toward more proactive behavior in the negotiations, especially while hosting the COP 2010 in Cancun (IISD/ENB, various years), is reflected in a shift in domestic actions. The legacy of the traditionally blocking G-77 position thus did not resonate for long, so that a shift toward a more active role internationally and domestically was relatively easy to achieve. This played out positively for Mexican climate policy performance.

In India, conflicting views on committing to proactive climate policies internationally exist, but these are voiced only domestically. They concern the differing assumptions about the pay-off of the traditional position of "common, but differentiated responsibilities," whereby India would profit from the support of a large number of other developing countries. Some domestic actors now take a different view, leading to a split of three groups: "growth first stonewallers," "progressive realists", and "progressive internationalists" (Dubash, 2009; Never, 2012a). The environmental minister Jairam Ramesh managed to break the influence of a number of bureaucrats and diplomats responsible for India's international defensive stand (Never, 2012a). His dismissal in July 2011 reflected the normative struggle that is ongoing in India domestically (Betz, 2012). The new minister Jayanthi Natarajan led India back to a rather blocking position in the international negotiations, strengthening the legacy of the old negotiation position again.

For this hypothesis on the legacy of the traditional position in the international negotiations as an indicator for norm congruence, the Brazilian and Chinese cases are unremarkable. In 2005, both countries had a very defensive position in the negotiations. In 2010, this had begun to change, but real shifts only happened in 2011/12—outside the period analyzed in this paper. Gradual shifts in the international positioning corresponded to domestic activity levels in energy and climate policies (Hochstetler & Viola, 2012; Richerzhagen & Scholz, 2008), even though this did not translate into better performance levels for Brazil. Despite a significant drop in the annual deforestation rate during 2005–10, deforestation and illegal logging remain difficult to control.

In sum, the influence of the traditional international position on the domestic level is not as strong anymore, even in those countries who still advocate for it. Indeed, domestic actions are being undertaken and lead to slow shifts in performance levels regardless of the state of play in the UNFCCC negotiations. To some extent, the international negotiations have lost in importance in the actual practice of climate governance. More relevant framings can be found in domestic contexts. The overall relevance of this hypothesis on the influence of the traditional negotiation position on performance levels is limited due to its falsification for some of our cases.

(d) *Hypothesis 4: The ambiguous role of domestic environmental civil society*

The results of the fsQCA point toward an ambiguous role of environmental civil society for the climate policy performance in the BASIC+. In some of the BASIC+ in 2005, public decisions impacting environmental performance may have been taken irrespective of the activities of civil society, especially as early as 2005 when climate change did not reach much public attention. Alternatively, it is possible that less public participation of environmental civil society speeds up the process for actions by governments and/or business in some instances.

Since the 1990s, political space has been opening for participation of a rapidly increasing number of environmental NGOs in China. Public protests against pollution and dam construction have grown tremendously together with respective court cases. It is true that activities of NGOs are still tightly controlled by public authorities in China but not always with the desired efficiency. Environmental NGOs have become a valuable ally of environmental protection agencies in their fight against polluters (be that municipalities or firms) or in their battle with line ministries (Alpermann, 2010; Otsuka, 2010). NGOs certainly mostly oppose deficits of domestic/local policies and do respect the overall supremacy of the Communist party. Standing somewhat precariously between state and society, they are however not only echoing the official stance in international climate negotiations anymore.

In India, environmental civil society also presents a mixed picture. There are a multitude of environmental NGOs which are not always free from state or party influence. They pick up environmental scandals and bring them to court (supported by environment-friendly higher courts and the widely used instrument of public litigation). When it comes to India's international position, some of these same NGOs support the traditional climate stance of the government, even though they may advocate for a more aggressive domestic climate policy (Betz, 2012; Dubochet, 2011).

In Indonesia, the freedom to participate and engage in political action has increased for civil society organizations in the post-Suharto era. Environmental civil society is quite vocal

in Indonesia regarding deforestation and REDD. A number of both transnational (e.g., WWf, Rainforest Action Network) and national organizations (e.g., WALHI, Sawit Watch, Telepak, Indonesia Civil Society Forum for Climate Justice) are active in awareness raising, campaigning, and filing lawsuits against companies violating laws. For instance, WALHI cooperated with the REDD+ task to monitor the forest moratorium, thus forcing the task force to fine the Aceh local government for falsely issuing a logging permit. Environmental civil society organizations are also playing an important role in directing attention to indigenous rights and the inclusion of safeguards into REDD+ schemes. However, up to now, their power in actually influencing the Indonesian government has been contentious and has often been overridden by informal lobbying of those companies that benefit from legal and illegal logging (DiGregrorio *et al.*, 2012; Di Gregorio, 2011).

Overall, the South African environmental civil society is vocal, but their power or strength compared to other domestic actors is limited. A number of environmental NGOs are represented in the National Committee on Climate Change. However, this forum is generally regarded as a one-way information platform for government than a true discussion forum (Never, 2012c). The transnational NGO WWF, the national organizations Earthlife Africa and Conservation Action Partnership as well as SouthSouthNorth are part of the different communities of practice shaping South Africa's domestic climate governance (Never, 2012b). They thus have at least an indirect impact on South Africa's international commitment. In contrast to the other BASIC+, South Africa's international commitment to climate change is more ambitious than current domestic policy.

Environmental civil society is very active in Brazil. Moreover, the growing influence of a green party supports the shift toward more climate political engagement. The candidate of the green party showed an impressive record in the last presidential elections. To neutralize the growing popularity of the green party, the government shifted to a more constructive climate and forest policy and raised the influence of the Ministry of the Environment. A more climate-friendly policy is supported by a growing scene of very vocal NGOs, asking for a complete overhaul of traditional environmental policies, but also from intellectuals and powerful corporate interests, among them even mining companies and the agrobusiness (Stockholm Environment Institute (SEI), 2010). The Brazilian government also needs to act on the growing popular resistance against dam construction for hydropower. Environmental NGOs working on forest conservation joined forces with state agencies in awareness raising to keep large scale-agricultural companies out of the Amazon (Hochstetler & Viola, 2012).

Until the year 2000, the Mexican state was built around a predominant political party, which transformed large sectors of the civil society into state institutions. As a result, independent organizations sprang up, dissatisfied with the authoritarian and corporatist character of Mexico's polity. There are more than 10,000 NGOs operating in Mexico of which around 10 percent work on environmental topics. Their impact is obstructed by intermittent state control and repression, but more so because of their precarious financial base and their limited political influence. Participation channels for them are still rather narrow (CIVICUS, 2010).

More than in the other BASIC+, the public in Korea is informed about climate change and is afraid of its local repercussions (Wakefield, 2010). In consequence, a large and vivid environmental NGO-scene has already developed in the late 1990s. Its influence on Korea's climate and environmental policies has—according to a close observer—however been tempered because this movement was allied with former opposition parties, now no longer in charge of government (Haddad, 2011). The question is also if Korea really needs a strong green movement to support climate-friendly policies, as green growth has become a poster-child of government and is institutionalized strongly in a Presidential Committee on Green Growth, chaired by the President and composed of all important political figures (OECD, 2012).

This discussion shows that the ambiguous influence of civil society organizations in emerging countries results from the different roles that they occupy domestically: Some NGOs take offense at local environmental problems and hazards, but hardly engage in national/international climate issues, either as a consequence of limited interests in global problems or censorship (China). Others are not really independent, but align with the governmental position internationally or are financially dependent on transnational partners and international donors. In fully consolidated democracies, environmental NGOs are not the only group of actors demanding mitigation actions, so that their influence on the government may be reduced by these other players (Bernauer, Böhmelt, & Koubi, 2013). Finally, in some of the BASIC+, climate policy decisions were taken either relatively independent of environmental civil society influence (India) or NGO influence was limited to a handful of representatives taking part in the relevant networks and/or communities of practice (South Africa).

Given the relatively low coverage values for the necessary condition "NGO" in this paper, more empirical observations on more cases would be necessary to decide whether the weak influence of environmental civil society is a relevant or irrelevant necessary condition.

6. CONCLUSION

This paper provided a fsQCA on the climate policy performance of seven emerging economies, split into a temporal comparison of 14 cases. We tested the influence of the domestic green industry, the legacy of the traditional international negotiation position, the ratio of fossil fuels to financial capacity, and the influence of environmental civil society on changes in emission levels. In 2010, China, India, South Korea, and Mexico performed rather well compared to Indonesia, Brazil in South Africa. In 2005, only South Korea performed relatively well.

An unfavorable ratio of domestic fossil fuel production to the financial capacity of a country is a necessary condition for weak performance, while the combination of this ratio with a weak influence of NGOs is a sufficient condition for weak performance. This confirms our hypothesis that more fossil fuel production and less financial capacity impede performance. The hypothesis that less participation of environmental civil society leads to weak performance could only partially confirmed because environmental NGOs play an ambiguous role. Taking the results of this fsQCA only, strong NGO influence may be responsible for weak performance levels. This ambiguous, somewhat counterintuitive influence of environmental civil society reflects the different roles they take in the respective emerging economies. Expanding the test to more cases is required to find out if this strong influence is really a relevant or a trivial necessary condition for climate policy performance.

A second path may explain performance levels that would also have to be tested on an extended number of cases: A weak domestic green industry combined with a weak influence of the traditional, blocking position in the international negotiations could be sufficient to explain rather low

performance levels. These somewhat counterintuitive results have two meanings: First, a major share in renewable energy markets alone does not suffice to move toward better climate performance and low-carbon development, if the production of fossil fuels still soars/and or the financial capacity of a country is limited. This applies to China and India and somewhat less to Brazil. In turn, the absence or slow development of a domestic green industry is becoming more of an obstacle over time for countries such as Indonesia and South Africa. Second, moving away from the traditional blocking position earlier than the other emerging economies does not guarantee better performance, for instance for South Africa in 2010—at least as long as international commitments remain nonbinding. In many of our cases, the recent, slow shifts in the previously blocking position of the BASIC+ in the UNFCCC negotiations are mirrored by corresponding domestic shifts, allowing for a normative congruence. Generally, the international level is playing a less important role for the domestic behavior of countries. Whether this means that the current and prospective international climate regime is irrelevant for environmental outcomes is a question for further research on more cases.

NOTES

1. To check the robustness of this procedure, we conducted alternative calibrations with the amount of fossil fuels produced per capita and per unit GDP. They led to similar results but are *per se* closely related to the carbon intensity of the economy, putting the separation of conditions and outcome at risk. Data on the percentage of fossil fuel production in overall energy supply were not available for all cases.

2. http://www.iucn.org/about/union/members/who_members/members_database/ (accessed 18.04.2013).

3. Clean Development Mechanism under the Kyoto Protocol.

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APPENDIX A. ANNEX

See Tables 7 and 8.

Table 7. *Calculation of the condition "Ratio of fossil fuels to financial capacity" (I)*

	Coal/peat production (after imports/exports)*	Crude oil production (after imports/exports)*	Natural gas production (after imports/exports)*	SUM	QCA value Fossil fuels	*Calibration key*
2010						
Brazil	14.19	109.79	23.02	147	0.6	*1 = 30mtoe*
China	1704.41	477.48	91.7	2273.59	0	*0.8 = 120*
India	291.82	166.21	52.73	510.67	0	*0.6 = 210*
South Africa	100.73	23.48	2.95	127.16	0.6	*0.5 = 218*
South Korea	73.91	109.5	39.77	223.18	0.4	*0.4 = 300*
Indonesia	30.84	67.92	38.45	137.21	0.6	*0.2 = 390*
Mexico	8.8	101.33	53.6	163.73	0.6	*0 = 480*
Average without China				218.175		
2005						
Brazil	13.09	91.68	16.72	121.49	0.6	*1 = 30mtoe*
China	1163.18	338.53	40.96	1542.67	0	*0.8 = 105*
India	212.84	128.93	31.75	373.52	0.2	*0.6 = 180*
South Africa	91.94	15.85	2.76	110.55	0.6	*0.5 = 196*
South Korea	51.59	103.03	29.98	184.60	0.4	*0.4 = 255*
Indonesia	23.18	66.11	29.52	118.81	0.6	*0.2 = 330*
Mexico	8.16	108.68	44.89	161.73	0.6	*0 = 405*
Average without China				196.87		

Sources: IEA. (2008), IEA. (2012a, IEA. (2012b) and IMF (2012).
*Million tonnes of oil equivalent.

Table 8. *Calculation of the condition "Ratio of fossil fuels to financial capacity" (II)*

	General government fiscal balance	QCA value	GDP/capita (PPP, current int. dollar)	QCA value2	GDP-PPP (billion current int. dollar) as reference	Overall QCA finance	QCA fossil	*QCA Fossil_Finance*
2010	Average 2006–10							
Brazil	−2.3	0.2	11,216.095	0.6	2,186.538	0.6	0.6	0.6
China	−1	0.4	7,553.377	0.4	10,128.399	0.6	0	0.4
India	−7.7	0	3,378.146	0	4,021.765	0.2	0	0
South Africa	−1.7	0.4	10,562.597	0.6	528.035	0.4	0.6	0.4
South Korea	1.34	0.8	29,717.179	1	1,468.326	0.8	0.4	0.6
Indonesia	−0.7	0.6	4,353.813	0.2	1,034.646	0.4	0.6	0.4
Mexico	−2.5	0.2	13,945.353	0.8	1,566.306	0.6	0.6	0.6
Average of 30 Emerging Markets	−0.8		World: 9,854					
2005	Average 2000+2005							
Brazil	−3.4	0.4	8,519.970	0.4	1,584.604	0.4	0.6	0.4
China	−2.3	0.4	4,102.495	0.2	5,364.258	0.4	0	0.2
India	−8.3	0	2,185.165	0	2,425.533	0	0.2	0
South Africa	−0.8	0.6	8,653.708	0.4	405.757	0.4	0.6	0.4
South Korea	2.2	1	22,783.234	1	1,096.741	1	0.4	0.6
Indonesia	−0.7	0.6	3,185.045	0.2	705.162	0.4	0.6	0.4
Mexico	−2.3	0.4	12,483.062	0.6	1,297.569	0.4	0.6	0.4
Average of 30 Emerging Markets	−2		World: 8,853					

Sources: IMF Financial Monitor (various years), World Bank Development indicators.