

Climate-Change Pledges, Actions and Progress *

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Abstract

This paper seeks to assess countries' compliance with targets pledged in international climate-change agreements and to study the impact of different agreements and specific climate laws and policies on greenhouse-gas emissions. To do so, it compiles and codifies data on international agreements and specific measures enacted at the national and sub-national levels. It finds that compliance with targets has been mixed. Still, both signing and having quantifiable targets set in the context of the Kyoto Protocol and the Copenhagen Accord have led to significant reductions in emissions in signatory countries. Effects from the Paris Agreement are not yet evident in the data. Carbon taxes and the introduction of emission-trading schemes are associated with material reductions in emissions. Other climate laws or policies do not appear to have, individually, a significant effect on emissions; however, the number of climate-related laws is associated with reductions in emissions. Overall, much more ambitious targets would be needed to offset the larger impact of economic and population growth on emissions.

Key words: emissions, climate change, climate agreements, climate-change mitigation.

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1 Introduction

Greenhouse-gas (GHG) emissions since the Industrial Revolution have caused material changes to our environment. The cumulative flow of emissions has altered the stock of gases in the atmosphere and is thought to be the most likely cause of global warming and extreme-weather events. As such, GHG emissions are increasingly becoming one of the biggest threats to lives and livelihoods. In response to this escalating problem, three international treaties have been signed, with the overarching aim of reducing emissions: The Kyoto Protocol, the Copenhagen Accord, and the Paris Agreement. The pledges made by countries in each of the international treaties differ in the coverage, timelines and targets set by the various signatories. Moreover, in working towards their targets, countries resorted to different policies and laws over time.

This paper seeks to quantitatively assess countries' compliance with their stated targets in each of the international agreements and to study the impact on GHG emissions of each of the agreements, as well as the various policies and laws enacted over time. To do so, the paper combines and codifies historical sectoral- and country-level data on emissions and activity, along with information on individual countries' stated goals in each of the treaties, and climate-action laws and policies enacted over time. We use the data in three sets of exercises. In the first exercise, we compute comparable individual countries' targets pledged in each of the international agreements and compare those targets with countries' actual emission reductions over time. In a second exercise, we use regression analysis to study the impact on emissions stemming from signing each of the three climate-change agreements and from stating quantifiable targets; the regression analysis also studies the effect of specific climate-related measures, including carbon taxes and emission-trading schemes. Finally, in a third exercise, we use local projection methods (Jorda 2005) to investigate the dynamic responses of emissions to the different agreements and specific policies.

To set the stage, the paper starts by documenting the evolution of total and per capita emissions across different countries since the 1970s, underscoring their main

covariates. The trends in emissions are tightly associated with activity and population growth. In absolute levels, the top emitters since the 1970s have been China, the United States, Russia, Japan, Germany and Canada, with Saudi Arabia, South Korea, India, and Iran joining more recently to the list. Among these top emitters, six are also among the top-ten oil producing nations. Other oil-producing countries also record very high per capita emissions, but they make smaller contributions to total emissions.

Our paper finds that signing the Kyoto Protocol and the Copenhagen Accord has led to a significant reduction in emissions, whereas the Paris Agreement does not appear to have led (yet) to any significant reduction in emissions. Moreover, having quantifiable targets helped further in reducing emissions in the context of the Copenhagen Accord. (In the Kyoto Protocol most countries had quantifiable countries, whereas in the Copenhagen Accord more than 40 percent of the signatory countries did not specify numerical targets). Of all climate-related measures, two stand out as having a material impact in emission reductions: carbon taxes and the introduction of emission-trading schemes (ETS). Other specific climate-related laws or policies do not appear to have, individually, a significant effect on emissions. However, the total number of climate-related laws shows a significant impact on emission reductions.

Overall, compliance with emission-reduction targets has been mixed, with several countries undershooting their targets. It is clear that much more ambitious targets and stricter compliance would be needed to offset the larger impact of economic and population growth on emissions.

The finding that signing and having quantifiable targets matter has an interesting parallel in the micro-evidence presented by Ramadorai and Zeni (2020); using data from a sample of North American public firms, the authors find that firms that consistently report plans for future emission reduction and abatement exhibit more consistent reductions in emissions than firms that do not. (They also provide evidence that the Paris announcement had a significant impact on carbon abatement activities among these firms; in contrast, we do not see an effect from the Paris agreement in the aggregate data.) The importance of carbon taxes in re-

ducing emissions over time and across countries is consistent with recent work by Metcalf (2019); using data on Canadian provinces over the 1990-2016 time period, he finds evidence of a significant negative impact of the British Columbia carbon tax on emissions.¹ Our findings on carbon taxes support the conclusions from Hassler, Krusell and Nycander (2016) emphasising the importance of carbon taxes; using a quantitative model, the authors argue that while the optimal carbon tax is relatively modest, carbon taxes are preferable over alternative policies such as quantity-based systems or subsidies to green technology.²

The paper is organised as follows. The next Section explains the data used in this paper. Section 3 discusses the trends in emissions over the 1970-2018 period. Section 4 provides a characterization of the three international climate-change agreements, computes country-specific targets pledged in each of the agreements and contrasts the targeted emissions pledged with actual emissions. It then uses regression analysis to assess the impact of the agreements on emissions and the role of having quantifiable targets. Section 5 studies the impact of individual climate-related laws and policies on emissions. Section 6 offers concluding remarks.

2 Data

This paper compiles and codifies data from a number of different sources. In this section we describe the sources of data which we use in subsequent sections to construct the variables in the analysis.

2.1 Emissions

The paper uses historical emissions data from two sources. The first is the Climate Analysis Indicators Tool (CAIT) Climate Data Explorer compiled by the World Resources Institute (2017). We use this series in Section 4 to construct the targets pledged by each country in each of the international agreements. The original

¹See Metcalf (2019) for a survey of the literature on emission reduction impacts of carbon taxes.

²Hassler, Krusell, Olovsson and Reiter (2020) take the argument further using a quantitative integrated assessment model to show that carbon taxes that are based on overly-pessimistic views on the climate challenge (that is, higher carbon taxes) are less costly to welfare than taxes based on overly-optimistic views on climate change.

dataset records historical GHG emissions (which include carbon-dioxide, methane, nitrous oxide and fluoridated gases) for 196 countries, by sector, for eleven sectors (including energy, transportation, agriculture, industrial processes, land use changes, waste, etc.) from 1850 to 2014. As we explain in more detail in Section 4, we combine this data with the pledges made by countries in each of the international agreements. Given that emission-reduction pledges are often sector-specific (e.g., they state a targeted reduction in emissions for a specific sector), the data from this source were used to compute the implied reduction in emissions in metric tons of carbon dioxide equivalent (MTCO₂ eq) from the starting year of each pledge. This allowed us to have aggregate comparable targeted emission reductions across time and countries. Since the stated targets also differ across countries in terms of benchmark years (vis-a-vis which emission reductions are pledged), we make the targets comparable by computing the pledged reductions in terms of the emission levels in the starting year of each pledge. Because this dataset ends in 2014, we used the sectoral emissions in 2014 as the benchmark year for the Paris Pledge.

The second source of data on emissions, which we use both to assess compliance against the targets and in our regression analysis, come from the Emission Database for Global Atmospheric Research (EDGAR) compiled by Crippa et al. (2019). This database contains records of fossil CO₂ emissions from 212 countries over the 1970 through 2018 period. (While this dataset also reports GHG emissions by sector, the level of disaggregation is lower than in the CAIT database, with five sectors as opposed to eleven, which makes it somewhat less accurate for the computation of targeted emission reductions; hence our choice to use the CAIT sectoral data to compute targets.)

While EDGAR reports data on both GHG emissions and Fossil CO₂ emissions, our regressions focus on the latter, as the series of GHG emissions ends in 2015, while Fossil CO₂ runs until 2018. We show in the next section that both series are highly correlated since Fossil CO₂ emissions are the main component of GHG emissions. As explained in detail in Crippa et al. (2019), the series are computed using energy-balance statistics from the International Energy Agency (IEA), which are based on country-specific sectoral activity and technology-mix data, combined

with information on fuel consumption. For more information, we refer interested readers to Crippa et al. (2019).

2.2 Climate-change agreements

Information on climate-change agreements and climate-change pledges are obtained from the official documentation of the United Nations Framework Convention on Climate Change (UNFCCC), as well as processed information on the Copenhagen Accord and Paris Agreement from the CAIT Climate Data Explorer database. In order to quantify the emission-reduction pledges such that they could be comparable across countries, we augmented this information using estimated emissions under business-as-usual (BAU) scenarios from the World Resources Institute’s CAIT 2.0 (2015) and Fenhann’s Pledge Pipeline (2019). We complement this with information from the World Resources Institute (2018) and Climate Action Tracker (2020).

Given that the target for European Union (EU) countries is reported collectively for the union in these agreements, in order to calculate country-specific targets for EU countries, we use information from European Commission regulations that specify the distribution of emission-reduction targets for each country within the EU.

2.3 Climate-related laws and policies

Data on climate-related laws and policies were taken from the Grantham Research Institute’s Climate Change Laws of the World Database (2020). This database includes information on climate-related laws and policies that are currently in implementation for 198 countries. The data include the starting date and keywords for each law or policy. This database is supplemented with information on carbon price initiatives (carbon taxes and ETS) obtained from the World Bank’s Carbon Pricing Dashboard (2020). This dataset lists carbon taxes and ETS, together with their start date, jurisdiction and coverage.

2.4 Other variables

We obtain background data on real Gross Domestic Product (GDP), expressed in constant 2010 US\$, total and urban population, and oil rents as a percentage of GDP from the World Bank’s World Development Indicators database (2020).

3 Trends in emissions

To set the stage for our analysis, we start by describing the underlying trends in emissions over the period we analyse. Both total GHG emissions and fossil CO₂ emissions have both more than doubled over the 1970-2015(18) period.^{3,4} Countries’ per capita emissions show a different trend, with visible declines over the 1980s and 1990s followed by a rapid increase from 2000 onwards (see Figure 1). Since the time series on GHG emissions ends in 2015, for the remainder of the analysis, we use the series on fossil CO₂ emissions, which goes on to 2018. Historically, both series show a very high correlation, not least because fossil CO₂ is the main component of GHG emissions.

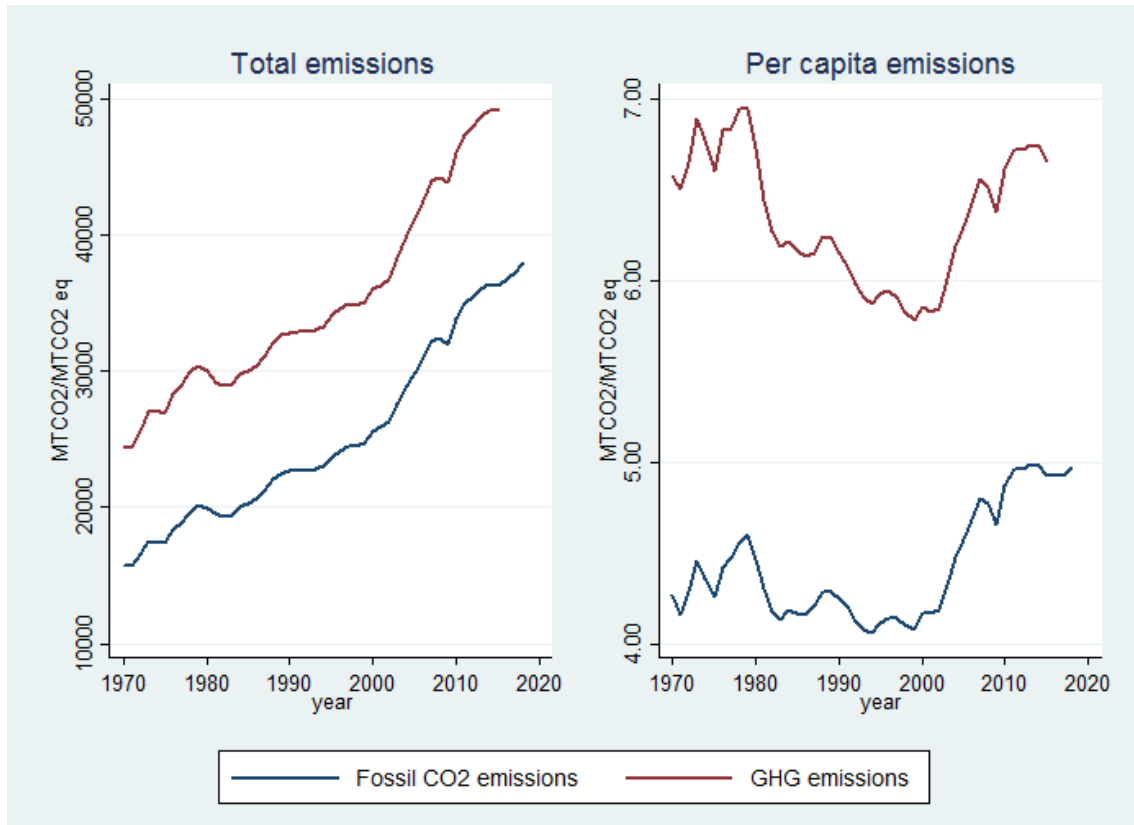
The total volume of emissions by region, plotted in Figure 2, indicates that the rise in total emissions over the past two decades has been driven by higher emissions from the Asia-Pacific region, primarily China. North America and Europe, which were the largest emitting regions until the 1990s, show emissions that appear to have stabilized since, and are gradually declining, albeit from high levels. Emissions from the remaining regions have also been increasing, particularly in the South Asian region, led most notably by India. Sub-Saharan Africa remains the region with the lowest total emissions. Interestingly, emissions from the Middle East (which is the largest oil-producing region in the world) remain at a much lower level than in the West or East Asia.

Per capita emissions, however, remain highest by far in North America, followed by Europe and Central Asia. These regions show a gradual decline since the 2000s.

³Fossil CO₂ emissions include sources from fossil fuel use (combustion, flaring), industrial processes (cement, steel, chemicals and urea) and product use. GHG emissions comprise fossil CO₂, CH₄, N₂O and F-gases.

⁴The latest year for which data on GHG emissions are available is 2015 and the latest year for fossil CO₂ emissions is 2018.

Figure 1: Trends in total and per capita emissions



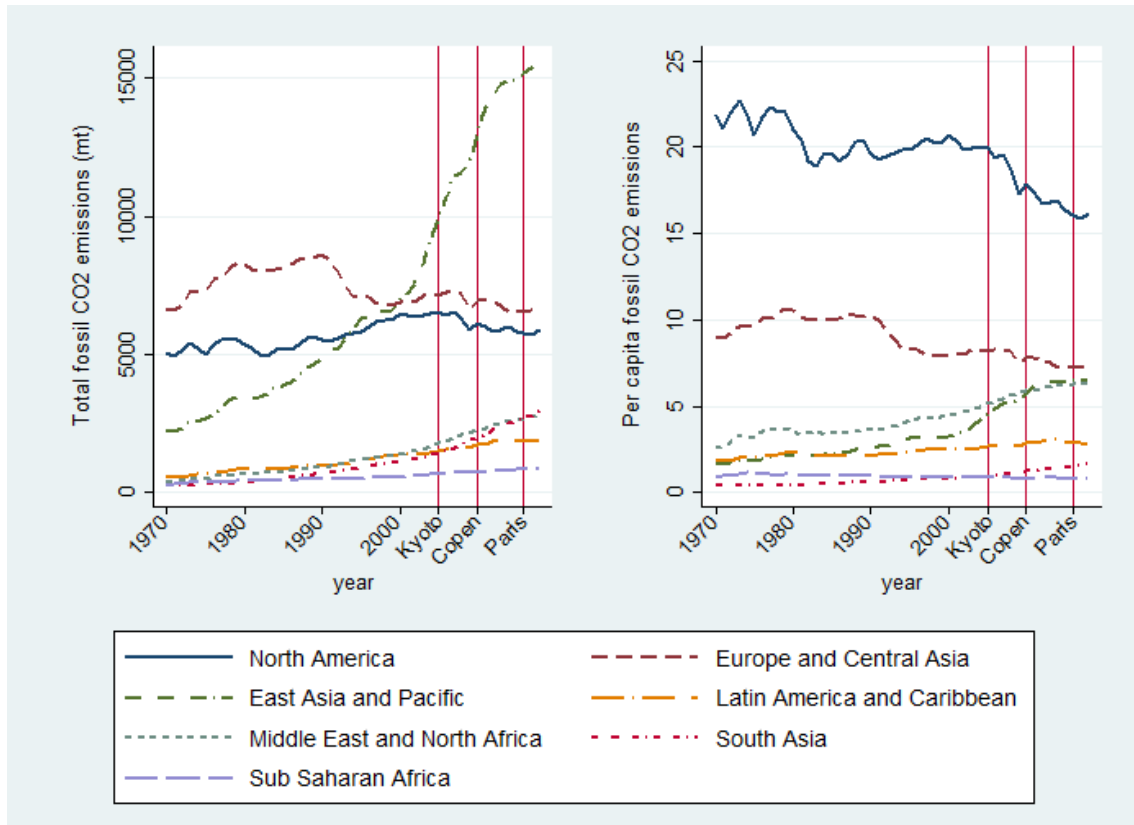
Note: The figures plot the trends in global fossil CO₂ emission and greenhouse gas emissions in total and per capita terms. Data on emissions are from EDGAR.

In contrast, East Asia and the Middle East seem to be converging upwards to the European level.

In order to identify the main contributors to fossil CO₂ emissions, we examine total and per capita emissions by country. Figure 3 plots per capita emissions against total emissions. The plot identifies a few countries that record high emissions on both total and per capita dimensions. Country codes are displayed for the countries in the top 10 percent of per capita emissions or total emissions in the respective year.

By and large, it is the same set of countries that appear in both 1970 and 2018. India and China are outliers in that they show relatively low per capita emissions but high total emissions. The United States records higher per capita emissions than either of these countries, being the largest emitter of fossil CO₂ in 1970 and the second highest in 2018. As Figure 4 shows, most high-income countries record

Figure 2: Trends in total and per capita emissions by region

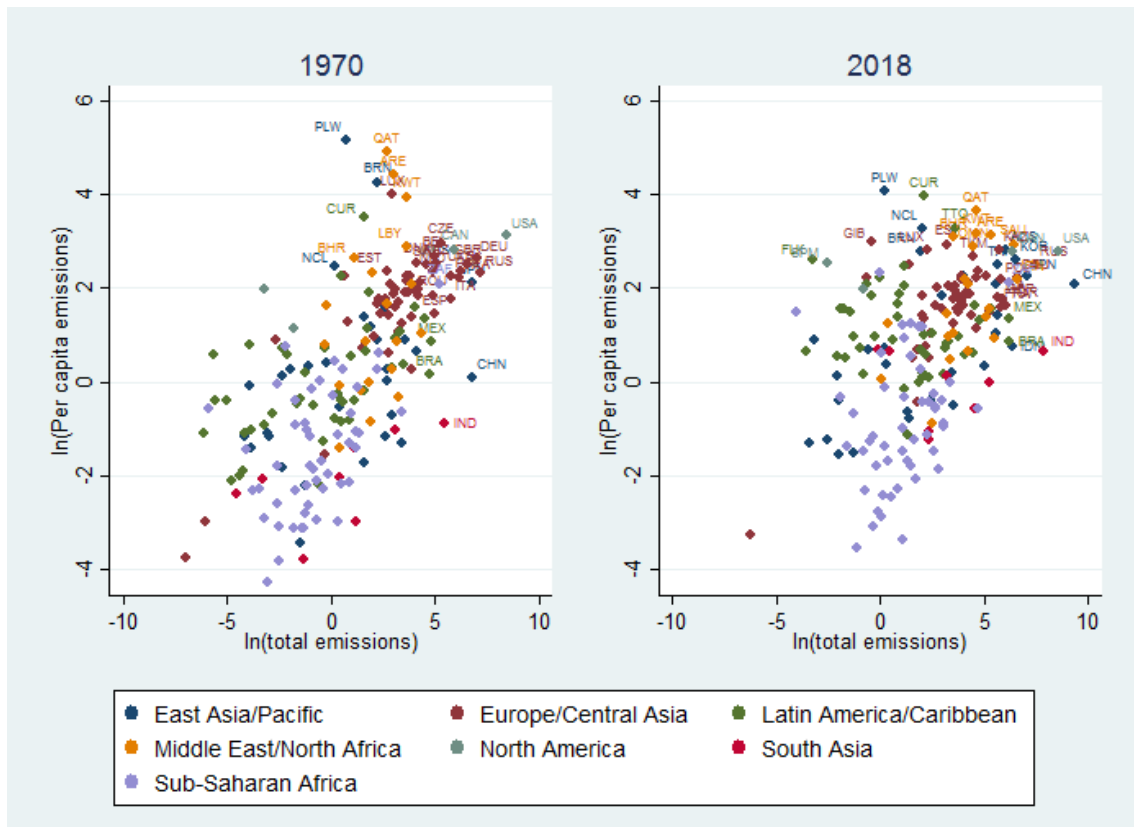


Note: The figures plot the trends in fossil CO₂ emissions in total and per capita terms by region, as defined by the World Bank. The vertical lines indicate the year of signing of the Kyoto, Copenhagen and Paris Agreements. Data on emissions are from EDGAR.

higher emissions, though the relationship with income is more strongly positive for per capita emissions. The clustering of points indicates that countries within Europe, North America, and Latin America are more homogeneous in terms of per capita income and emissions than countries in East and South Asia, Sub-Saharan Africa or the Middle East and North Africa.

Based on the countries identified as having the highest total emissions in 2018, we now examine the trends in the top-ten countries in terms of total emissions. These ten countries account for more than two-thirds (67.3 percent) of total emissions in 2018. Among them, the United States, Canada, Russia and China were also among the top-ten oil-producing countries in 2018; they were already among the top-ten emitters in 1970, which compounds their contribution to cumulative GHG emissions. Iran and Saudi Arabia, in turn, rank among the top-ten emitting countries in 2018 as well as among the top-ten oil-producing nations.

Figure 3: Total and per-capita emissions by country, 1970 and 2018

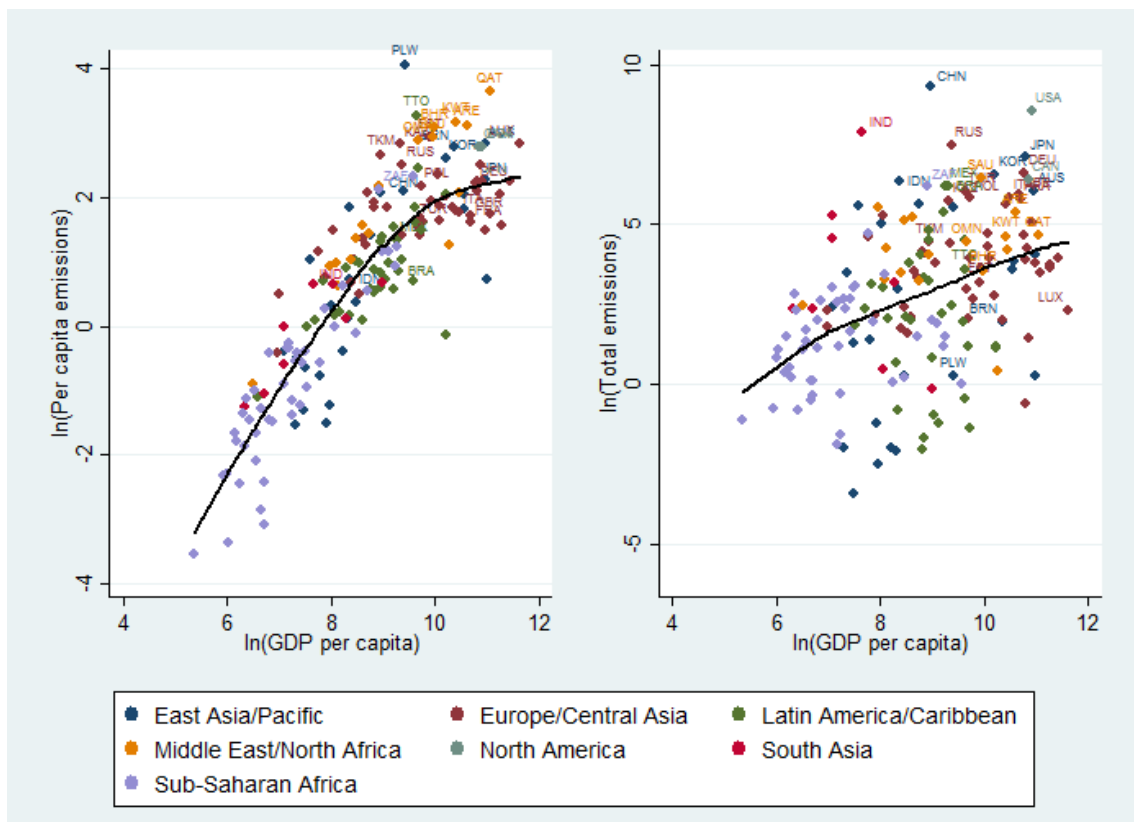


Note: The figures plot total emissions against per capita emissions (in logs) for 1970 and 2018. Data on emissions are from EDGAR.

Figure 5 shows that total emissions have grown very rapidly in most of these countries over the past five decades (note that the graph shows trends in the log of emissions), with particularly rapid growth in China, India, Iran, South Korea and Saudi Arabia. Total emissions in the remaining countries, notably the United States, Russia, Japan, and Canada have remained stable at very high levels. The only country in which total emissions have declined, albeit from a high starting position, is Germany. In terms of per capita emissions, the biggest emitters are Saudi Arabia, the United States and Canada, though per capita emissions have decreased slightly in Canada and the United States over the past decade. Steep increases in per capita emissions are observed in India, China, Iran and South Korea.

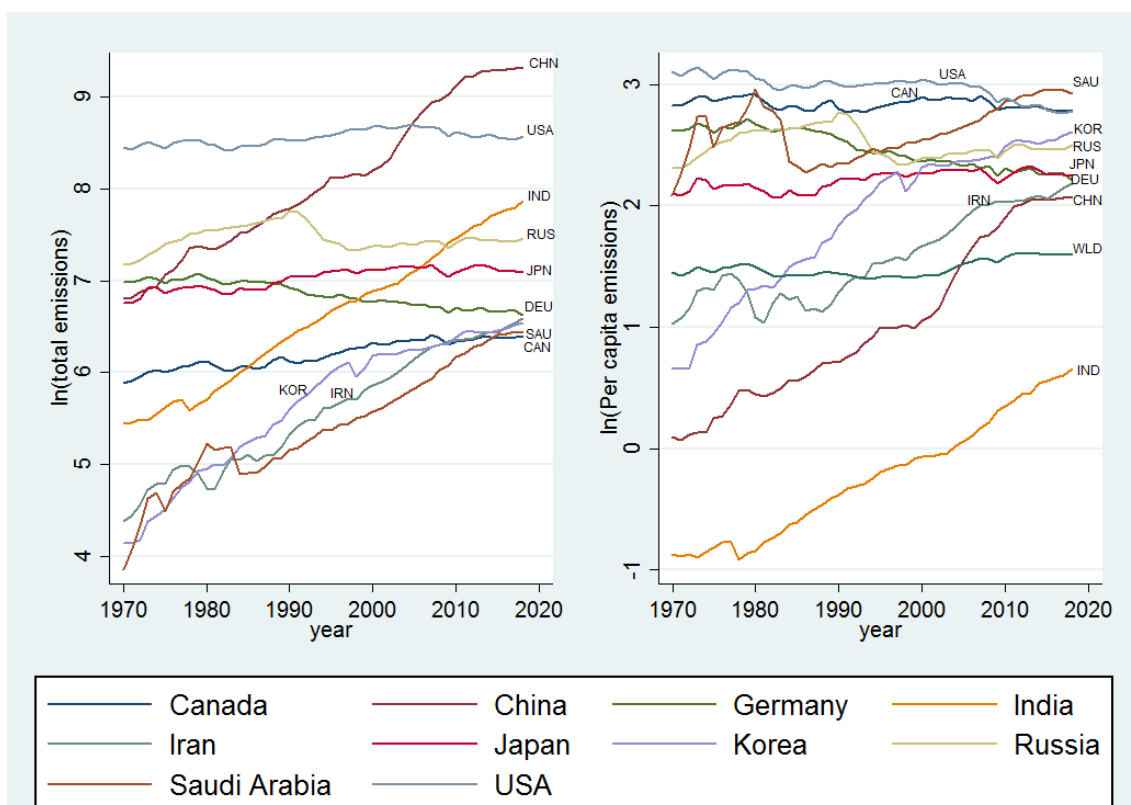
Table 1 provides a numerical summary of the results illustrated in the previous graphs.

Figure 4: Emissions and GDP per capita relationship, 2018



Note: The figures show the scatterplots and fitted line (that is, the lowest smoothed relationship) between total and per capita emissions and per capita GDP for 2018. All variables are converted to logs. Data on emissions are from EDGAR and data on per capita GDP is from the World Development Indicators database.

Figure 5: Trends in emissions among top 10 emitters



Note: The figures plot the trends in total and per capita emissions (in logs) for the ten countries with the highest levels of total emissions in 2018. Data on emissions are from EDGAR.

Table 1: Fossil CO2 emissions by region and top emitting countries

Country/Region	Per capita emissions 1970	Per capita emissions 2018		Total emissions 1970	Total emissions 2018		Share of world's emissions 1970 (%)	Share of world's emissions 2018 (%)	
World	4.27	4.97	↑	15775.86	37887.22	↑			
East Asia and Pacific	1.47	6.58	↑	2160.05	15340.13	↑	13.69	40.49	↑
EU27+UK	9.51	6.78	↓	4198.20	3457.29	↓	26.61	9.13	↓
Europe and Central Asia	8.39	7.28	↓	6585.20	6649.63	↑	41.74	17.55	↓
Latin America and Caribbean	1.78	2.80	↑	526.30	1830.03	↑	3.34	4.83	↑
Middle East and North Africa	5.43	6.34	↑	356.70	2813.35	↑	2.26	7.43	↑
North America	21.81	16.14	↓	5050.28	5870.12	↑	32.01	15.49	↓
South Asia	0.37	1.63	↑	261.43	2958.00	↑	1.66	7.81	↑
Sub-Saharan Africa	0.73	0.80	↑	270.75	860.82	↑	1.72	2.27	↑
International shipping and aviation				565.14	1565.15	↑	3.58	4.13	↑
World's top emitters and oil producers									
China	1.10	7.95	↑	905.87	11255.88	↑	5.74	29.71	↑
US	22.37	16.14	↓	4688.52	5275.48	↑	29.72	13.92	↓
India	0.42	1.94	↑	232.12	2621.92	↑	1.47	6.92	↑
Russia	10.10	12.14	↑	1314.17	1748.35	↑	8.33	4.61	↓
Japan	8.18	9.42	↑	857.80	1198.55	↑	5.44	3.16	↓
Germany	13.77	9.15	↓	1082.02	752.65	↓	6.86	1.99	↓
Iran	2.79	8.87	↑	79.47	727.81	↑	0.50	1.92	↑
South Korea	1.94	13.59	↑	62.58	695.36	↑	0.40	1.84	↑
Saudi Arabia	8.06	18.63	↑	47.02	624.99	↑	0.30	1.65	↑
Canada	16.86	16.08	↓	361.59	594.20	↑	2.29	1.57	↓
Brazil	1.16	2.37	↑	110.16	500.09	↑	0.70	1.32	↑
UAE	82.54	22.44	↓	19.44	214.11	↑	0.12	0.57	↑
Iraq	2.34	4.78	↑	23.19	188.10	↑	0.15	0.50	↑
Kuwait	51.34	23.91	↓	38.34	100.34	↑	0.24	0.26	↑

Notes: The table reports total and per capita fossil CO2 emissions (in MTCO2) and contribution to global emissions for 1970 and 2018 by region as well as for the countries accounting for highest emissions and oil production. Data on emissions come from EDGAR.

4 Climate Agreements

This Section provides an overview of the emission reduction pledges made under three international agreements and explains how we construct comparable targets across countries. After discussing compliance, it turns to the impact of international agreements on emissions.

4.1 Emission pledges

The first international agreement signed was the Kyoto Protocol, which was adopted in 1997 but came into force in 2005, with the round ending in 2012. The second was the Copenhagen Accord, which came into effect in December 2009 with targets for 2020. The third treaty was the Paris Agreement, which entered into force in November 2016 with targets for 2030.⁵

To compute comparable targets across countries, we examine the emission reduction targets declared by each country. Among the countries that are party to each pledge, we start with the set of countries that have specified a numerical target for emission reduction. Different countries have different baseline years against which reductions in emissions are benchmarked. To facilitate comparability across countries, we use these quantified targets to compute the targeted emissions reductions (in MTCO₂ eq) relative to the level of emissions in the starting year of the pledge for all countries; this allows us to compare the magnitudes of the targets on a given pledge across the various countries. Some countries specify their targets relative to a particular sector (e.g., emission reductions in the energy sector) or based on their activity projections; again, for comparability, we translate these emission targets (based on sectors or projections) into reductions relative to the aggregate level of emissions in the starting year of the pledge. To do so, we need information on baseline emission levels, in some cases for specific sectors (for example, energy), as well as Business-As-Usual (BAU) scenario emission projections for future years. For a few countries that specify targets in terms of carbon intensity of their gross domestic product (GDP), we also need GDP projections. Using publicly available informa-

⁵The Doha Amendment to the Kyoto Protocol was adopted for a second commitment period from 2013 to 2020 but it has not yet entered into force.

Table 2: Summary of targeted emission reductions

	Kyoto	Kyoto (without Russia)	Copenhagen	Paris
No. of signatories proposing targets or NAMAs (excluding EU28 in total)	37	36	100	188
Start year considered	2005	2005	2010	2014 ^a
Countries with quantified emission reduction targets	37	36	59	149
Countries with quantifiable objectives	30 ^b	29	54 ^c	117 ^d
Contribution to world GHG emissions by signatories with quantifiable objectives in starting year (%)	22.95	17.73	75.48	83.39
Contribution to world GHG emissions by all signatories	24.44	19.22	81.93	98.85
Total emissions by signatories with quantifiable objectives in start year	9442.768	7295.786	33418.17	39474.53
Targeted reduction from starting year (conditional)	-679.83	400.4885	3397.412	5402.837
Targeted reduction from starting year (unconditional)	-679.83	400.4885	1427.219	2839.568
Targeted % reduction from starting year (conditional)	-7.2	5.49	10.17	13.69
Targeted % reduction from starting year (unconditional)	-7.2	5.49	4.27	7.19

Notes: ^aTo calculate the targeted reduction in emissions from the start date of the pledge, we need sector specific emissions data for the baseline year as well as for the starting year. 2014 is taken as the starting year for the Paris Agreement because this is the last year for which sector specific GHG emissions data are available.

^bNo data for emissions pre-1990 for 5 Eastern European countries and no total emissions data for Liechtenstein and Monaco for 1990.

^cNo total emissions data for Liechtenstein and Monaco for 1990. BAU estimates missing for the rest.

^dEmissions target expressed in carbon intensity of GDP for Chile, Malaysia and Singapore - GDP projections are also necessary for computing targeted emissions. No total emissions data for Liechtenstein and Monaco for 1990. BAU estimates missing for the rest.

Targeted reduction in emissions is computed as the difference between targeted emissions and starting emissions in the sectors covered by the pledge

tion from several sources (as described in Section 2), we compute comparable targets for the majority of countries making quantified target reduction pledges. For many countries setting their pledges based on reductions from future BAU scenarios, the targeted emission level by the end year of the pledge is actually higher than that recorded in the start year. Table 2 summarises the main aspects of the pledges made under the three agreements. The full set of computed target reductions by country is given in Appendix A.

The quantification of total emission reductions from the year in which the agreement was signed provides a measure of how ambitious (or not) targets are at the time at which they were set. While the targets established in the Kyoto Protocol are the most straightforward to compute, it appears that when compared to emission levels in 2005 (the year in which the Protocol came into effect), the targets allow an overall increase in emissions. This is in large part due to the extremely high emissions in Russia in 1990, which is the baseline year from which emission reduc-

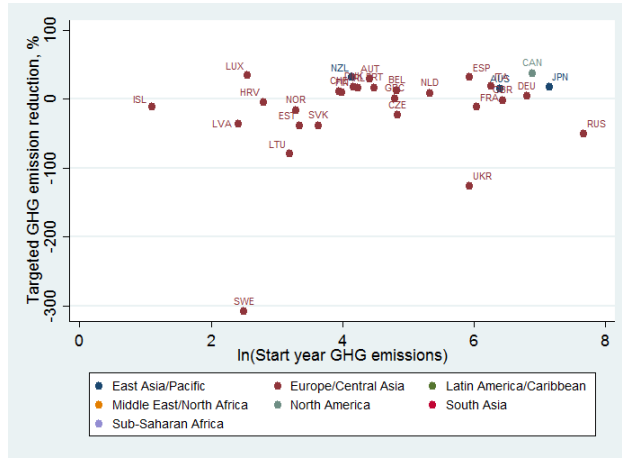
tions are computed. Indeed, excluding Russia, the total targeted emissions involve a reduction of 400 MTCO₂ eq., which is a 5.5 percent reduction in emissions from 2005.

The targets set in the Copenhagen and Paris agreements appear more ambitious overall in terms of the targeted reduction in emissions from the starting year of the agreement. This is true for both absolute and relative reductions, though it should be noted that comparisons between pledges are not as straightforward as for Kyoto given that the implementation timelines became longer in Copenhagen and Paris. Moreover, unlike the Kyoto Protocol in which the targets were fixed and unconditional, the two latter agreements allow countries to specify both unconditional targets as well as targets that are conditional on assistance and action from other, generally developed, countries. There is considerable variation between the unconditional and conditional targeted reductions with the total unconditional target amounting to less than half of the total conditional target under the Copenhagen Accord and just over a half in the Paris Agreement. Figures 6a, 6b and 6c plot the targeted unconditional emission reductions as a percentage of the total GHG emissions in the starting year against total GHG emissions in the starting year. Countries without quantifiable targets are excluded. The figures show significant dispersion in the pledges made by different countries across the three treaties, spanning a wide quantitative range from large targeted reductions to large targeted increases in emissions.

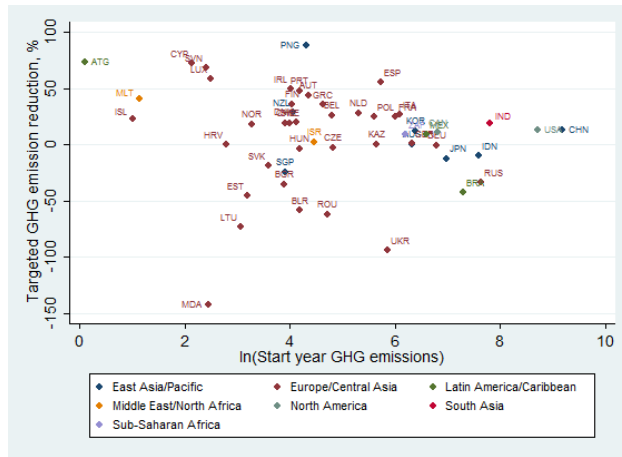
4.2 Target achievements

Given that the first commitment period under the Kyoto Protocol has come to an end, we are in a good position to examine how well countries adhered to their emission-reduction targets. Figure 7a plots the decrease in GHG emissions from the starting year of 2005 to 2012 (as a percentage of the 2005 emissions level) against the targeted reduction as a percentage of the emission levels in 2005. By comparing these two values for each country, we can see which countries reached their targets. The actual reduction in emissions is larger than or equal to the targeted reduction for countries to the left of the 45 degree line and the reduction in emissions fall short

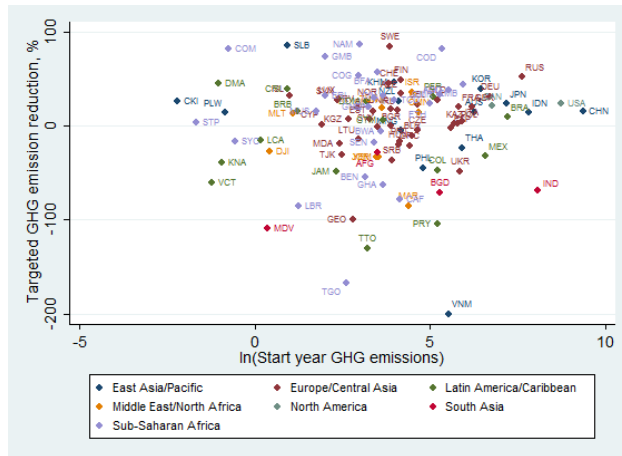
Figure 6: Targeted reductions and total emissions



(a) Kyoto Protocol



(b) Copenhagen Accord



(c) Paris Agreement

Note: The figures plot the targeted unconditional reduction in emissions as a percentage of the emissions in the starting year against the log of start year emissions for the Kyoto, Copenhagen and Paris Agreements. The graphs in Panel (b) and (c) exclude outliers: Latvia, Kiribati and Madagascar. Note that the axis plots targeted reductions so negative values refer to pledges which involve an increase in emissions from the start year of the pledge.

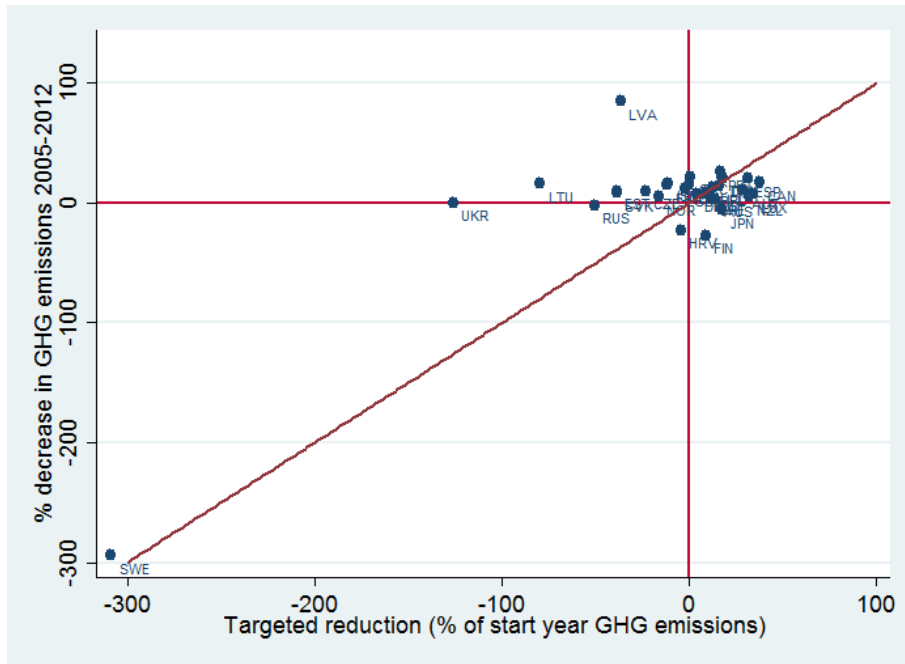
of the target for countries to the right of the 45 degree line.

When examining success by country, there is wide variation in both the achievement and ambitiousness of targets. Countries to the left of the 45 degree line (in red) represent the countries that met their target, with countries further from the line having significantly over-achieved their target. Countries to the right of the 45 degree line are those that failed to achieve their targeted emission reduction. The graph indicates that while there are some clear outliers in terms of over-achievement of targets (e.g. Latvia and Ukraine, which pledged increases in emissions), only a few countries actually set targets to reduce emissions from the 2005 emission level (recall that most countries used 1990 as their baseline year) and then met this target (these are the countries in the area to the right of the Y-axis and above the 45 degree line). All of the countries that specified a target involving an increase in emissions from the 2005 level, with the exception of Croatia, achieved their target. The EU15 countries also collectively over-achieved their target – the target reduction was 258 MTCO₂ eq. and actual reduction was 462 MTCO₂ eq. Though there is huge variation in compliance across countries, adding the emissions and targets of all countries, the group of thirty countries for which targets are quantified actually met the required emissions reduction. Total emissions by these countries as a whole amounted to 8,864 MTCO₂ eq. in 2012, compared to a targeted emissions level of 10,057.11 MTCO₂ eq.

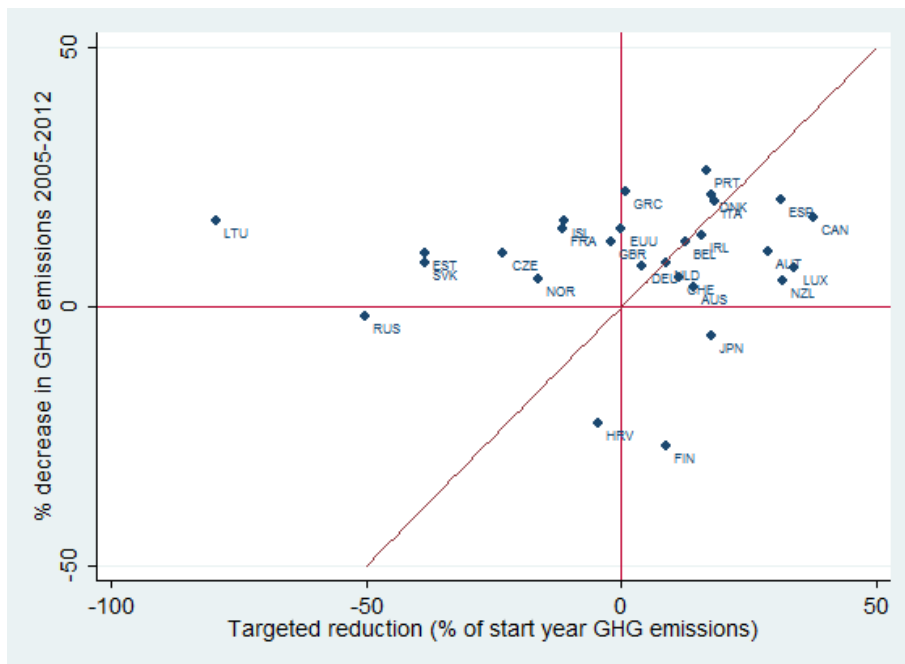
The Copenhagen Accord specified targets for 2020. Given that we only have data running til 2018, we use the fossil CO₂ emissions for the latest year (2018) to assess the progress that has been made so far under this agreement. We undertake a similar comparison to that used for the Kyoto Protocol by comparing targeted unconditional emission reductions with emission reductions recorded to date. Note that the targeted reductions are as a percentage of GHG emissions in the starting year of the pledge, whereas the reduction to date is as a share of fossil CO₂ emissions in the starting year. As said, GHG and CO₂ are highly correlated. For this comparison to reflect the true progress under the Accord, we are implicitly assuming that GHG emissions and fossil CO₂ emissions change at the same rate.

It appears that twenty-one of the countries had reached or exceeded the tar-

Figure 7: Achievement of targets under the Kyoto Protocol



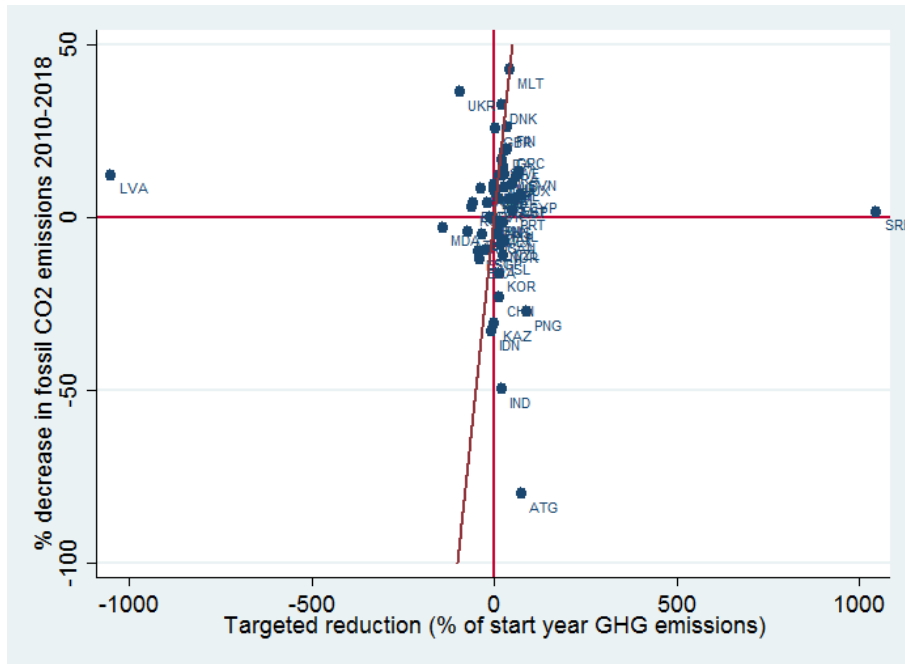
(a) All signatories



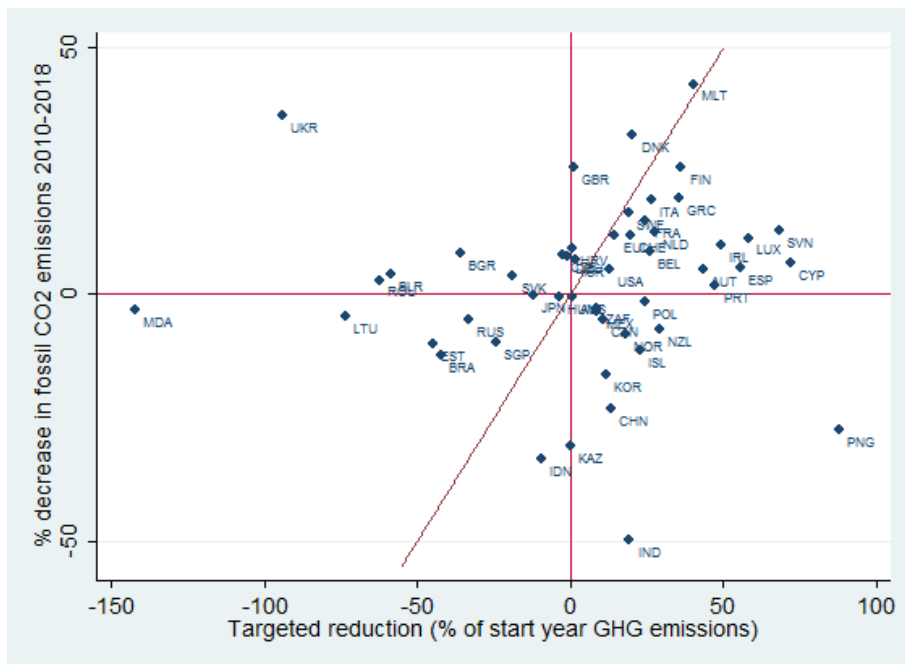
(b) All signatories excluding Sweden, Ukraine and Latvia

Note: The figure plots the decrease in GHG emissions from the starting year of 2005 to 2012 (as a percentage of the 2005 GHG emissions level) against the targeted reduction as a percentage of the emissions in the start year for the Kyoto Agreement. The red line is the $Y=X$ line. The graph is plotted with (Fig 7a) and without (Fig 7b) Sweden, Ukraine and Latvia.

Figure 8: Progress made under the Copenhagen Accord



(a) All signatories



(b) All signatories excluding Latvia and Serbia

Note: The figure plots the decrease in fossil CO₂ emissions from the starting year of 2010 to 2018 (as a percentage of the 2010 emissions level) against the targeted unconditional GHG emission reduction as a percentage of the GHG emissions in the start year for the Copenhagen Accord. The red line is the Y=X line. The graph is plotted with (Fig 8a) and without (Fig 8b) Latvia and Serbia.

geted emission reduction (countries to the left of the 45 degree line) by 2018, while thirty-five had not, though countries close to the 45 degree line are those that were reasonably close to achieving their targets. Again, the vast majority of countries that had already achieved their targets by 2018 were those that specified an increase in emissions from the starting year of 2010 (in the official pledges, many countries continued to specify their baseline year as 1990 under the Copenhagen Accord), with only a few countries, such as Denmark and Malta, having achieved more ambitious targets. Germany, Japan and Russia were the only countries among the top-10 emitters that had already achieved their target level of emissions as of 2018. It is conceivable that with the Covid-19 pandemic and the implied reduction in emissions caused by lower activity, many more countries would have met the targets.

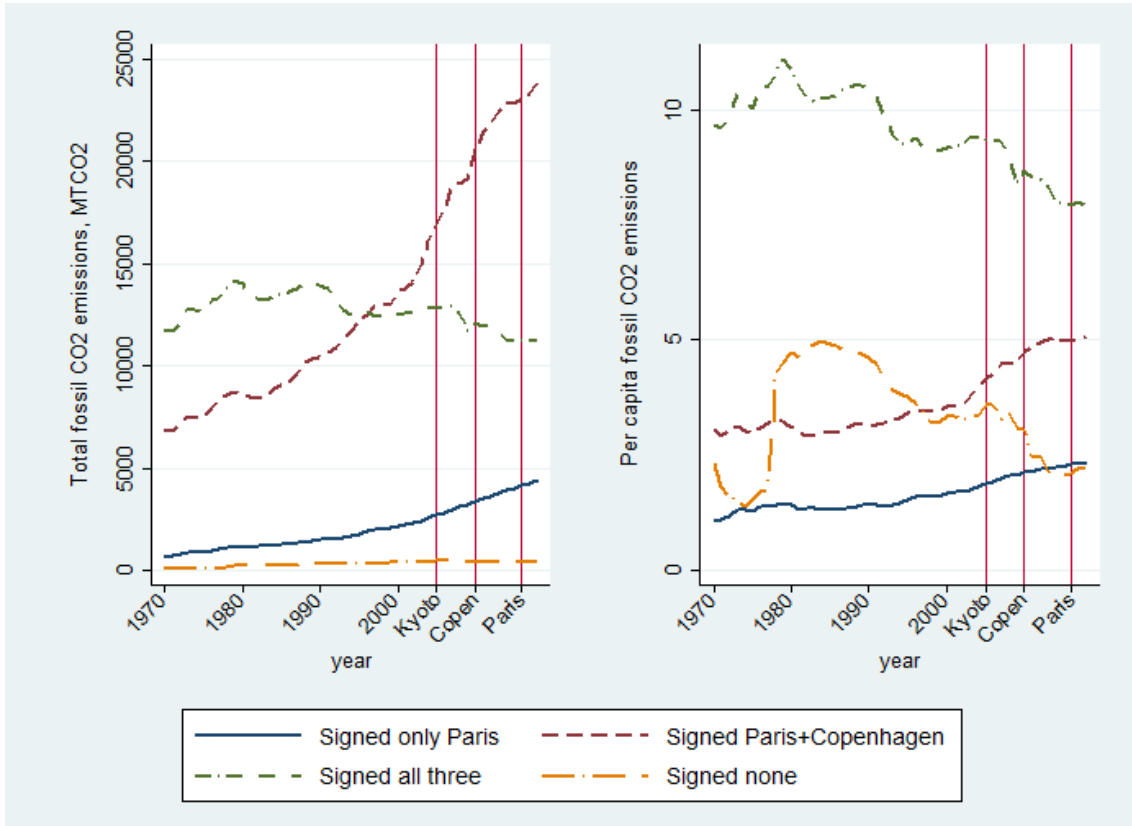
4.3 Climate agreements and total emissions

This Section examines the relationship between total fossil CO₂ emissions (for which data are available until 2018) and the three climate change pledges. Countries are grouped by the number of pledges signed: i) none, ii) only the Paris Agreement, iii) both the Paris and Copenhagen Agreements, and iv) all three agreements. Note that every country signing an early pledge signed all subsequent pledges; for example, a country ratifying the Kyoto Protocol also signed the Copenhagen Accord and Paris Agreement). Figure 9 plots the total and average per capita fossil CO₂ emissions of the four groups of countries over time.

The graph indicates that the group of countries signing all three pledges (that is, the countries that were party to the Kyoto Protocol) shifted from being the largest total-emission group to the second largest, as China, India and the United States dominate the group of countries which signed the Copenhagen and Paris agreements. Countries that were party to only the Paris Agreement or none of the agreements account for much smaller shares of total emissions, though increases in Iran, Saudi Arabia and Turkey have driven up total emissions of the former group in the last two decades.

The trends in per capita emissions show a slightly different picture. It appears that emissions per capita have picked up following the Kyoto and Copenhagen agree-

Figure 9: Fossil CO2 emissions by number of pledges signed



Note: The figure plots total and population weighted per capita fossil CO2 emissions for groups of countries defined by the number of climate-related agreements they are signatory to.

ments in the countries party to all three agreements, while the increase in per capita emissions appears to have slowed down after the Copenhagen Accord among the countries that signed the two later agreements. Although there is insufficient data to assess the impact of the Paris Agreement just yet, the emissions per capita between 2017 and 2018 do not appear to have changed in any of the groups signing at least one climate-related agreement. Interestingly, emissions per capita have also declined in the group of countries that did not sign any of the agreements, owing mainly to the trends in per capita emissions in North Korea.

To examine the determinants of total fossil CO2 emissions and the impact of the various climate agreements, we estimate a series of regressions using a panel of 186 countries. We start with a specification that only includes per capita GDP, population, share of urban population, and, for a smaller sample, oil rents as a percentage of GDP. The results are presented in Table 3.

Table 3: Determinants of emissions

	Total Fossil CO2 emissions (in logs)			
	(1)	(2)	(3)	(4)
GDP per capita (in logs)	0.843*** [0.010]	0.707*** [0.061]	0.848*** [0.010]	0.696*** [0.060]
Population (in logs)	1.106*** [0.006]	1.250*** [0.176]	1.109*** [0.006]	1.219*** [0.158]
Urban population (% of total)	0.011*** [0.001]	0.008* [0.004]	0.009*** [0.001]	0.008* [0.005]
Oil rents (% of GDP)			0.020*** [0.001]	0.002 [0.004]
Country and Year FE	No	Yes	No	Yes
N	7991	7991	7189	7189
R-sq	0.903	0.884	0.907	0.885

Notes: The table reports the results of regressing total fossil CO2 emissions (in logs) on GDP per capita (in constant 2010 US\$) and population (in logs), urban population as a percentage of the total and oil rents as a percentage of GDP. Columns (1) and (3) do not control for country and year fixed effects. All regressions include a constant term.

The values in brackets are robust standard errors. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively.

As is expected, GDP per capita and population show strong and statistically significant positive associations with total emissions, with the estimated coefficients increasing in magnitude for population when country- and year-fixed effects are controlled for. The magnitudes are large. A one percent increase in GDP per capita is associated with a 0.84 percent increase in emissions, while a one percent increase in population is associated with a 1.1 percent increase in emissions. The share of urban population has a smaller effect on emissions, with the effect becoming less significant when controlling for country- and year-fixed effects. While oil rents have a much smaller quantitative impact on emissions than the other factors, the association between emissions and oil rents also becomes insignificant once country- and year-fixed effects, along with income and population have been controlled for. This is because most of the oil-production effect on emissions is absorbed in the country-specific effect. Since its inclusion also results in a smaller sample size, we exclude it from the following regressions.

To this set of controls, we add three variables that indicate whether each of the agreements has been signed (0 before and 1 thereafter) with a one-year lag to

allow for time between the signature of the agreement and its implementation. To distinguish whether simply signing the agreement has a different effect from having a quantified target for emission reduction, we include indicators for having such a target.

Table 4: Emissions and climate agreements

	Total Fossil CO2 emissions (in logs)	
	(1)	(2)
Signed Kyoto	-0.439***	
	[0.092]	
Signed Copenhagen	-0.167**	
	[0.070]	
Signed Paris	0.049	
	[0.264]	
Have quantified objective Kyoto		-0.362***
		[0.084]
Have quantified objective Copenhagen		-0.287***
		[0.062]
Have quantified objective Paris		-0.038
		[0.088]
Country and Year FE	Yes	Yes
Controls	Yes	Yes
N	7875	7875
R-sq	0.899	0.9

Notes: The table reports the results of regressing total fossil CO2 emissions (in logs) on indicators for being a signatory for the three climate agreements as well as indicators for making a quantified emission reduction pledge under each agreement.

All regressions include a constant and control for country and year fixed effects as well as real GDP per capita (in constant 2010 US\$), population (in logs), and urban population as a percentage of the total.

The values in brackets are robust standard errors. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively.

The results from Table 4 show that signing the Kyoto and Copenhagen agreements is associated with significantly lower emissions, holding population and income constant. However, being a signatory to the Paris agreement does not show any impact on emissions; this could be of course because we have only two years of data post-Paris (recall that the agreement came into force in November of 2016). Similarly, having a quantified target-reduction objective under the Kyoto and Copenhagen agreements is associated with significantly lower emissions. The magnitude of these estimated effects are large - for instance, the results from Column (1) in the

table indicate that signing the Kyoto agreement results in 44 percent lower fossil CO₂ emissions when compared with countries that did not sign the agreements. How do we reconcile this large estimated fall with the rather unambitious targets set in Kyoto? The answer is in the counterfactual or control group: countries that did not sign the Kyoto Protocol recorded a steep rise in emissions. Hence, signing Kyoto had an effect, not so much in reducing emissions but in preventing countries to increase emissions too rapidly. Signing the Copenhagen Accord led to a reduction in emissions in the order of 15 percent; having a quantifiable target increased the reduction to nearly 25 percent.

5 Climate-change actions and dynamic effects

In this section, we combine our datasets on emissions and pledges with information on climate-related laws and policies to study their impact. Later in the section we turn to the dynamic effects of the international agreements and selected policies.

5.1 Climate-change actions

Using the Climate Change Laws of the World database, which records information on 1,809 laws and policies in 200 countries which were in implementation up to the end of 2019, we create a variable for the number of climate-related laws and policies that are in force in a given country and year.⁶ Using the keywords provided for each of these actions, we also create variables for the number of policies or actions related to various aspects of climate-change actions including measures for adaptation to climate change, management of energy demand and energy supply, transportation, land use and forestry, and RD. We combine this information with data from the Carbon Pricing Dashboard, which contains information on carbon taxes and emissions trading schemes (ETS) implemented by country and year. We

⁶The database does not include laws or policies that were abolished, so the numbers for some years could be underestimated. However, the World Bank's Carbon Pricing Dashboard, which lists all carbon taxes and emission-trading schemes ever implemented, shows that very few (just three, of which only one was a national-level action) carbon taxes or emission-trading schemes have been abolished to date. As such, it is unlikely that underestimation of the number of laws and policies is large.

generate an indicator for the implementation of a carbon tax or ETS at the national level.⁷

Table 5 summarises the number of climate-related laws and policies by decade and the number of countries with at least one climate-related law or policy. The number and distribution of policies or laws by year are listed in Table 5.

Table 5: Laws and policies related to climate change

	Number of laws passed	Number of policies passed	Countries with at least one law	Countries with at least one policy
Pre 1970	8	1	6	1
1970-79	6	0	10	1
1980-89	17	2	18	3
1990-99	78	31	62	23
2000-09	272	276	119	135
2010-19	394	724	156	176
Total to date	775	1034	156	176

Notes: Computed using data from the Climate Laws of the World Database.

Table 6: Climate-related laws and policies by sector

		Number of policies/laws in action by sector							Total
		Adaptation	Energy demand	Energy supply	Institutions	Transport	LULUCF	R&D	
Pre 1970	No.	7	0	1	4	1	0	0	9
	%	77.8	0.0	11.1	44.4	11.1	0.0	0.0	
1970-79	No.	1	4	2	3	1	0	0	6
	%	16.7	66.7	33.3	50.0	16.7	0.0	0.0	
1980-89	No.	5	6	8	11	1	2	3	19
	%	26.3	31.6	42.1	57.9	5.3	10.5	15.8	
1990-99	No.	32	37	41	64	11	11	14	109
	%	29.4	33.9	37.6	58.7	10.1	10.1	12.8	
2000-09	No.	139	236	299	271	108	99	136	548
	%	25.4	43.1	54.6	49.5	19.7	18.1	24.8	
2010-19	No.	466	396	535	561	205	241	215	1118
	%	41.7	35.4	47.9	50.2	18.3	21.6	19.2	

Notes: Computed using data from the Climate Laws of the World Database. The sum of the sector columns can add up to more than the total number of laws/policies as some laws and policies cover multiple sectors.

Table 5 shows that most climate-related actions (executive or legislative) were taken over the past few decades. While laws were relatively more common in the

⁷The database mentions that the carbon prices are not necessarily comparable between initiatives due to differences in sectors covered, specific exemptions and compensation methods. Given these limitations, we do not use the carbon prices in the analysis.

earlier decades, policies become more common from the 2000s such that as of 2019 there were 1,034 climate-related policies and 775 climate-related laws that had been enacted across the world.

As shown in Table 6, the areas covered by climate-related laws and policies vary over the years. Most of the earliest laws and policies are related to climate-change adaptation or energy demand, while in the later years policies and laws related to energy supply and institutions have become more common. There has also been an increase in the number of laws and policies related to land use, land use change and forestry (LULUCF), and RD over the last few decades.

Table 7 lists out the number of national and sub-national carbon taxes and emissions trading schemes being implemented over the years as well as the number of countries where at least one carbon tax or ETS is implemented.

Table 7: Carbon taxes and Emission Trading Schemes

	No. of carbon taxes		No. of ETS		No. of countries with	
	National/ regional	Sub- national	National/ Regional	Sub- national	Carbon tax	ETS
Pre-1990	0	0	0	0	0	0
1990-99	6	0	0	0	6	0
2000-09	10	1	3	2	9	31
2010-19	25	5	7	20	23	34

Notes: Computed using data from the Carbon Pricing Dashboard.

The first carbon-pricing initiatives in the database are the Polish and Finnish Carbon Taxes implemented in 1990. Since then, there has been a gradual increase in the number of carbon pricing initiatives implemented around the world. While most of the carbon taxes are enacted at a national level, most of the ETS are implemented at the sub-national level in the United States, Canada, China and Japan. Only two initiatives in the dataset have been abolished as of 2019 – the Australian national level ETS, which was introduced in 2012 and abolished in 2015, and the Ontario ETS, which was implemented in 2017 and abolished in 2019. Note that while the EU ETS counts as a single initiative, its jurisdiction spans all the EU countries as well as Norway, Iceland and Liechtenstein.

We analyse the impact of climate-related actions on emissions by extending our

regression model. To do so, we include new indicators. The first is a dummy that takes the value one when the country has a national-level carbon tax or ETS in place. A second variable (or set of variables) aims at capturing other specific climate-related laws and policies. We use two specifications for modelling the effect of climate laws and policies on emissions: the first simply uses the total number of climate laws and policies that are in place, while the second uses the number of laws or policies disaggregated by area. As with the indicators for signing climate agreements, the number of climate-related laws and policies are included in the model with a one-year lag. The results of the regressions are given in Table 8.

The results show that both the number of climate-related laws and the presence of a nation-wide carbon tax are significantly associated with lower emissions. Given the inclusion of country and time effects, the figures in the table should be read as relative to the emissions in countries that did not implement carbon tax policies. In terms of magnitudes, the regressions suggest a reduction of emissions in the order of 17 percent due to carbon taxes, relative to countries without a national carbon tax. The presence of a national level ETS also shows a negative correlation with emissions, with the effect in the order of 14 percent, though less significant in some of the specifications. The number of climate-related policies shows no association with emissions, while the number of laws passed appear to affect emissions. More specifically, emissions appear to decrease by 3 percent for each additional climate-related law that is enacted. When switching to the number of laws or policies by area, none of the variables, individually, are significantly associated with emissions, suggesting that it is the overall effort made towards climate-change mitigation that matters, rather than sector-specific interventions, while the distinction between executive and legislative actions is possibly important too.

5.2 Dynamic effects of pledges and climate-change actions

While the previous sections provide evidence on the associations between emission reductions and the role of international climate-change agreements and specific climate-change actions, causal inference from the estimates might be affected by potential feedback from emission levels to climate-change actions or the willingness to

Table 8: Emissions and climate-related laws and policies

	Fossil CO2 emissions (in logs)	
	(1)	(2)
Signed Kyoto	-0.233** [0.093]	-0.214** [0.084]
Signed Copenhagen	-0.107* [0.064]	-0.109* [0.066]
Signed Paris	0.086 [0.241]	0.111 [0.234]
Have national level carbon tax	-0.175*** [0.061]	-0.185*** [0.061]
Have national level ETS	-0.118 [0.083]	-0.153** [0.069]
Number of climate related laws	-0.031*** [0.011]	
Number of climate related policies	0.000 [0.009]	
<i>Number of policies by sector</i>		
Adaptation		0.014 [0.016]
Demand management		-0.013 [0.017]
Supply management		-0.023 [0.015]
Transport		-0.008 [0.021]
LULUCF		0.011 [0.018]
R&D		-0.011 [0.016]
Country and year FE	Yes	Yes
Controls	Yes	Yes
N	7875	7875
R-squared	0.902	0.901

Notes: The table reports the results of regressing total fossil CO2 emissions (in logs) on the number of climate related laws and policies currently in place. All regressions also include indicators for being a signatory for the three climate agreements.

LULUCF stands for Land Use, Land Use Change and Forestry.

All regressions include a constant and control for country and year fixed effects as well as GDP per capita (in constant 2010 US\$), population (in logs), and urban population as a percentage of the total.

The values in brackets are robust standard errors. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively.

sign international agreements. For instance, a country with a low level of emissions may find it easier to sign a climate agreement than a country with a high level of emissions (or, on the other direction, a country with high level of emissions might face more international peer pressure to join the agreement). To address this problem, we estimate the dynamic effect of climate-change actions on emissions using the Jorda (2005) local projection method, adapted to panel data.

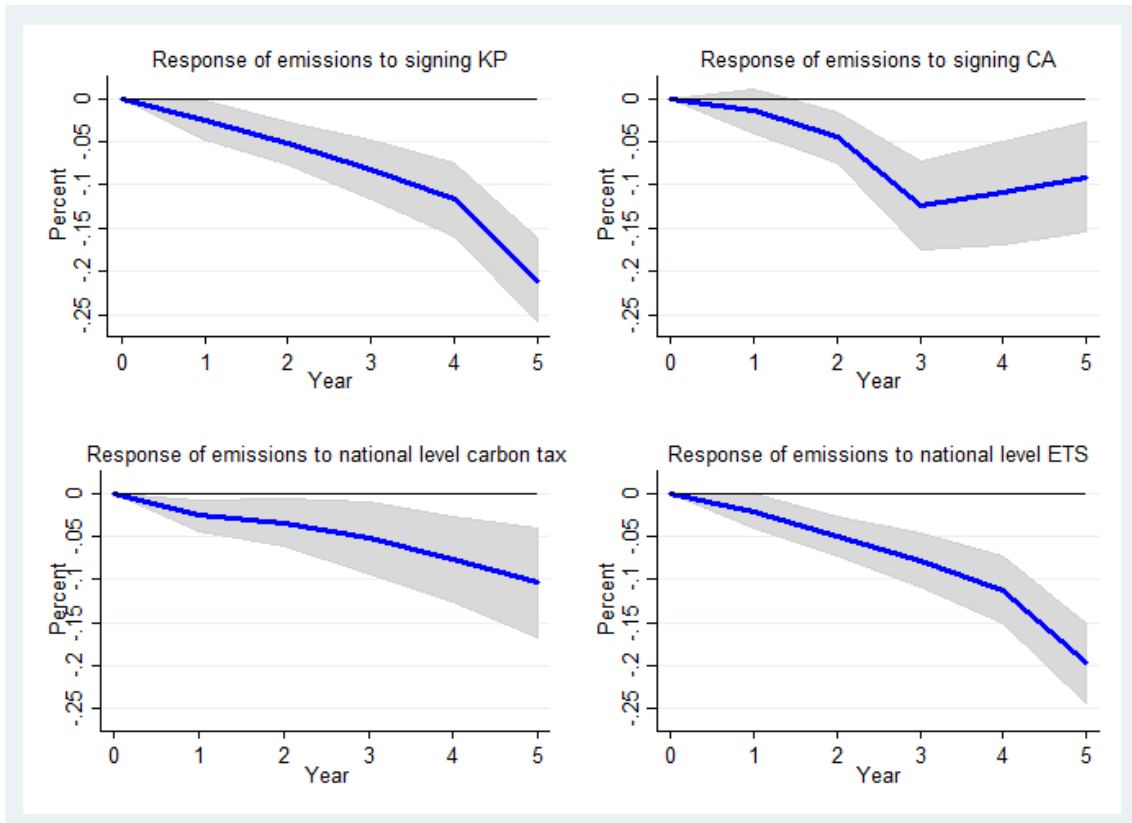
The identifying assumption implicit in the estimation of local projections is that once historical emissions, and current and past international shocks (captured by time fixed effects) are controlled for, we are left with the unexpected component of climate interventions. As such, we estimate the following set of equations using OLS:

$$\begin{aligned} \ln(emissions)_{i,t+h} = & \gamma(L)\ln(emissions)_{i,t-1} + \rho(L)X_{i,t-1} + \theta_h\tau_{i,t} \\ & + \delta(L)\tau_{i,t-1} + \alpha_i + W_t + \epsilon_{i,t}, \quad h = 0, 1, 2, \dots, 5 \end{aligned} \quad (1)$$

where $X_{i,t-1}$ includes controls such as GDP and population, $\tau_{i,t}$ is the policy variable, and lags of upto three years are included for all regressors. α_i and W_t are country and time fixed effects and $\epsilon_{i,t}$ is the random error term. θ_h is the effect of a change in the climate action policy in year t on emissions, h periods in the future. Equation 1 is estimated separately for each value of h and for each of the following climate change actions separately: being a signatory to the Kyoto protocol, being a signatory to the Copenhagen accord, having a national level carbon tax, and having a national level ETS.

Figure 10 plots the values of θ_h against h for each of the climate-change actions considered. The effect on emissions from each of the four interventions builds up gradually over time. By the fourth and fifth year, the estimated dynamic effects are broadly similar to the results shown in the previous sections, with the four policies considered demonstrating significant and persistent negative effects on emissions. As before, these numbers should be interpreted relative to the counterfactual provided by countries that did not put in place similar interventions. To the extent that countries in that control group recorded significant increases in emissions, the actual reductions in global emissions is of course much more modest.

Figure 10: Dynamic effects of pledges, carbon taxes and emission-trading schemes



Note: The figure plots the estimated effect of a change in the climate action policy in year t on emissions, h periods in the future, for each of the policies considered.

6 Conclusion

The paper computes comparable emission targets set in the context of the three main international climate-action treaties; it studies compliance with those targets across countries; and it assesses the overall impact of the international treaties, as well as specific climate-change actions, on the level of emissions. The paper finds that countries' compliance with emission-reduction targets has been highly heterogeneous, with many countries undershooting their targets. Signing the Kyoto Protocol and the Copenhagen Accord has led to significant reductions in emissions when compared with countries that did not sign in the treaties. In contrast, the Paris Agreement has not appeared to have led (yet) to any material reduction. Having quantifiable goals in the context of the Copenhagen Accord has been helpful in further reducing emissions. In terms of specific actions, the paper finds that carbon taxes and ETS are associated with significant reductions in emissions. Other

climate-related laws and policies do not appear to have, individually, a material impact on emissions. However, the number of climate-related laws is associated with significant reductions in GHG emissions. Overall, more ambitious (and clearer) targets would be needed to offset the larger impact of economic and population growth on emissions.

References

- Ad Hoc Working Group on Long-term Cooperative Action under the Convention (2011). *Compilation of information on nationally appropriate mitigation actions to be implemented by Parties not included in Annex I to the Convention*. Technical report, UNFCCC. [Accessed on August 31, 2020].
- Climate Analytics and NewClimate Institute (2020). Climate Action Tracker. <https://climateactiontracker.org/>. [Accessed on August 31, 2020].
- Crippa, M., Oreggioni, G., Guizzardi, D., Muntean, M., Schaaf, E., Lo Vullo, E., Solazzo, E., Monforti-Ferrario, F., Olivier, J., & Vignati, E. (2019). *Fossil CO₂ and GHG emissions of all world countries - 2019 Report*. Publications Office of the European Union.
- European Commission (2020). Kyoto 1st commitment period (2008–12). https://ec.europa.eu/clima/policies/strategies/progress/kyoto_1_en. [Accessed on August 31, 2020].
- European Union (2020). REGULATION (EU) 2018/842 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013. <http://data.europa.eu/eli/reg/2018/842/oj>. [Accessed on August 31, 2020].
- Fenhann, J. (2019). *Pledge Pipeline*. Technical report, UNEP DTU Partnership. [Accessed on August 31, 2020].
- Grantham Research Institute on Climate Change and the Environment and Sabin Center for Climate Change Law (2020). Climate Change Laws of the World database. climate-laws.org. [Accessed on August 31, 2020].
- Hassler, J., Krusell, P., & Nycander, J. (2016). Climate policy. *Economic Policy*, 31(87), 503–558.

- Hassler, J., Krusell, P., Olovsson, C., & Reiter, M. (2020). On the effectiveness of climate policies. (Working Paper).
- Jorda, O. (2005). Estimation and inference of impulse responses by local projections. *American Economic Review*, 95(1), 161–182.
- Metcalf, G. E. (2019). On the economics of a carbon tax for the United States. *Brookings Papers on Economic Activity*, Spring, 405–458.
- Ramadorai, T. & Zeni, F. (2020). Climate regulation and emissions abatement: theory and evidence from firms' disclosures. (Working Paper).
- UNFCCC. Appendix I - Quantified economy-wide emissions targets for 2020. <https://unfccc.int/process/conferences/pastconferences/copenhagen-climate-change-conference-december-2009/statements-and-resources/appendix-i-quantified-economy-wide-emissions-targets-for-2020>. [Accessed on August 31, 2020].
- UNFCCC. Kyoto Protocol - Targets for the first commitment period. <https://unfccc.int/process-and-meetings/the-kyoto-protocol/what-is-the-kyoto-protocol/kyoto-protocol-targets-for-the-first-commitment-period>. [Accessed on August 31, 2020].
- World Bank (2020a). Carbon Pricing Dashboard. https://carbonpricingdashboard.worldbank.org/map_data. [Accessed on August 31, 2020].
- World Bank (2020b). World Development Indicators Database. <https://databank.worldbank.org/source/world-development-indicators>. [Accessed on August 31, 2020].
- World Resources Institute (2015). CAIT 2.0 - CAIT Projections Beta. <http://cait2.wri.org/projections>. [Accessed on August 31, 2020].
- World Resources Institute (2016). CAIT Climate Data Explorer - CAIT Paris Contributions Map. <http://cait.wri.org/indcs/>. [Accessed on August 31, 2020].

World Resources Institute (2017). CAIT Climate Data Explorer. <http://cait.wri.org>
. [Accessed on August 31, 2020].

World Resources Institute (2018). Climate Watch.
<https://www.climatewatchdata.org>. [Accessed on August 31, 2020].

Appendix

A Targeted emission reduction by country and agreement

Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO ₂ eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO ₂ eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Afghanistan	Kyoto	No	No		18.98					
Afghanistan	Copenhagen	Yes	No		30.63					
Afghanistan	Paris CAIT	Yes	Yes	Yes	32.99	-9.29	-9.29	-27.86	-27.86	
Albania	Kyoto	No	No		9.14					
Albania	Copenhagen	No	No		8.10					
Albania	Paris CAIT	Yes	Yes	No	5.57					
Algeria	Kyoto	No	No		135.12					
Algeria	Copenhagen	Yes	No							
Algeria	Paris CAIT	Yes	Yes	No	201.69					
Andorra	Kyoto	No	No		0.59					
Andorra	Copenhagen	No	No		0.53					
Andorra	Paris CAIT	Yes	Yes	Yes	0.52	0.18	0.18	37.11	37.11	
Angola	Kyoto	No	No		221.04					
Angola	Copenhagen	No	No		252.04					
Angola	Paris CAIT	Yes	Yes	Yes	218.82	124.51	96.21	49.39	38.17	
Antigua & Barbuda	Kyoto	No	No		0.79					
Antigua & Barbuda	Copenhagen	Yes	Yes	Yes	1.11	0.82	0.82	73.87	73.87	-80.0529
Antigua & Barbuda	Paris CAIT	Yes	No							
Argentina	Kyoto	No	No		394.32					
Argentina	Copenhagen	Yes	No		418.67					
Argentina	Paris CAIT	Yes	Yes	No	443.26					
Armenia	Kyoto	No	No		6.99					
Armenia	Copenhagen	Yes	No							
Armenia	Paris CAIT	Yes	Yes	No	7.11					
Australia	Kyoto	Yes	Yes	Yes	603.39	85.50	85.50	14.17	14.17	3.6781
Australia	Copenhagen	Yes	Yes	Yes	561.95	120.72	3.06	21.48	0.54	-0.6015
Australia	Paris CAIT	Yes	Yes	Yes	523.21	88.77	76.71	16.97	14.66	
Austria	Kyoto	Yes	Yes	Yes	81.97	23.57	23.57	28.76	28.76	10.6217
Austria	Copenhagen	Yes	Yes	Yes	105.03	42.99	34.13	54.65	43.39	5.1495
Austria	Paris CAIT	Yes	No							
Azerbaijan	Kyoto	No	No		55.51					
Azerbaijan	Copenhagen	No	No		49.95					

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Azerbaijan	Paris CAIT	Yes	Yes	Yes	70.79	22.45	22.45	35.01	35.01	
Bahamas, The	Kyoto	No	No		1.11					
Bahamas, The	Copenhagen	No	No		6.86					
Bahamas, The	Paris CAIT	Yes	Yes	No	2.80					
Bahrain	Kyoto	No	No		24.69					
Bahrain	Copenhagen	No	No		30.43					
Bahrain	Paris CAIT	Yes	No							
Bangladesh	Kyoto	No	No		152.96					
Bangladesh	Copenhagen	No	No		173.47					
Bangladesh	Paris CAIT	Yes	Yes	Yes	83.19	-115.71	-139.11	-58.76	-70.64	
Barbados	Kyoto	No	No		3.32					
Barbados	Copenhagen	No	No		3.60					
Barbados	Paris CAIT	Yes	Yes	Yes	3.36	0.52	0.52	15.37	15.37	
Belarus	Kyoto	No	No		64.83					
Belarus	Copenhagen	Yes	Yes	Yes	102.46	-30.77	-38.17	-47.32	-58.70	3.9131
Belarus	Paris CAIT	Yes	Yes	Yes	89.58	-8.74	-8.74	-9.79	-9.79	
Belgium	Kyoto	Yes	Yes	Yes	125.05	15.69	15.69	12.55	12.55	12.5092
Belgium	Copenhagen	Yes	Yes	Yes	151.71	46.86	31.88	38.23	26.01	8.7483
Belgium	Paris CAIT	Yes	Yes	Yes	104.87	23.59	23.59	22.50	22.50	
Belize	Kyoto	No	No		15.01					
Belize	Copenhagen	No	No		14.23					
Belize	Paris CAIT	Yes	No							
Benin	Kyoto	No	No		20.27					
Benin	Copenhagen	Yes	No							
Benin	Paris CAIT	Yes	Yes	Yes	12.71	-8.13	-12.88	-34.54	-54.70	
Bhutan	Kyoto	No	No		-3.38					
Bhutan	Copenhagen	Yes	No							
Bhutan	Paris CAIT	Yes	No							
Bolivia	Kyoto	No	No		120.22					
Bolivia	Copenhagen	No	No		153.17					
Bolivia	Paris CAIT	Yes	No		134.18					
Bosnia & Herzegovina	Kyoto	No	No		22.84					
Bosnia & Herzegovina	Copenhagen	No	No		27.54					
Bosnia & Herzegovina	Paris CAIT	Yes	Yes	Yes	28.80	8.76	4.42	30.42	15.35	
Botswana	Kyoto	No	No		58.92					
Botswana	Copenhagen	Yes	No							
Botswana	Paris CAIT	Yes	Yes	Yes	13.99	-1.87	-1.87	-5.11	-5.11	
Brazil	Kyoto	No	No		1939.66					
Brazil	Copenhagen	Yes	Yes	Yes	1440.25	-536.95	-627.56	-36.19	-42.29	-12.3165
Brazil	Paris CAIT	Yes	Yes	Yes	1357.18	135.20	135.20	9.96	9.96	

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Brunei	Kyoto	No	No							
Brunei	Copenhagen	No	No							
Brunei	Paris CAIT	Yes	No							
Bulgaria	Kyoto	Yes	Yes	No	47.97					-3.3014
Bulgaria	Copenhagen	Yes	Yes	Yes	67.02	-7.02	-17.60	-14.24	-35.68	8.3237
Bulgaria	Paris CAIT	Yes	Yes	Yes	47.89	-0.08	-0.08	-0.17	-0.17	
Burkina Faso	Kyoto	No	No		28.96					
Burkina Faso	Copenhagen	Yes	No		33.06					
Burkina Faso	Paris CAIT	Yes	Yes	Yes	32.60	19.43	18.59	59.60	57.04	
Burundi	Kyoto	No	No		6.85					
Burundi	Copenhagen	No	No		1.34					
Burundi	Paris CAIT	Yes	Yes	No	5.10					
Cabo Verde	Kyoto	No	No		0.62					
Cabo Verde	Copenhagen	No	No		0.72					
Cabo Verde	Paris CAIT	Yes	No		0.48					
Cambodia	Kyoto	No	No		53.11					
Cambodia	Copenhagen	Yes	No							
Cambodia	Paris CAIT	Yes	Yes	Yes	33.26	24.79	24.79	47.12	47.12	
Cameroon	Kyoto	No	No		196.41					
Cameroon	Copenhagen	Yes	No							
Cameroon	Paris CAIT	Yes	Yes	Yes	137.85	67.13	67.13	34.15	34.15	
Canada	Kyoto	Yes	Yes	Yes	975.74	366.46	366.46	37.56	37.56	17.1222
Canada	Copenhagen	Yes	Yes	Yes	906.01	96.15	96.15	10.61	10.61	-5.0093
Canada	Paris CAIT	Yes	Yes	Yes	867.00	183.98	183.98	21.22	21.22	
Central African Rep.	Kyoto	No	No		61.13					
Central African Rep.	Copenhagen	Yes	No							
Central African Rep.	Paris CAIT	Yes	Yes	Yes	61.89	-48.58	-48.58	-78.49	-78.49	
Chad	Kyoto	No	No		36.74					
Chad	Copenhagen	Yes	No							
Chad	Paris CAIT	Yes	Yes	Yes	52.55	39.20	14.88	74.41	28.26	
Chile	Kyoto	No	No		68.91					
Chile	Copenhagen	Yes	Yes	No	83.48					-26.7034
Chile	Paris CAIT	Yes	Yes	No	97.15					
China	Kyoto	No	No		6927.72					
China	Copenhagen	Yes	Yes	Yes	9712.78	1983.91	1281.37	20.43	13.19	-23.3258
China	Paris CAIT	Yes	Yes	Yes	11600.63	3060.49	1840.32	26.38	15.86	
Colombia	Kyoto	No	No		309.04					
Colombia	Copenhagen	Yes	No							
Colombia	Paris CAIT	Yes	Yes	Yes	182.39	-85.61	-85.61	-46.94	-46.94	
Comoros	Kyoto	No	No		0.42					

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Comoros	Copenhagen	No	No		0.45					
Comoros	Paris CAIT	Yes	Yes	Yes	0.46	0.38	0.38	81.99	81.99	
Congo, Dem. Rep.	Kyoto	No	No		203.27					
Congo, Dem. Rep.	Copenhagen	No	No		208.45					
Congo, Dem. Rep.	Paris CAIT	Yes	Yes	Yes	195.42	170.52	170.52	82.48	82.48	
Congo, Rep.	Kyoto	No	No		21.30					
Congo, Rep.	Copenhagen	Yes	No		17.78					
Congo, Rep.	Paris CAIT	Yes	Yes	Yes	19.29	10.45	10.45	54.18	54.18	
Cook Islands (the)	Kyoto	No	No		0.10					
Cook Islands (the)	Copenhagen	Yes	No							
Cook Islands (the)	Paris CAIT	Yes	Yes	Yes	0.07	0.06	0.03	52.45	26.40	
Costa Rica	Kyoto	No	No		3.87					
Costa Rica	Copenhagen	Yes	No		5.23					
Costa Rica	Paris CAIT	Yes	Yes	Yes	2.53	1.01	1.01	39.81	39.81	
Cote d'Ivoire	Kyoto	No	No		17.36					
Cote d'Ivoire	Copenhagen	Yes	No							
Cote d'Ivoire	Paris CAIT	Yes	Yes	Yes	37.57	12.91	12.91	32.92	32.92	
Croatia	Kyoto	Yes	Yes	Yes	16.40	-0.73	-0.73	-4.42	-4.42	-22.6812
Croatia	Copenhagen	Yes	Yes	Yes	31.62	0.08	0.08	0.52	0.52	9.3506
Croatia	Paris CAIT	Yes	Yes	Yes	18.84	3.59	3.59	19.04	19.04	
Cuba	Kyoto	No	No		7.38					
Cuba	Copenhagen	No	No		86.81					
Cuba	Paris CAIT	Yes	No							
Cyprus	Kyoto	No	No		8.66					
Cyprus	Copenhagen	Yes	Yes	Yes	11.04	6.69	6.07	79.45	72.07	6.4685
Cyprus	Paris CAIT	Yes	Yes	Yes	6.72	0.14	0.14	2.08	2.08	
Czech Republic	Kyoto	Yes	Yes	Yes	125.93	-29.08	-29.08	-23.10	-23.10	10.2714
Czech Republic	Copenhagen	Yes	Yes	Yes	147.11	15.50	-3.30	12.53	-2.67	8.0768
Czech Republic	Paris CAIT	Yes	Yes	Yes	104.27	-4.02	-4.02	-3.86	-3.86	
Denmark	Kyoto	Yes	Yes	Yes	64.56	11.41	11.41	17.68	17.68	21.7233
Denmark	Copenhagen	Yes	Yes	Yes	74.31	20.42	12.72	32.80	20.43	32.4705
Denmark	Paris CAIT	Yes	Yes	Yes	48.28	8.90	8.90	18.43	18.43	
Djibouti	Kyoto	No	No		1.17					
Djibouti	Copenhagen	No	No		1.28					
Djibouti	Paris CAIT	Yes	Yes	Yes	1.51	0.23	-0.41	15.24	-27.15	
Dominica	Kyoto	No	No		0.23					
Dominica	Copenhagen	Yes	No		0.77					
Dominica	Paris CAIT	Yes	Yes	Yes	0.36	0.16	0.16	45.00	45.00	
Dominican Rep.	Kyoto	No	No		19.51					
Dominican Rep.	Copenhagen	No	No		23.73					

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Dominican Rep.	Paris CAIT	Yes	Yes	Yes	24.41	6.61	6.61	27.09	27.09	
EU28	Kyoto	Yes	Yes	Yes	4556.48	2.69	2.69	0.06	0.06	15.0156
EU28	Copenhagen	Yes	Yes	Yes	5407.85	606.94	606.94	14.61	14.61	11.8595
EU28	Paris CAIT	Yes	Yes	Yes	3624.82	654.95	654.95	18.07	18.07	
Ecuador	Kyoto	No	No		77.95					
Ecuador	Copenhagen	No	No		87.66					
Ecuador	Paris CAIT	Yes	Yes	No	41.65					
Egypt, Arab Rep.	Kyoto	No	No		226.98					
Egypt, Arab Rep.	Copenhagen	Yes	No							
Egypt, Arab Rep.	Paris CAIT	Yes	No							
El Salvador	Kyoto	No	No		13.04					
El Salvador	Copenhagen	No	No		12.91					
El Salvador	Paris CAIT	Yes	No							
Equatorial Guinea	Kyoto	No	No		24.92					
Equatorial Guinea	Copenhagen	No	No		25.72					
Equatorial Guinea	Paris CAIT	Yes	Yes	Yes	25.94	5.36	5.36	20.67	20.67	
Eritrea	Kyoto	No	No		7.08					
Eritrea	Copenhagen	Yes	No							
Eritrea	Paris CAIT	Yes	Yes	Yes	7.42	5.82	2.41	78.55	32.55	
Estonia	Kyoto	Yes	Yes	Yes	28.20	-10.83	-10.83	-38.39	-38.39	10.3018
Estonia	Copenhagen	Yes	Yes	Yes	25.29	-6.40	-10.93	-26.41	-45.09	-10.0857
Estonia	Paris CAIT	Yes	Yes	Yes	26.43	1.89	1.89	7.16	7.16	
Ethiopia	Kyoto	No	No		123.49					
Ethiopia	Copenhagen	Yes	No		146.06					
Ethiopia	Paris CAIT	Yes	Yes	Yes	147.73	36.13	36.13	24.46	24.46	
Micronesia	Kyoto	No	No		0.15					
Micronesia	Copenhagen	No	No		0.14					
Micronesia	Paris CAIT	Yes	Yes	Yes	0.16	0.07	0.06	48.17	42.22	
Fiji	Kyoto	No	No		0.07					
Fiji	Copenhagen	No	No		2.87					
Fiji	Paris CAIT	Yes	Yes	Yes	1.07	-0.68	-0.68	88.11	88.11	
Finland	Kyoto	Yes	Yes	Yes	53.90	4.77	4.77	8.85	8.85	-27.0559
Finland	Copenhagen	Yes	Yes	Yes	88.68	28.90	20.36	51.53	36.31	25.8883
Finland	Paris CAIT	Yes	Yes	Yes	65.24	32.36	32.36	49.60	49.60	
France	Kyoto	Yes	Yes	Yes	420.04	-48.87	-48.87	-11.63	-11.63	
France	Copenhagen	Yes	Yes	Yes	585.95	161.64	101.02	39.47	24.67	
France	Paris CAIT	Yes	Yes	Yes	334.28	69.65	69.65	20.84	20.84	
Gabon	Kyoto	No	No		6.36					
Gabon	Copenhagen	Yes	No							
Gabon	Paris CAIT	Yes	Yes	No	-86.90					

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Gambia, The	Kyoto	No	No		5.60					
Gambia, The	Copenhagen	No	No							
Gambia, The	Paris CAIT	Yes	Yes	Yes	7.69	5.49	5.49	73.72	73.72	
Georgia	Kyoto	No	No		8.18					
Georgia	Copenhagen	Yes	No							
Georgia	Paris CAIT	Yes	Yes	Yes	16.38	-16.27	-16.27	-99.30	-99.30	
Germany	Kyoto	Yes	Yes	Yes	909.69	37.89	37.89	4.17	4.17	7.8030
Germany	Copenhagen	Yes	Yes	Yes	1040.28	121.40	-9.87	13.82	-1.12	7.8080
Germany	Paris CAIT	Yes	Yes	Yes	816.64	252.63	252.63	30.94	30.94	
Ghana	Kyoto	No	No		59.85					
Ghana	Copenhagen	Yes	No							
Ghana	Paris CAIT	Yes	Yes	Yes	38.57	-2.10	-24.29	-5.45	-62.97	
Greece	Kyoto	Yes	Yes	Yes	120.62	1.17	1.17	0.97	0.97	22.1107
Greece	Copenhagen	Yes	Yes	Yes	125.33	47.44	36.31	46.21	35.37	19.5498
Greece	Paris CAIT	Yes	Yes	Yes	83.44	-17.88	-17.88	-21.43	-21.43	
Grenada	Kyoto	No	No		2.19					
Grenada	Copenhagen	No	No		1.76					
Grenada	Paris CAIT	Yes	Yes	No						
Guatemala	Kyoto	No	No		40.60					
Guatemala	Copenhagen	No	No		40.10					
Guatemala	Paris CAIT	Yes	Yes	Yes	38.40	7.14	2.27	18.60	5.92	
Guinea	Kyoto	No	No		26.86					
Guinea	Copenhagen	Yes	No							
Guinea	Paris CAIT	Yes	Yes	Yes	28.33	9.21	9.21	30.51	30.51	
Guinea-Bissau	Kyoto	No	No		3.64					
Guinea-Bissau	Copenhagen	No	No		3.31					
Guinea-Bissau	Paris CAIT	Yes	No							
Guyana	Kyoto	No	No		16.74					
Guyana	Copenhagen	No	No		12.22					
Guyana	Paris CAIT	Yes	No							
Haiti	Kyoto	No	No		7.61					
Haiti	Copenhagen	No	No		8.00					
Haiti	Paris CAIT	Yes	Yes	No	8.45					
Honduras	Kyoto	No	No		47.76					
Honduras	Copenhagen	No	No		47.30					
Honduras	Paris CAIT	Yes	Yes	No	21.47					
Hungary	Kyoto	Yes	Yes	No	78.73					21.1097
Hungary	Copenhagen	Yes	Yes	Yes	74.77	7.14	-2.53	10.78	-3.82	-0.3911
Hungary	Paris CAIT	Yes	Yes	Yes	61.00	-12.22	-12.22	-20.03	-20.03	
Iceland	Kyoto	Yes	Yes	Yes	3.03	-0.34	-0.34	-11.10	-11.10	16.6735

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Iceland	Copenhagen	Yes	Yes	Yes	2.78	0.64	0.64	22.95	22.95	-11.2264
Iceland	Paris CAIT	Yes	Yes	Yes	2.73	0.90	0.90	32.85	32.85	
India	Kyoto	No	No		1805.11					
India	Copenhagen	Yes	Yes	Yes	2469.01	603.38	479.03	24.44	19.40	-49.7757
India	Paris CAIT	Yes	Yes	Yes	3202.31	-2036.93	-2198.14	-63.61	-68.64	
Indonesia	Kyoto	No	No		1748.60					
Indonesia	Copenhagen	Yes	Yes	Yes	1994.78	-188.22	-188.22	-9.44	-9.44	-33.2902
Indonesia	Paris CAIT	Yes	Yes	Yes	2471.64	778.93	348.58	31.51	14.10	
Iran, Islamic Rep.	Kyoto	No	No		565.91					
Iran, Islamic Rep.	Copenhagen	No	No		670.47					
Iran, Islamic Rep.	Paris CAIT	Yes	Yes	No	800.68					
Iraq	Kyoto	No	No		172.41					
Iraq	Copenhagen	No	No		229.62					
Iraq	Paris CAIT	Yes	Yes	No	294.90					
Ireland	Kyoto	Yes	Yes	Yes	68.84	10.80	10.80	15.69	15.69	13.8135
Ireland	Copenhagen	Yes	Yes	Yes	74.31	33.31	27.45	59.85	49.32	9.8481
Ireland	Paris CAIT	Yes	Yes	Yes	58.27	10.08	10.08	17.30	17.30	
Israel	Kyoto	No	No		74.83					
Israel	Copenhagen	Yes	Yes	Yes	87.19	1.59	1.59	1.82	1.82	
Israel	Paris CAIT	Yes	Yes	Yes	90.74	31.49	31.49	36.02	36.02	
Italy	Kyoto	Yes	Yes	Yes	523.18	96.11	96.11	18.37	18.37	
Italy	Copenhagen	Yes	Yes	Yes	588.26	177.31	118.60	39.86	26.66	
Italy	Paris CAIT	Yes	Yes	Yes	368.82	18.29	18.29	4.96	4.96	
Jamaica	Kyoto	No	No		13.26					
Jamaica	Copenhagen	No	No		9.76					
Jamaica	Paris CAIT	Yes	Yes	Yes	7.36	-4.68	-4.94	-45.97	-48.60	
Japan	Kyoto	Yes	Yes	Yes	1264.30	222.41	222.41	17.59	17.59	-5.6496
Japan	Copenhagen	Yes	Yes	Yes	1083.31	-132.95	-132.95	-12.27	-12.27	-0.0939
Japan	Paris CAIT	Yes	Yes	Yes	1322.05	314.83	314.83	23.81	23.81	
Jordan	Kyoto	No	No		24.48					
Jordan	Copenhagen	Yes	No							
Jordan	Paris CAIT	Yes	Yes	Yes	32.40	-4.27	-10.51	-13.19	-32.44	
Kazakhstan	Kyoto	No	No		213.25					
Kazakhstan	Copenhagen	Yes	Yes	Yes	283.68	0.35	0.35	0.12	0.12	-30.6793
Kazakhstan	Paris CAIT	Yes	Yes	Yes	286.86	39.47	6.48	13.52	2.22	
Kenya	Kyoto	No	No		-6.30					
Kenya	Copenhagen	No	No		27.85					
Kenya	Paris CAIT	Yes	Yes	No	29.29					
Kiribati	Kyoto	No	No		0.07					
Kiribati	Copenhagen	No	No		0.08					

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Kiribati	Paris CAIT	Yes	Yes	Yes	0.06	-68.52	-68.52	-86515.27	-86515.27	
Korea, DPR	Kyoto	No	No		114.18					
Korea, DPR.	Copenhagen	No	No		108.22					
Korea, DPR	Paris CAIT	No	No		83.02					
Korea, Rep.	Kyoto	No	No		504.45					
Korea, Rep.	Copenhagen	Yes	Yes	Yes	596.94	70.47	70.47	11.81	11.81	-16.3333
Korea, Rep.	Paris CAIT	Yes	Yes	Yes	671.19	251.52	251.52	39.82	39.82	
Kosovo	Kyoto	No	No							
Kosovo	Copenhagen	No	No							
Kosovo	Paris CAIT	No	No							
Kuwait	Kyoto	No	No		173.95					
Kuwait	Copenhagen	No	No		187.25					
Kuwait	Paris CAIT	Yes	No							
Kyrgyz Republic	Kyoto	No	No		7.55					
Kyrgyz Republic	Copenhagen	Yes	Yes	No	26.18					-54.5647
Kyrgyz Republic	Paris CAIT	Yes	Yes	Yes	14.35	4.00	1.08	27.89	7.51	
Lao PDR	Kyoto	No	No		27.63					
Lao PDR	Copenhagen	No	No		32.91					
Lao PDR	Paris CAIT	Yes	No							
Latvia	Kyoto	Yes	Yes	Yes	11.23	-4.12	-4.12	-36.73	-36.73	84.6417
Latvia	Copenhagen	Yes	Yes	Yes	16.52	-3.99	-6.92	-605.36	-1049.91	12.1852
Latvia	Paris CAIT	Yes	Yes	Yes	1.84	-8.71	-8.71	-472.36	-472.36	
Lebanon	Kyoto	No	No		19.33					
Lebanon	Copenhagen	No	No		23.82					
Lebanon	Paris CAIT	Yes	Yes	No	28.59					
Lesotho	Kyoto	No	No		3.96					
Lesotho	Copenhagen	No	No		4.14					
Lesotho	Paris CAIT	Yes	Yes	No	4.35					
Liberia	Kyoto	No	No		16.60					
Liberia	Copenhagen	No	No		16.91					
Liberia	Paris CAIT	Yes	Yes	Yes	1.52	-2.98	-2.98	-85.01	-85.01	
Libya	Kyoto	No	No		121.14					
Libya	Copenhagen	No	No		139.58					
Libya	Paris CAIT	No	No		133.67					
Liechtenstein	Kyoto	Yes	Yes	No						
Liechtenstein	Copenhagen	Yes	Yes	No	0.08					
Liechtenstein	Paris CAIT	Yes	Yes	No	0.07					
Lithuania	Kyoto	Yes	Yes	Yes	24.33	-19.32	-19.32	-79.40	-79.40	16.5011
Lithuania	Copenhagen	Yes	Yes	Yes	25.03	-10.55	-15.63	-49.42	-73.24	-4.3121
Lithuania	Paris CAIT	Yes	Yes	Yes	19.47	-2.67	-2.67	-13.71	-13.71	

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Luxembourg	Kyoto	Yes	Yes	Yes	12.76	4.34	4.34	34.00	34.00	7.4252
Luxembourg	Copenhagen	Yes	Yes	Yes	18.64	8.50	7.05	70.23	58.26	11.4585
Luxembourg	Paris CAIT	Yes	Yes	Yes	10.81	3.16	3.16	29.20	29.20	
Macedonia (FYR)	Kyoto	No	No		13.67					
Macedonia (FYR)	Copenhagen	Yes	No							
Macedonia (FYR)	Paris CAIT	Yes	Yes	Yes	9.33	-1.97	-3.03	-16.82	-25.87	
Madagascar	Kyoto	No	No		51.71					
Madagascar	Copenhagen	Yes	No							
Madagascar	Paris CAIT	Yes	Yes	Yes	48.33	-135.89	-135.89	-280.17	-280.17	
Malawi	Kyoto	No	No		14.54					
Malawi	Copenhagen	Yes	No							
Malawi	Paris CAIT	Yes	No							
Malaysia	Kyoto	No	No		392.85					
Malaysia	Copenhagen	No	No		263.37					
Malaysia	Paris CAIT	Yes	Yes	No	187.89					
Maldives	Kyoto	No	No		0.67					
Maldives	Copenhagen	Yes	No		1.02					
Maldives	Paris CAIT	Yes	Yes	Yes	1.41	-1.09	-1.56	-76.74	-109.16	
Mali	Kyoto	No	No		31.12					
Mali	Copenhagen	No	No		34.65					
Mali	Paris CAIT	Yes	Yes	No	38.32					
Malta	Kyoto	No	No		3.16					
Malta	Copenhagen	Yes	Yes	Yes	3.65	1.55	1.25	49.92	40.29	42.6689
Malta	Paris CAIT	Yes	Yes	Yes	2.97	0.41	0.41	13.67	13.67	
Marshall Islands	Kyoto	No	No		0.11					
Marshall Islands	Copenhagen	Yes	Yes	Yes	0.14	0.05	0.05	40.34	40.34	
Marshall Islands	Paris CAIT	Yes	Yes	Yes	0.14	0.06	0.05	45.46	32.89	
Mauritania	Kyoto	No	No		10.31					
Mauritania	Copenhagen	Yes	No							
Mauritania	Paris CAIT	Yes	Yes	No	9.68					
Mauritius	Kyoto	No	No		4.71					
Mauritius	Copenhagen	Yes	No							
Mauritius	Paris CAIT	Yes	Yes	Yes	5.83	0.93	0.93	15.92	15.92	
Mexico	Kyoto	No	No		701.59					
Mexico	Copenhagen	Yes	Yes	Yes	737.04	65.04	65.04	8.83	8.83	-3.4563
Mexico	Paris CAIT	Yes	Yes	Yes	729.10	-227.90	-227.90	-31.26	-31.26	
Moldova	Kyoto	No	No		11.24					
Moldova	Copenhagen	Yes	Yes	Yes	11.48	-16.32	-16.32	-142.23	-142.23	-3.0865
Moldova	Paris CAIT	Yes	Yes	Yes	11.20	3.05	-2.14	27.19	-19.14	
Monaco	Kyoto	Yes	Yes	No						

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Monaco	Copenhagen	Yes	Yes	No						
Monaco	Paris CAIT	Yes	Yes	No						
Mongolia	Kyoto	No	No		49.46					
Mongolia	Copenhagen	Yes	No							
Mongolia	Paris CAIT	Yes	Yes	Yes	40.86	-3.17	-3.17	-4.84	-4.84	
Montenegro	Kyoto	No	No		2.53					
Montenegro	Copenhagen	No	No		-13.24					
Montenegro	Paris CAIT	Yes	Yes	Yes	3.89	2.29	2.29	66.73	66.73	
Morocco	Kyoto	No	No		53.65					
Morocco	Copenhagen	Yes	No							
Morocco	Paris CAIT	Yes	Yes	Yes	80.22	-35.92	-68.37	-44.77	-85.22	
Mozambique	Kyoto	No	No		60.71					
Mozambique	Copenhagen	No	No		59.19					
Mozambique	Paris CAIT	Yes	No							
Myanmar	Kyoto	No	No		170.48					
Myanmar	Copenhagen	No	No		186.70					
Myanmar	Paris CAIT	Yes	No							
Namibia	Kyoto	No	No		19.47					
Namibia	Copenhagen	No	No		20.42					
Namibia	Paris CAIT	Yes	Yes	Yes	19.66	17.17	17.17	87.33	87.33	
Nauru	Kyoto	No	No		0.07					
Nauru	Copenhagen	No	No		0.05					
Nauru	Paris CAIT	Yes	No							
Nepal	Kyoto	No	No		60.63					
Nepal	Copenhagen	No	No		39.14					
Nepal	Paris CAIT	Yes	No							
Netherlands	Kyoto	Yes	Yes	Yes	205.78	18.14	18.14	8.82	8.82	8.5798
Netherlands	Copenhagen	Yes	Yes	Yes	234.37	78.08	55.75	38.79	27.70	12.5209
Netherlands	Paris CAIT	Yes	Yes	Yes	181.33	49.64	49.64	27.37	27.37	
New Zealand	Kyoto	Yes	Yes	Yes	62.93	19.98	19.98	31.75	31.75	4.9136
New Zealand	Copenhagen	Yes	Yes	Yes	57.54	16.74	16.74	29.09	29.09	-7.1173
New Zealand	Paris CAIT	Yes	Yes	Yes	60.34	16.29	16.29	26.99	26.99	
Nicaragua	Kyoto	No	No		42.21					
Nicaragua	Copenhagen	No	No		42.74					
Nicaragua	Paris CAIT	No	No		14.74					
Niger	Kyoto	No	No		21.26					
Niger	Copenhagen	No	No		26.00					
Niger	Paris CAIT	Yes	Yes	No	29.52					
Nigeria	Kyoto	No	No		443.65					
Nigeria	Copenhagen	No	No		461.16					

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Nigeria	Paris CAIT	Yes	Yes	No	492.44					
Niue	Kyoto	No	No		0.08					
Niue	Copenhagen	No	No		0.04					
Niue	Paris CAIT	Yes	No							
Norway	Kyoto	Yes	Yes	Yes	27.03	-4.44	-4.44	-16.41	-16.41	5.1873
Norway	Copenhagen	Yes	Yes	Yes	26.62	7.93	4.81	29.78	18.08	-7.9505
Norway	Paris CAIT	Yes	Yes	Yes	24.94	6.25	6.25	25.05	25.05	
Oman	Kyoto	No	No		64.88					
Oman	Copenhagen	No	No		84.60					
Oman	Paris CAIT	Yes	Yes	Yes	104.73	16.01	16.01	15.06	15.06	
Pakistan	Kyoto	No	No		284.63					
Pakistan	Copenhagen	No	No		329.18					
Pakistan	Paris CAIT	Yes	No							
Palau	Kyoto	No	No		0.14					
Palau	Copenhagen	No	No		0.27					
Palau	Paris CAIT	Yes	Yes	Yes	0.28	0.06	0.06	14.09	14.09	
Palestine	Kyoto	No	No							
Palestine	Copenhagen	No	No							
Palestine	Paris CAIT	No	No							
Panama	Kyoto	No	No		22.03					
Panama	Copenhagen	No	No		24.00					
Panama	Paris CAIT	No	No		26.31					
Papua New Guinea	Kyoto	No	No		65.66					
Papua New Guinea	Copenhagen	Yes	Yes	Yes	74.24	65.24	65.24	87.88	87.88	-27.3768
Papua New Guinea	Paris CAIT	Yes	No							
Paraguay	Kyoto	No	No		102.75					
Paraguay	Copenhagen	No	No		163.57					
Paraguay	Paris CAIT	Yes	Yes	Yes	183.23	-149.57	-191.17	-81.63	-104.33	
Peru	Kyoto	No	No		110.98					
Peru	Copenhagen	Yes	No							
Peru	Paris CAIT	Yes	Yes	Yes	161.51	64.00	50.07	39.62	31.00	
Philippines	Kyoto	No	No		155.70					
Philippines	Copenhagen	No	No		184.56					
Philippines	Paris CAIT	Yes	Yes	Yes	68.17	-54.80	-54.80	-45.16	-45.16	
Poland	Kyoto	Yes	Yes	No	343.81					0.6898
Poland	Copenhagen	Yes	Yes	Yes	423.56	111.01	66.36	41.22	24.64	-1.6672
Poland	Paris CAIT	Yes	Yes	Yes	327.80	8.05	8.05	2.46	2.46	
Portugal	Kyoto	Yes	Yes	Yes	88.42	14.71	14.71	16.63	16.63	26.2474
Portugal	Copenhagen	Yes	Yes	Yes	83.94	37.68	31.07	57.49	47.40	1.7068
Portugal	Paris CAIT	Yes	Yes	Yes	63.35	-10.04	-10.04	-15.85	-15.85	

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Qatar	Kyoto	No	No		45.07					
Qatar	Copenhagen	No	No		69.54					
Qatar	Paris CAIT	Yes	No							
Republic of Serbia	Kyoto	No	No		59.90					
Republic of Serbia	Copenhagen	Yes	Yes	Yes	-5.78	-60.47	-60.47	1046.67	1046.67	
Republic of Serbia	Paris CAIT	Yes	Yes	Yes	50.10	-18.42	-18.42	-36.77	-36.77	
Romania	Kyoto	Yes	Yes	No	134.88					132.4512
Romania	Copenhagen	Yes	Yes	Yes	129.73	-44.85	-69.79	-40.10	-62.39	2.9181
Romania	Paris CAIT	Yes	Yes	Yes	-54.98	-187.16	-187.16	340.44	340.44	
Russian Federation	Kyoto	Yes	Yes	Yes	2146.98	-1080.32	-1080.32	-50.32	-50.32	-1.7815
Russian Federation	Copenhagen	Yes	Yes	Yes	2056.75	-363.73	-686.46	-17.68	-33.38	-5.0269
Russian Federation	Paris CAIT	Yes	Yes	Yes	2030.14	1223.31	1061.95	60.26	52.31	
Rwanda	Kyoto	No	No		-4.12					
Rwanda	Copenhagen	No	No		5.94					
Rwanda	Paris CAIT	Yes	No							
Samoa	Kyoto	No	No		0.31					
Samoa	Copenhagen	No	No		-0.09					
Samoa	Paris CAIT	Yes	No							
San Marino	Kyoto	No	No							
San Marino	Copenhagen	Yes	No							
San Marino	Paris CAIT	Yes	Yes	No						
Sao Tome & Principe	Kyoto	No	No		0.14					
Sao Tome & Principe	Copenhagen	No	No		0.46					
Sao Tome & Principe	Paris CAIT	Yes	Yes	Yes	0.19	0.01	0.01	4.16	4.16	
Saudi Arabia	Kyoto	No	No		350.70					
Saudi Arabia	Copenhagen	No	No		482.79					
Saudi Arabia	Paris CAIT	Yes	No							
Senegal	Kyoto	No	No		28.32					
Senegal	Copenhagen	No	No		31.02					
Senegal	Paris CAIT	Yes	Yes	Yes	30.45	0.75	-5.27	2.46	-17.30	
Seychelles	Kyoto	No	No		0.75					
Seychelles	Copenhagen	No	No		0.51					
Seychelles	Paris CAIT	Yes	Yes	Yes	0.56	-0.09	-0.09	-16.25	-16.25	
Sierra Leone	Kyoto	No	No		10.27					
Sierra Leone	Copenhagen	Yes	No							
Sierra Leone	Paris CAIT	Yes	No							
Singapore	Kyoto	No	No		42.64					
Singapore	Copenhagen	Yes	Yes	Yes	50.01	-12.15	-12.15	-24.28	-24.28	-9.6313
Singapore	Paris CAIT	Yes	Yes	No	52.42					
Slovak Republic	Kyoto	Yes	Yes	Yes	37.69	-14.56	-14.56	-38.64	-38.64	8.5027

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Slovak Republic	Copenhagen	Yes	Yes	Yes	49.84	0.29	-6.79	0.79	-18.72	3.8865
Slovak Republic	Paris CAIT	Yes	Yes	Yes	33.02	-0.14	-0.14	-0.43	-0.43	
Slovenia	Kyoto	Yes	Yes	No	8.94					-37.6560
Slovenia	Copenhagen	Yes	Yes	Yes	24.24	9.70	7.63	86.87	68.28	13.0695
Slovenia	Paris CAIT	Yes	Yes	Yes	10.46	2.86	2.86	27.38	27.38	
Solomon Islands	Kyoto	No	No		2.15					
Solomon Islands	Copenhagen	No	No		2.15					
Solomon Islands	Paris CAIT	Yes	Yes	Yes	2.18	2.18	2.18	85.53	85.53	
Somalia	Kyoto	No	No		42.12					
Somalia	Copenhagen	No	No		37.98					
Somalia	Paris CAIT	Yes	No							
South Africa	Kyoto	No	No		453.34					
South Africa	Copenhagen	Yes	Yes	Yes	492.05	43.32	43.32	8.80	8.80	-2.6623
South Africa	Paris CAIT	Yes	No							
South Sudan	Kyoto	No	No							
South Sudan	Copenhagen	No	No							
South Sudan	Paris CAIT	Yes	No							
Spain	Kyoto	Yes	Yes	Yes	377.20	118.35	118.35	31.38	31.38	
Spain	Copenhagen	Yes	Yes	Yes	438.39	203.97	170.48	66.45	55.54	
Spain	Paris CAIT	Yes	Yes	Yes	272.67	-6.46	-6.46	-2.37	-2.37	
Sri Lanka	Kyoto	No	No		41.60					
Sri Lanka	Copenhagen	No	No		39.51					
Sri Lanka	Paris CAIT	Yes	Yes	No	39.42					
St. Kitts & Nevis	Kyoto	No	No		0.26					
St. Kitts & Nevis	Copenhagen	No	No		0.42					
St. Kitts & Nevis	Paris CAIT	Yes	Yes	Yes	0.39	-0.15	-0.15	-39.07	-39.07	
St. Lucia	Kyoto	No	No		1.05					
St. Lucia	Copenhagen	No	No		1.34					
St. Lucia	Paris CAIT	Yes	Yes	Yes	0.41	-0.17	-0.17	-14.84	-14.84	
St. Vincent and the Grenadines	Kyoto	No	No		0.24					
St. Vincent and the Grenadines	Copenhagen	No	No		0.47					
St. Vincent and the Grenadines	Paris CAIT	Yes	Yes	Yes	0.29	-0.17	-0.17	-59.71	-59.71	
Sudan	Kyoto	No	No		412.79					
Sudan	Copenhagen	No	No		344.83					
Sudan	Paris CAIT	Yes	No							
Suriname	Kyoto	No	No		6.96					
Suriname	Copenhagen	No	No		6.96					
Suriname	Paris CAIT	Yes	No							
Swaziland	Kyoto	No	No		2.90					
Swaziland	Copenhagen	Yes	No							

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Swaziland	Paris CAIT	Yes	No							
Sweden	Kyoto	Yes	Yes	Yes	12.16	-37.51	-37.51	-308.47	-308.47	-294.3839
Sweden	Copenhagen	Yes	Yes	Yes	80.42	19.17	10.42	35.15	19.11	16.4064
Sweden	Paris CAIT	Yes	Yes	Yes	46.91	39.62	39.62	84.45	84.45	
Switzerland	Kyoto	Yes	Yes	Yes	51.88	5.94	5.94	11.44	11.44	
Switzerland	Copenhagen	Yes	Yes	Yes	49.61	14.65	9.66	29.53	19.46	
Switzerland	Paris CAIT	Yes	Yes	Yes	46.15	21.18	21.18	45.90	45.90	
Syria	Kyoto	No	No		87.58					
Syria	Copenhagen	No	No		88.24					
Syria	Paris CAIT	No	No		62.20					
Taiwan, China	Kyoto	No	No							
Taiwan, China	Copenhagen	No	No							
Taiwan, China	Paris CAIT	No	No							
Tajikistan	Kyoto	No	No		7.13					
Tajikistan	Copenhagen	Yes	No							
Tajikistan	Paris CAIT	Yes	Yes	Yes	11.96	0.64	-3.71	5.35	-31.06	
Tanzania	Kyoto	No	No		317.43					
Tanzania	Copenhagen	No	No		299.83					
Tanzania	Paris CAIT	Yes	Yes	No	286.49					
Thailand	Kyoto	No	No		311.04					
Thailand	Copenhagen	Yes	Yes	No	296.48					-14.5617
Thailand	Paris CAIT	Yes	Yes	Yes	358.42	-57.83	-85.58	-15.45	-22.86	
Timor-Leste	Kyoto	No	No							
Timor-Leste	Copenhagen	No	No							
Timor-Leste	Paris CAIT	No	No							
Togo	Kyoto	No	No		12.15					
Togo	Copenhagen	Yes	No							
Togo	Paris CAIT	Yes	Yes	Yes	11.86	-14.95	-22.73	-110.20	-167.48	
Tonga	Kyoto	No	No		0.29					
Tonga	Copenhagen	No	No		-0.19					
Tonga	Paris CAIT	Yes	No							
Trinidad & Tobago	Kyoto	No	No		21.37					
Trinidad & Tobago	Copenhagen	No	No		25.73					
Trinidad & Tobago	Paris CAIT	Yes	Yes	Yes	3.20	-32.42	-32.42	-130.08	-130.08	
Tunisia	Kyoto	No	No		30.26					
Tunisia	Copenhagen	Yes	No							
Tunisia	Paris CAIT	Yes	Yes	Yes	37.88	17.07	7.20	45.07	19.00	
Turkey	Kyoto	No	No		286.24					
Turkey	Copenhagen	No	No		320.08					
Turkey	Paris CAIT	Yes	Yes	No	366.61					

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Turkmenistan	Kyoto	No	No		85.93					
Turkmenistan	Copenhagen	No	No		98.91					
Turkmenistan	Paris CAIT	Yes	Yes	No						
Tuvalu	Kyoto	No	No		0.02					
Tuvalu	Copenhagen	No	No		0.02					
Tuvalu	Paris CAIT	Yes	Yes	Yes	0.01	0.01	0.01	44.86	44.86	
Uganda	Kyoto	No	No		43.70					
Uganda	Copenhagen	No	No		56.42					
Uganda	Paris CAIT	Yes	Yes	No						
Ukraine	Kyoto	Yes	Yes	Yes	377.17	-474.47	-474.47	-125.80	-125.80	0.2602
Ukraine	Copenhagen	Yes	Yes	Yes	351.38	-329.93	-329.93	-93.89	-93.89	36.2688
Ukraine	Paris CAIT	Yes	Yes	Yes	344.13	-166.85	-166.85	-48.48	-48.48	
UAE	Kyoto	No	No		147.12					
UAE	Copenhagen	No	No		196.05					
UAE	Paris CAIT	Yes	No							
United Kingdom	Kyoto	Yes	Yes	Yes	622.37	-12.51	-12.51	-2.01	-2.01	12.3712
United Kingdom	Copenhagen	Yes	Yes	Yes	688.82	91.94	6.67	16.41	1.19	25.6896
United Kingdom	Paris CAIT	Yes	Yes	Yes	493.90	101.80	101.80	20.61	20.61	
United States	Kyoto	No	No		6429.55					
United States	Copenhagen	Yes	Yes	Yes	6115.68	779.15	779.15	12.74	12.74	5.0395
United States	Paris CAIT	Yes	Yes	Yes	6319.02	1689.75	1561.16	26.74	24.71	
Uruguay	Kyoto	No	No		18.15					
Uruguay	Copenhagen	No	No		13.45					
Uruguay	Paris CAIT	Yes	No							
Vanuatu	Kyoto	No	No		0.51					
Vanuatu	Copenhagen	No	No		0.63					
Vanuatu	Paris CAIT	Yes	Yes	No	0.18					
Venezuela, RB	Kyoto	No	No		353.01					
Venezuela, RB	Copenhagen	No	No		272.54					
Venezuela, RB	Paris CAIT	Yes	Yes	No	11.35					
Vietnam	Kyoto	No	No		165.26					
Vietnam	Copenhagen	No	No		242.12					
Vietnam	Paris CAIT	Yes	Yes	Yes	220.76	-369.79	-503.64	-146.77	-199.90	
Western Sahara	Kyoto	No	No							
Western Sahara	Copenhagen	No	No							
Western Sahara	Paris CAIT	No	No							
Yemen, Rep.	Kyoto	No	No		27.37					
Yemen, Rep.	Copenhagen	No	No		33.26					
Yemen, Rep.	Paris CAIT	Yes	Yes	Yes	32.31	-5.37	-11.07	-15.79	-32.54	
Zambia	Kyoto	No	No		476.86					

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Country	Pledge	Party to the pledge	Quantified objective specified	Can quantify target	Start year emissions (MTCO2 eq)	Targeted reduction from starting year of pledge				Progress with Kyoto Copen (%)
						Absolute (in MTCO2 eq.)		Relative (% of start emissions)		
						Conditional	Unconditional	Conditional	Unconditional	
Zambia	Copenhagen	No	No		399.41					
Zambia	Paris CAIT	Yes	Yes	Yes	378.72	167.36	167.36	44.06	44.06	
Zimbabwe	Kyoto	No	No		62.88					
Zimbabwe	Copenhagen	No	No		63.14					
Zimbabwe	Paris CAIT	Yes	Yes	No	14.85					

Notes: The table provides a summary of the agreements made under the Kyoto Protocol, Copenhagen Accord and Paris Agreement by country. The quantified objective refers to whether the country provided a numerical objective for emissions reduction whereas the column specifying whether the target can be quantified refers to whether there is sufficient information to convert the aforementioned numerical objective into a targeted reduction in emissions from the starting year of the pledge.

The targeted reductions are provided for the countries for which this calculation is carried out as described in Section 4. Start year GHG emissions are measured in metric tons of carbon dioxide equivalent and the start years for the Kyoto, Copenhagen and Paris agreements are taken as 2005, 2009 and 2014, respectively.

The last column reports progress made to date on the Kyoto and Copenhagen agreements. Progress is defined as the decrease in emissions from the start year to the end year as a percentage of start year emissions. It is measured in GHG emissions for the Kyoto protocol and fossil CO2 emissions for the Copenhagen accord. The end year for the Kyoto protocol is 2012 and the end year for the Copenhagen accord is the last year for which data is available, 2018.