A collage of typical climate and weather-related events: floods, heatwaves, drought, hurricanes, wildfires and loss of glacial ice. (NOAA)

ASIA AND PACIFIC DEPARTMENT

INTERNATIONAL MONETARY FUND

Public Perceptions of Climate Mitigation Policies: Evidence from Cross Country Surveys

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IMF-JICA CONFERENCE

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The challenge of climate mitigation

- Urgent need to narrow gaps in climate mitigation **ambitions** and **policy**

- Growing public awareness of climate threat, but doesn't always translate into actions

- High energy prices could further complicate mitigation efforts

**This paper: understand drivers of public perceptions of climate change and support for climate policies**

➢ Novel surveys for 28 advanced and emerging market economies, including 11 in Asia; run *July 5 - Aug 11, 2022*

Survey

Majority agree climate change is serious problem
Recognition presents compelling call for decision-makers to step up on ambition

Climate change is a serious problem

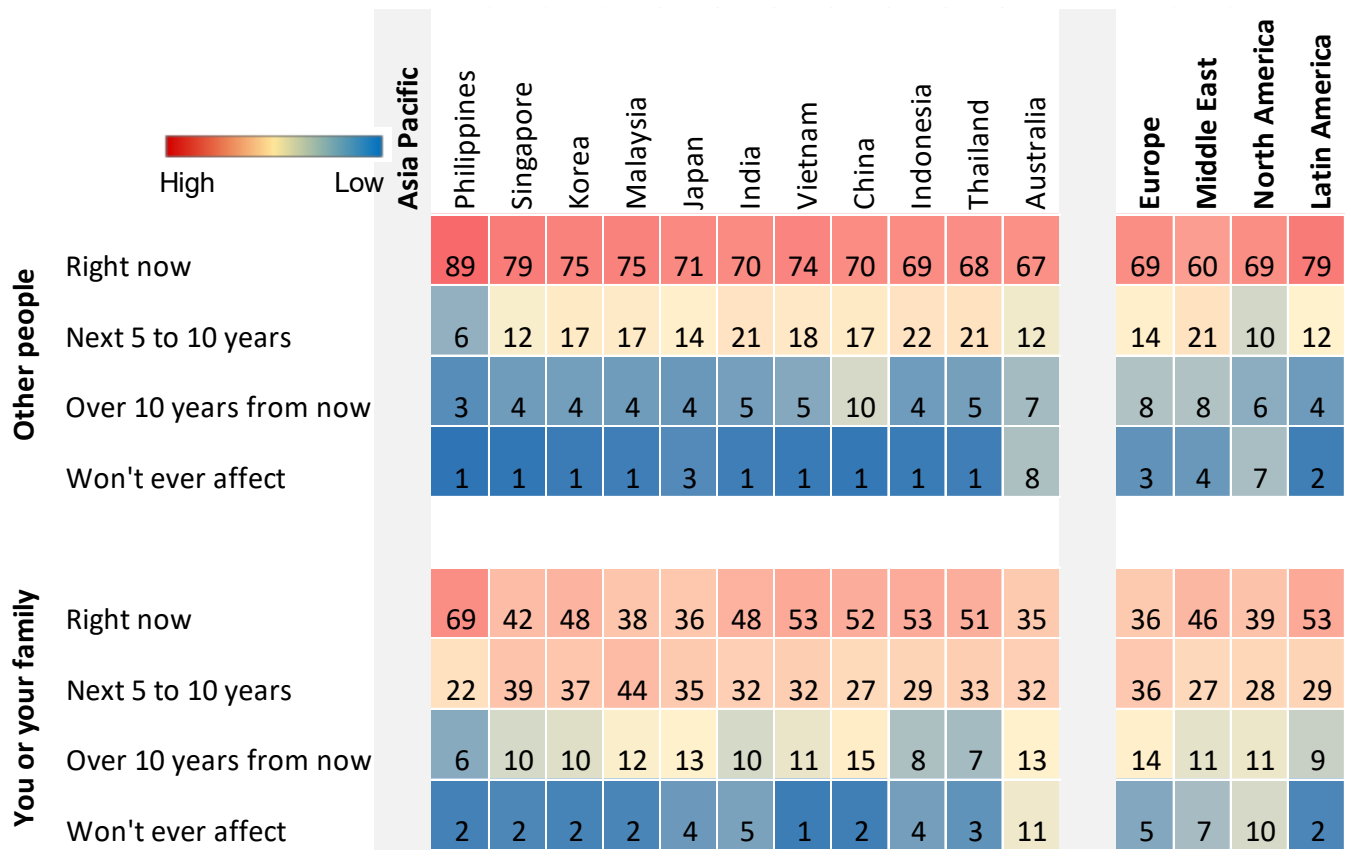(Share of respondents)

Percent
68   82   96
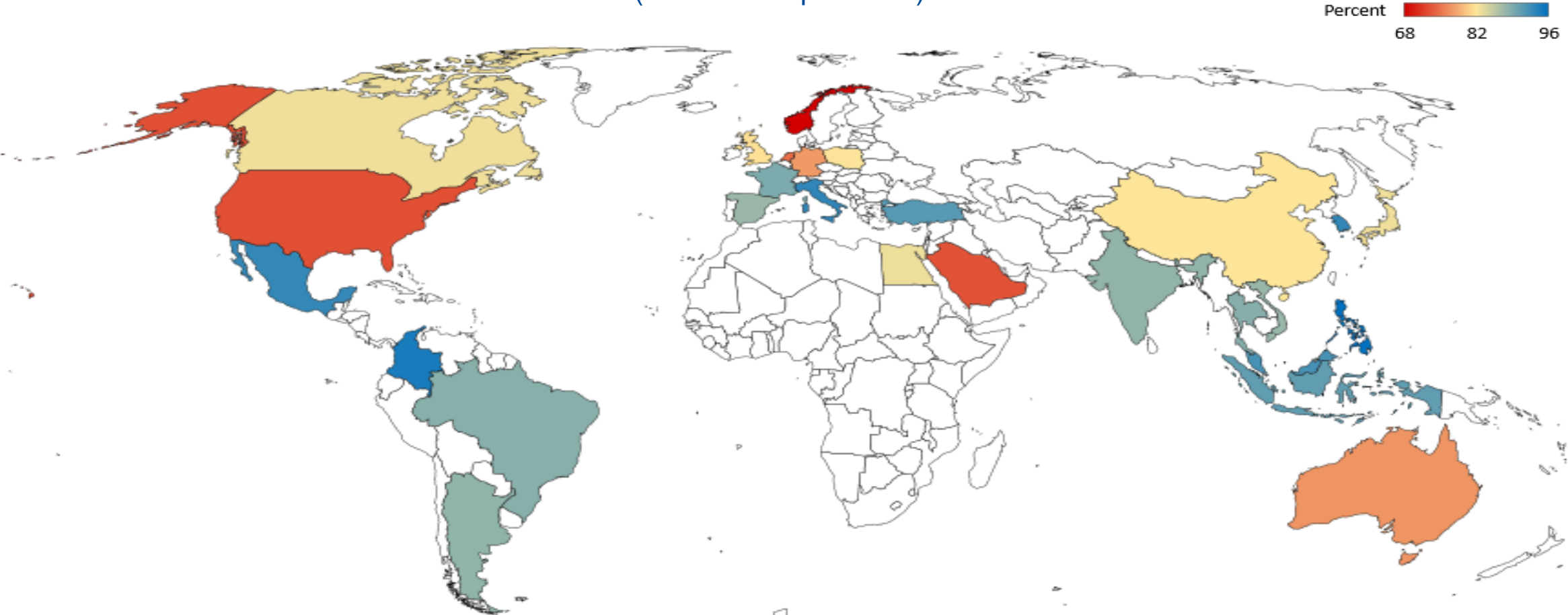
Note: This figure shows the share of people in each country who answered the question "*In your view, how serious of a problem is climate change?*" with "a very serious problem" or "a fairly serious problem".
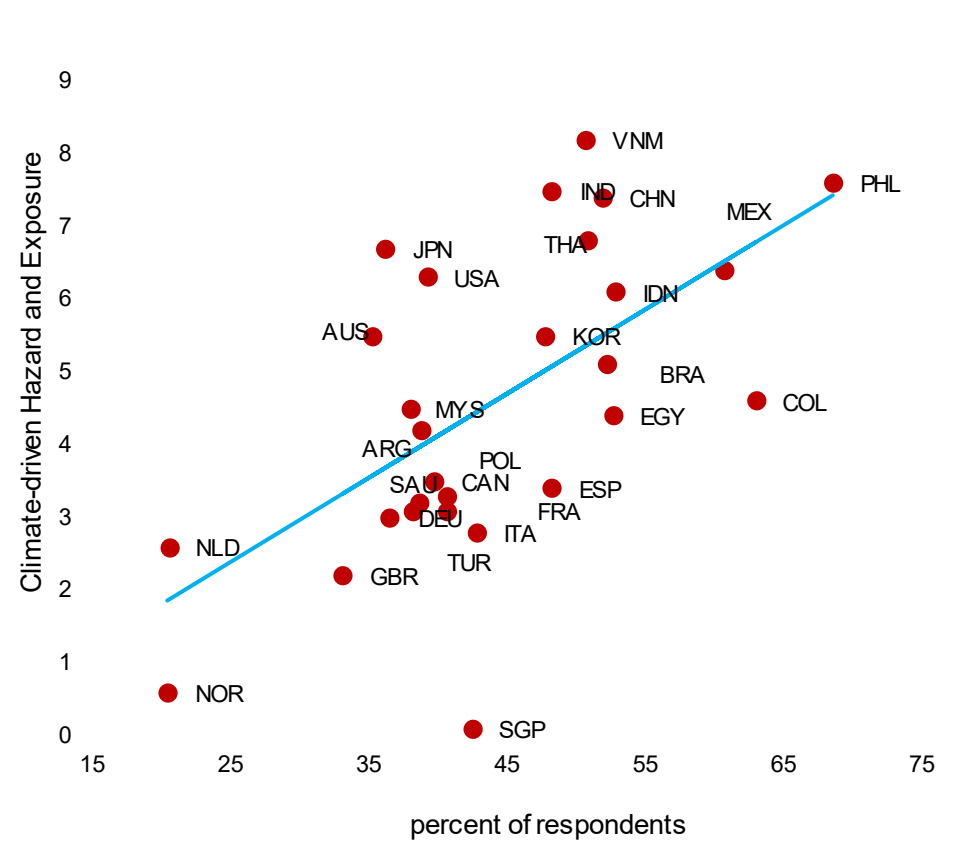
Climate risk perceptions higher in emerging markets
Imminence varies, correlated with country climate change exposure

When will climate change affect other people vs. your family?
(share of responses)

High ————— Low

Other people

	Asia Pacific	Philippines	Singapore	Korea	Malaysia	Japan	India	Vietnam	China	Indonesia	Thailand	Australia		Europe	Middle East	North America	Latin America
Right now		89	79	75	75	71	70	74	70	69	68	67		69	60	69	79
Next 5 to 10 years		6	12	17	17	14	21	18	17	22	21	12		14	21	10	12
Over 10 years from now		3	4	4	4	4	5	5	10	4	5	7		8	8	6	4
Won't ever affect		1	1	1	1	3	1	1	1	1	1	8		3	4	7	2

You or your family

		Philippines	Singapore	Korea	Malaysia	Japan	India	Vietnam	China	Indonesia	Thailand	Australia		Europe	Middle East	North America	Latin America
Right now		69	42	48	38	36	48	53	52	53	51	35		36	46	39	53
Next 5 to 10 years		22	39	37	44	35	32	32	27	29	33	32		36	27	28	29
Over 10 years from now		6	10	10	12	13	10	11	15	8	7	13		14	11	11	9
Won't ever affect		2	2	2	2	4	5	1	2	4	3	11		5	7	10	2

Correlation between IMF's INFORM index and climate change happening now

y-axis: Climate-driven Hazard and Exposure
x-axis: percent of respondents

Note: LHS figure shows average responses to the questions: *"Which of the following comes closest to your view of how climate change is affecting people around the world?"* and *"Which of the following comes closest to your view of how climate change will affect you or your family?"*. RHS figure shows average responses to the question "Climate change is affecting me or my family right now" (horizontal axis) and the Climate-driven Hazard and Exposure component of the IMF's INFORM Risk in 2022.

What explains risk perceptions? Role of individual characteristics
Important role for gender, education, energy usage, information, ideology, but cross-country variation

Regression coefficients & 95% CIs
(How serious of a problem is climate change?)
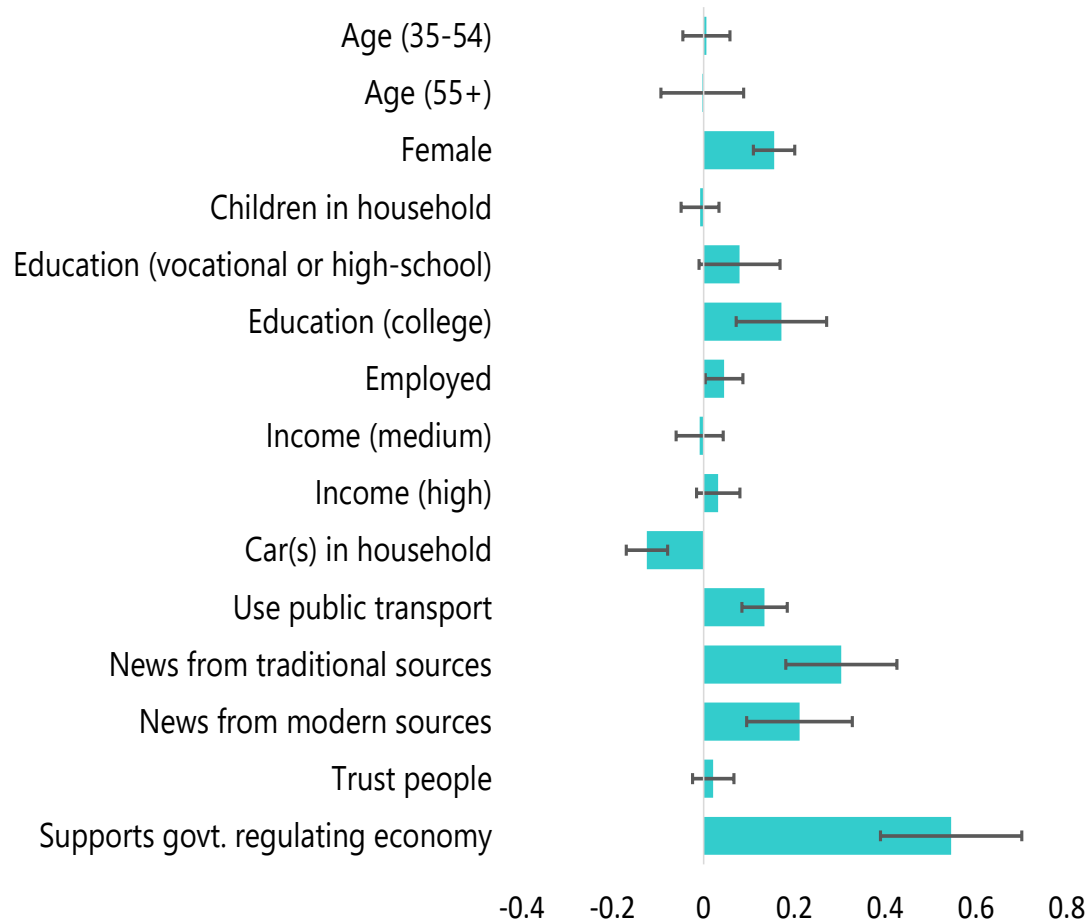
Cross-country heterogeneity

Climate risk perception higher for:

- **Females** in Japan, but not in India

- More **educated** respondents in Australia, but not in Korea

- People who **follow the news** in Europe and the Americas, but generally not in Asia
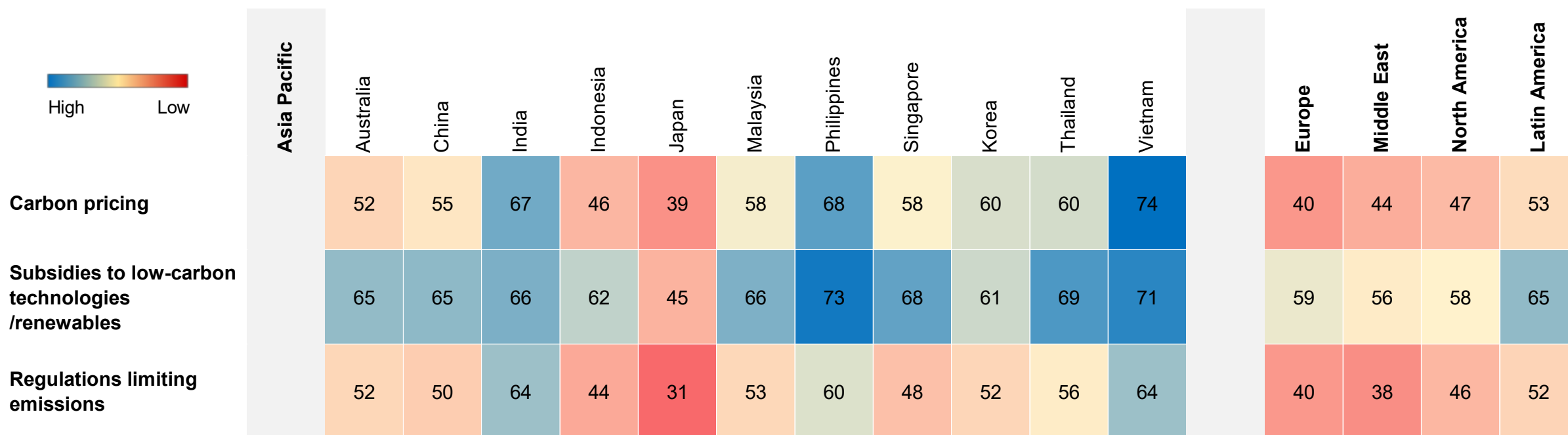
Note: OLS regression on z-scores of the dependent variable (seriousness of climate change) with country fixed effects in LHS figure and analogous country-level regressions in RHS figure.

Support for emission reducing policies
Subsidies for low-carbon technology/renewables are universally the most favored policy

(share of responses)

Knowledge of Policies

|	Asia Pacific	Australia	China	India	Indonesia	Japan	Malaysia	Philippines	Singapore	Korea	Thailand	Vietnam		Europe	Middle East	North America	Latin America
Carbon pricing		52	55	67	46	39	58	68	58	60	60	74		40	44	47	53
Subsidies to low-carbon technologies /renewables		65	65	66	62	45	66	73	68	61	69	71		59	56	58	65
Regulations limiting emissions		52	50	64	44	31	53	60	48	52	56	64		40	38	46	52

High — Low

Note: This figure shows the share of favorable responses (in percentage points) to the questions "*Thinking about all of the impacts of a carbon pricing policy, to what extent do you support or oppose such a policy in your country?*", "*Thinking about all of the impacts of a subsidy to renewable energy, to what extent do you support or oppose this policy in your country?*", and "*Thinking about all of the impacts of regulation, to what extent do you support or oppose this policy in your country?*". Responses shown are only for the control group that did not receive additional information.
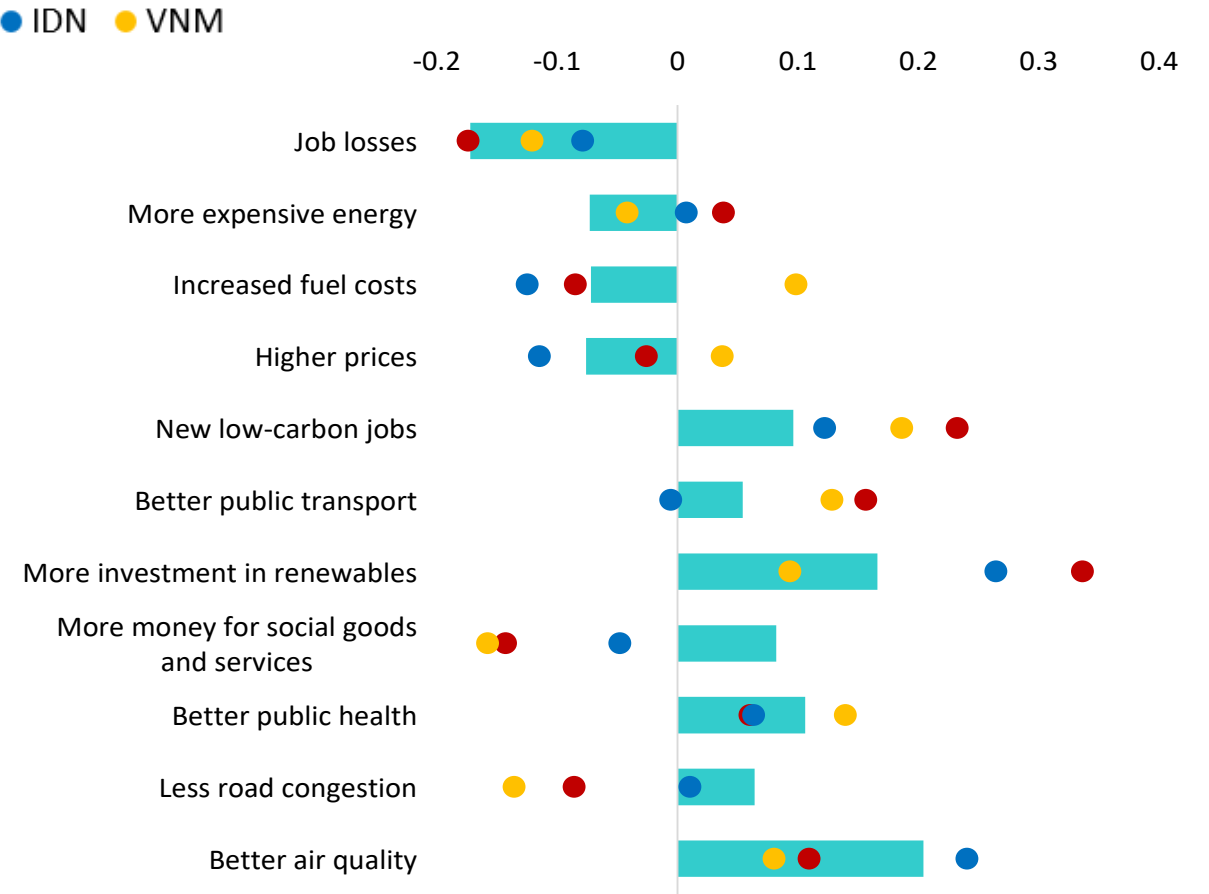
Drivers of support for carbon pricing
Climate risk perceptions, policy effectiveness, and distributional considerations matter

Risk perceptions, efficacy and inequality concerns
(coefficient estimates)
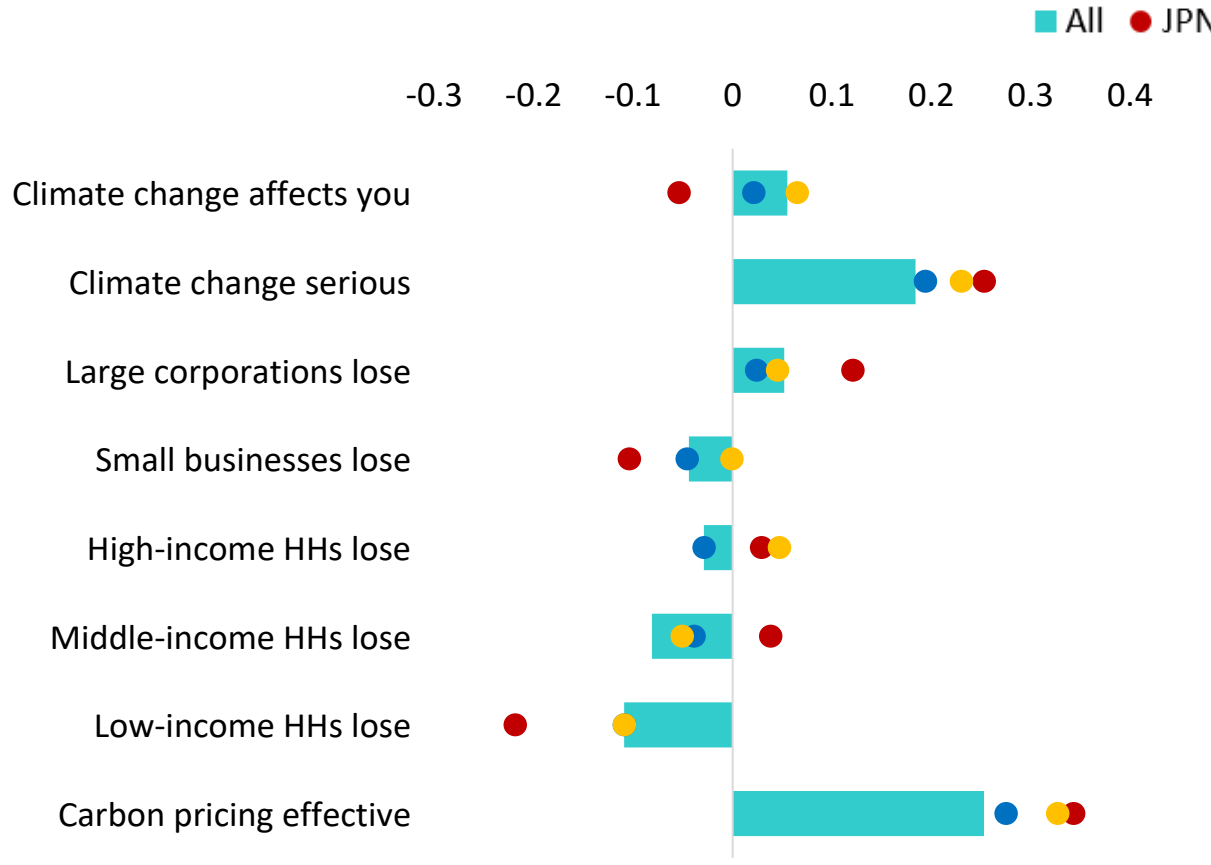
Costs and benefits
(coefficient estimates)

Legend: ■ All ● JPN ● IDN ● VNM

Note: Country-level OLS regressions on z-scores of the dependent variable (support for carbon pricing) will the full set of socio-economic controls. Bars represent estimates of differences in beliefs from cross-country regressions. End points represent the smallest and largest coefficients from the regressions.

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Policy attributes drive support for carbon pricing
Climate risk perceptions, policy effectiveness, and distributional considerations matter

Share of variation in support for carbon pricing explained by different covariates
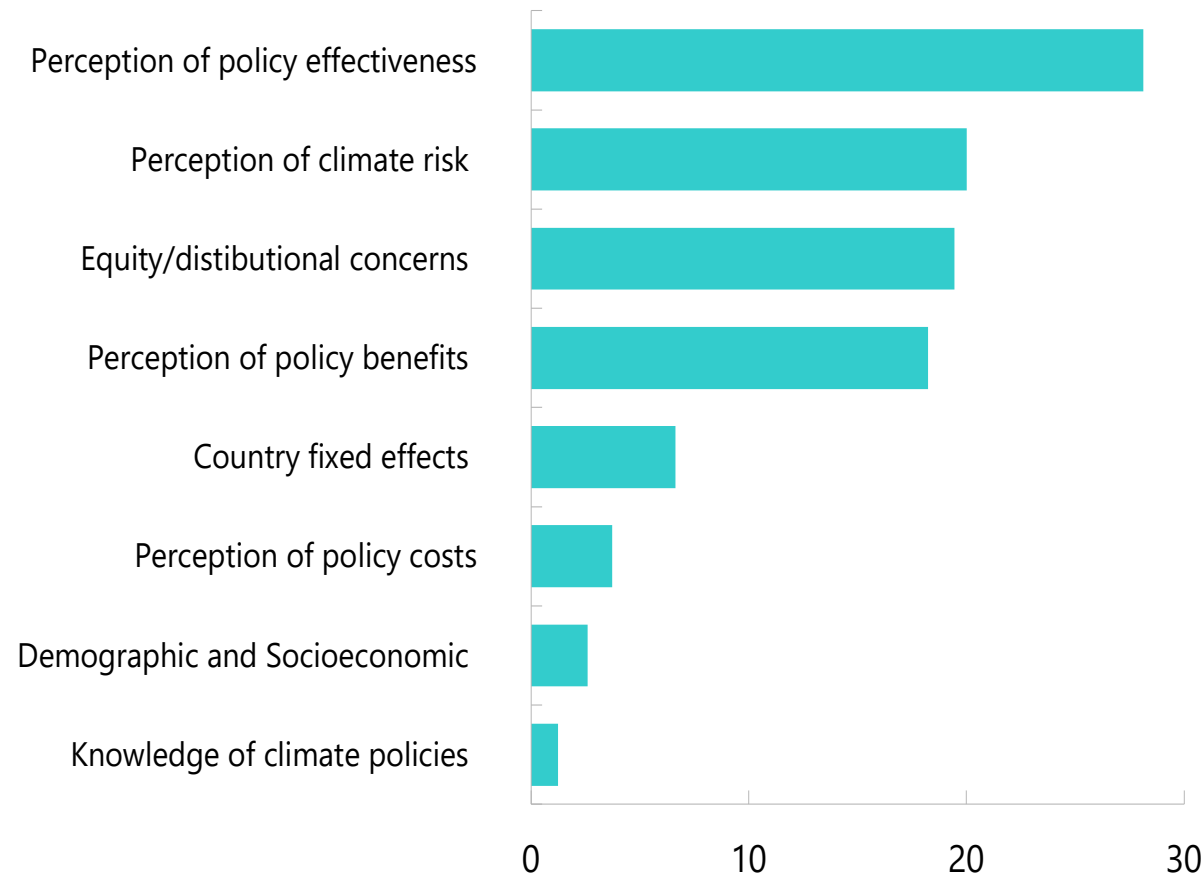
Note: The chart shows the share of the variation in support for carbon pricing that is explained by each group of variables in an OLS regression on z-scores of the dependent variable.

Revenue recycling increases support for carbon pricing
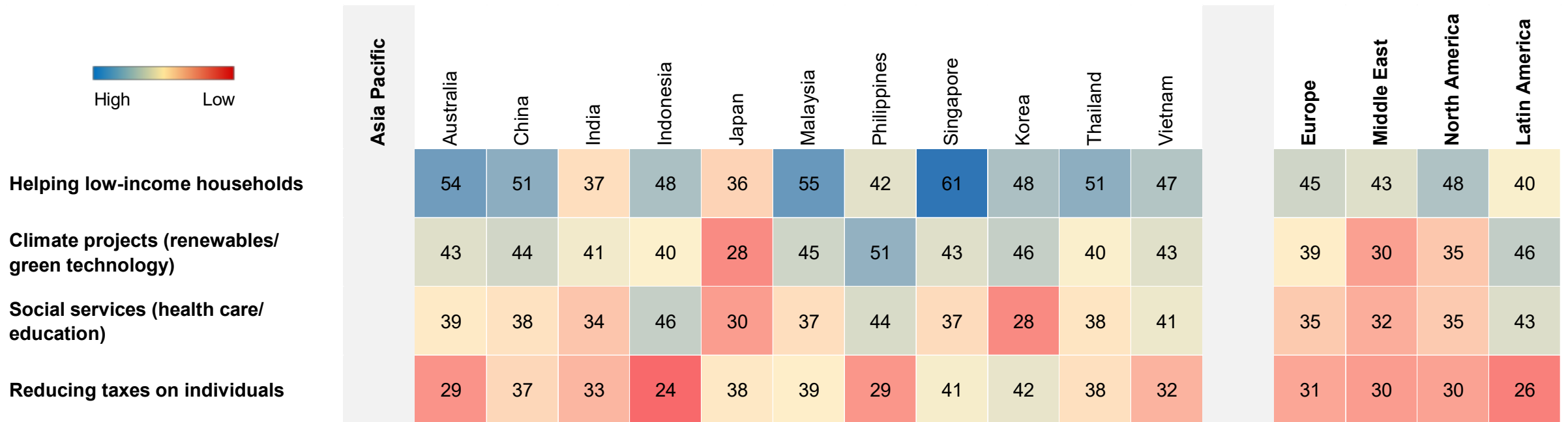## People care about policy progressivity and its distributional implications

Demographics

How should revenues from carbon pricing be recycled?
(multiple answers possible)

High — Low

	Asia Pacific	Australia	China	India	Indonesia	Japan	Malaysia	Philippines	Singapore	Korea	Thailand	Vietnam		Europe	Middle East	North America	Latin America
Helping low-income households		54	51	37	48	36	55	42	61	48	51	47		45	43	48	40
Climate projects (renewables/green technology)		43	44	41	40	28	45	51	43	46	40	43		39	30	35	46
Social services (health care/education)		39	38	34	46	30	37	44	37	28	38	41		35	32	35	43
Reducing taxes on individuals		29	37	33	24	38	39	29	41	42	38	32		31	30	30	26

Note: This figure shows the distribution of responses (in percentage points) to the question "*A carbon pricing policy that charges companies for their emissions would also raise the amount of money the government is able to collect and spend. Which, if any, of the following would increase your support for the policy? Please select up to three*". Excluding open ended response, don't know and none of the above. Blue denotes higher share of responses.

Information interventions

Providing information on policy efficacy and cost of living impacts alters preferences

Policy efficacy treatment

Carbon pricing provides correct incentives to decarbonize, can encourage innovation, and revenues can be recycled
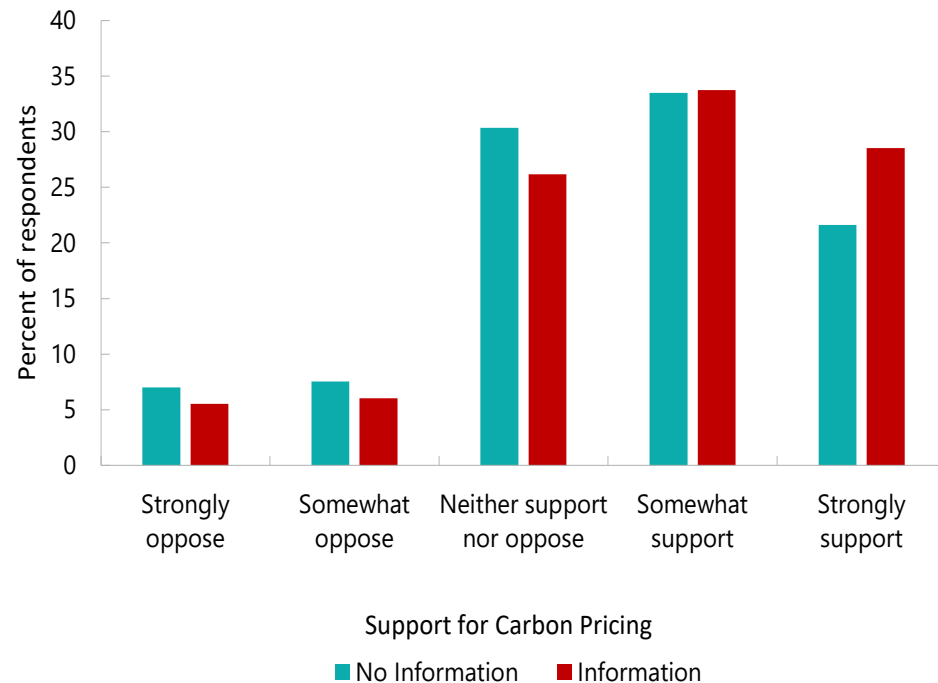
Cost of living increase treatment

Carbon pricing reduces greenhouse gases but also increases cost of living

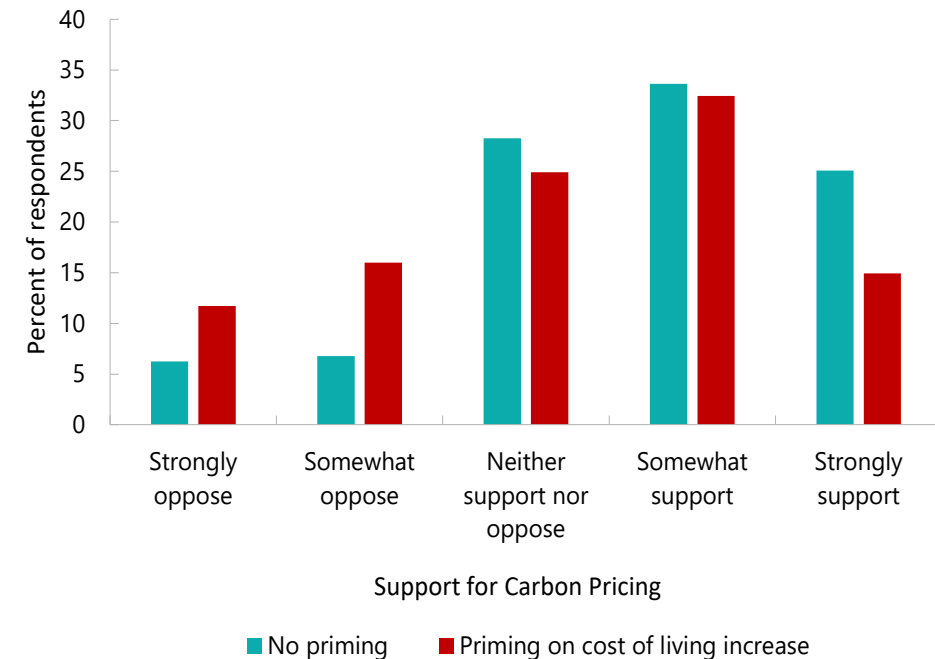Note: LHS figure shows the shift in the frequency distribution from a randomized treatment where a random sample is told that carbon pricing provides correct incentives to decarbonize, can encourage innovation, and revenues can be recycled. The effect of the information treatment is statistically significant. RHS figure show shift in the frequency distribution from providing additional information on the cost-of-living impacts of the policy.

Broad public support for collective action
People may be more willing to adopt costly policies if other countries do

Country responses

Climate change policy will only be effective if most countries adopt measures to reduce emissions

Agree ■ Neither agree nor disagree ■ Disagree

Who should pay?

■ Emerging Markets ■ Advanced Economies
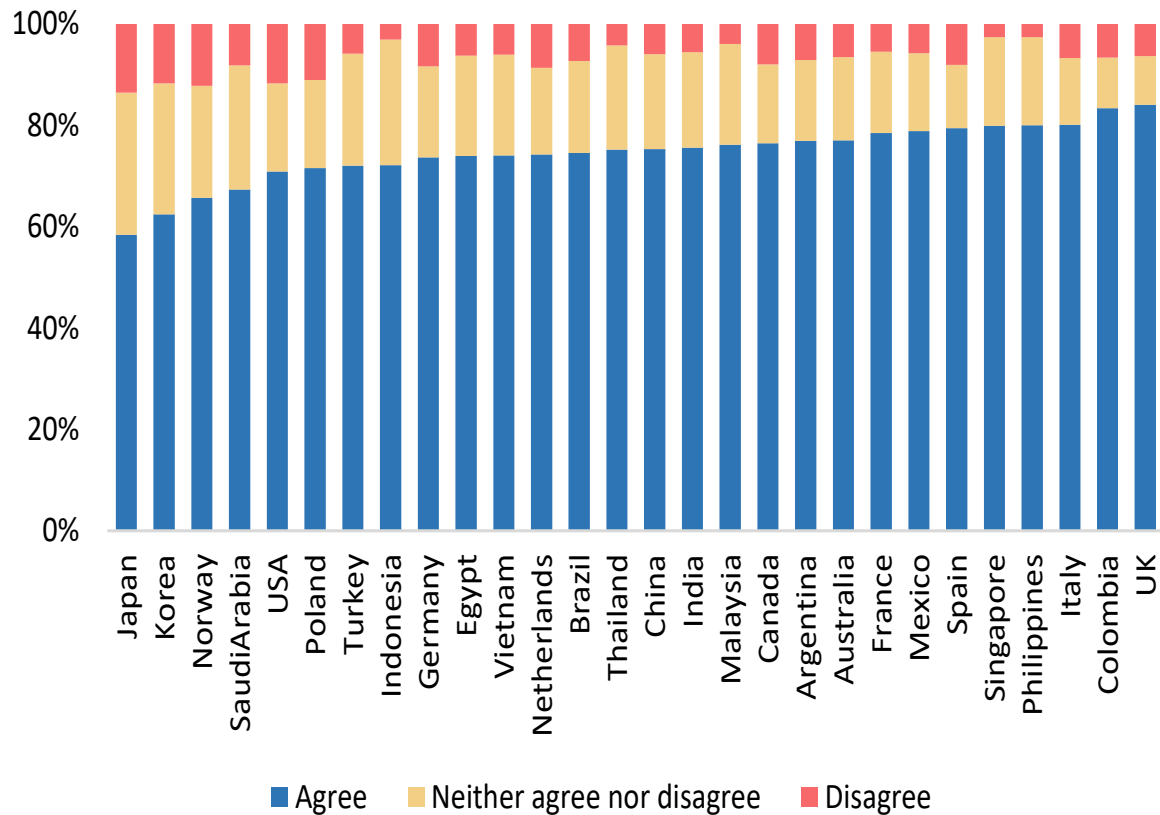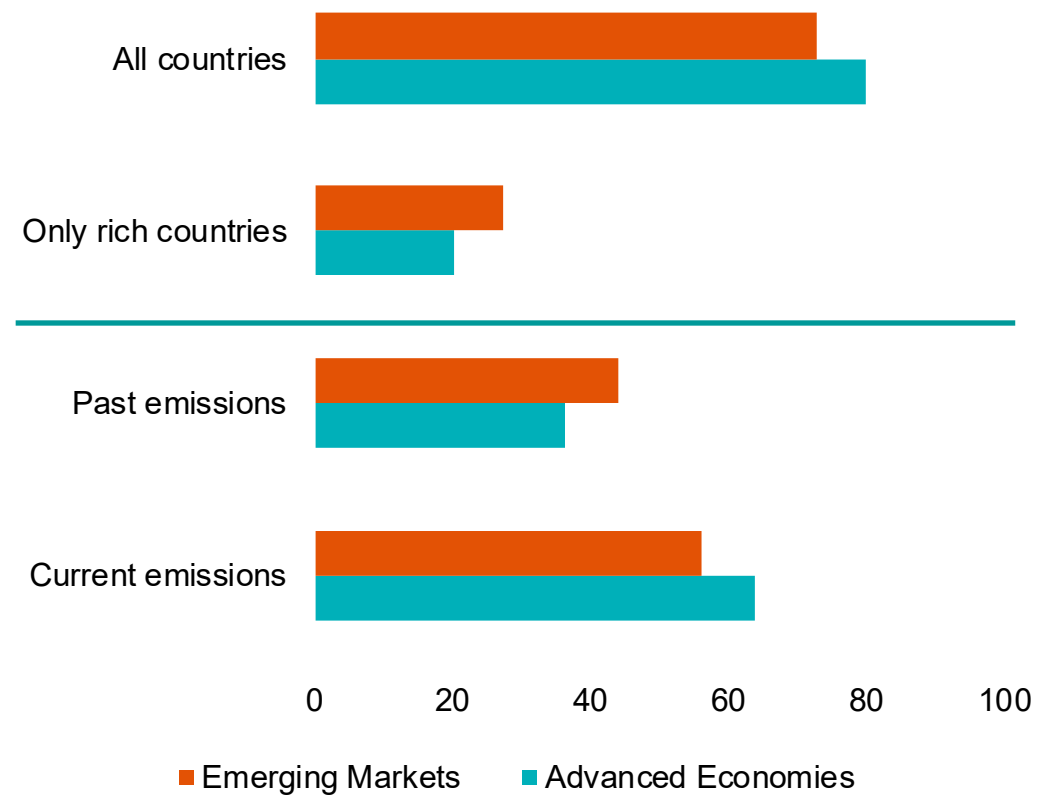
Note: RHS figure shows average responses to the question, "*Should countries be paying to reduce carbon emissions based on their current or accumulated historic levels of emissions?*" (top two rows) and "*Which countries do you think should be paying to reduce carbon emissions?*" (last two rows), excluding don't know responses. Differences between AEs and EMs are significant at the 1 percent level.

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Takeaways and policy implications

➢ **Devil *is* in the policy design**

- o Pre-existing beliefs regarding policy efficacy, costs, and progressivity key drivers of support for carbon pricing

- o Scope for improving support for policies with additional information on policy efficacy **and** co-benefits

➢ **Address distributional concerns to increase public acceptability**

- o Preferences for revenue recycling from carbon pricing lean towards household support and investment in green technology

- o Highlights need for complementary policies (e.g., strengthened social safety nets, green investment efficiency)

➢ **Raising awareness is key**

- o Ensure continued communication on climate risks, costs of inaction, and concrete policy impacts

➢ **Securing international cooperation could foster political support for climate action**

Thank You

Appendix

Survey structure
Representative surveys on more than 28,000 respondents (>1000 per country)

Background of Respondent: Socio-economic Characteristics, Political views and Habits
Gender, age, income, employment status, education, family situation, views on trust and role of government, source of news, ownership of cars and transport used…

⬇

Climate Risk Perceptions and Knowledge: Understanding of Urgency and Impact and Policy Awareness
How serious a problem is climate change, who is it impacting, what has your government done, have you heard about specific climate policies…

⬇

Open Ended Question
What should a good climate policy aim to achieve?

⬇

Views on Climate Policies: Carbon Tax, Emissions Trading, Subsidies and Regulations (priming/ self interest)
Effectiveness, who will gain or lose, distributional impact, perceived fairness, views on co-benefits, support and opposition for specific policies

⬇ ⬇

Control:
No new information

Treatment:
Specific information given regarding climate policy effectiveness

⬇ ⬇

International Dimension and Willingness to Change Behavior:
Who should pay and effectiveness of collective action; your behavior vs. community's behavior

- Standardized surveys run by YouGov (translated into local language as needed); online representative only in many emerging market countries.

Prior knowledge of climate mitigation policies varies
Public more informed about subsidies for green technologies/renewables and regulations

Back

Baseline awareness of different climate policies
(share of responses)

High   Low

	Asia Pacific	Australia	China	India	Indonesia	Japan	Malaysia	Philippines	Singapore	Korea	Thailand	Vietnam		Europe	Middle East	North America	Latin America
Carbon tax		65	34	28	19	34	36	21	63	58	23	29		37	14	58	18
Cap-and-trade or emissions trading systems		45	43	26	21	20	27	27	33	40	30	31		30	15	41	22
Law and regulations limiting carbon emissions		70	75	61	68	63	70	70	74	71	58	71		66	47	70	59
Subsidizing renewable energy sources		76	71	62	55	63	70	66	70	59	67	69		72	67	69	61

Note: This figure shows distribution of "Yes" responses to the question *"Which, if any, of the following ways of reducing climate change have you previously heard of? Please select all that apply"* for each policy. Blue denotes higher share; red denotes lower share.

Policy perceptions and beliefs about carbon pricing

Back

|	Asia Pacific	Australia	China	India	Indonesia	Japan	Malaysia	Philippines	Singapore	Korea	Thailand	Vietnam	Americas	Argentina	Brazil	Canada	Colombia	Mexico	USA	Middle East	Egypt	Saudi Arabia	Europe	France	Germany	Italy	Netherlands	Norway	Poland	Spain	Turkey	UK
Better air quality		50	63	54	55	29	66	55	65	57	56	55		39	57	47	53	44	44		42	49		47	34	47	50	38	55	48	51	46
Better public health		38	36	51	45	13	52	52	46	17	48	52		33	45	34	39	36	34		40	44		35	25	36	38	30	41	24	32	36
More investment in renewables		39	44	35	28	29	45	45	39	45	29	42		30	44	34	39	37	27		30	31		39	23	39	25	25	32	34	48	30
Higher prices		56	49	47	47	42	61	56	65	52	42	55		39	41	62	47	50	50		41	39		45	53	47	60	51	53	48	41	58
More expensive energy		57	57	43	30	42	54	46	57	45	37	42		39	38	56	32	34	48		39	48		47	57	42	53	45	57	48	44	56
Job losses		35	18	29	19	11	27	29	24	17	23	25		22	22	29	24	23	29		20	22		22	23	18	17	21	23	25	24	23
Low income HH lose		54	43	29	36	65	46	31	48	49	32	40		48	31	59	42	48	50		57	51		56	66	59	72	66	63	61	47	69
Middle income HH lose		48	42	33	35	64	45	31	51	47	34	38		48	31	56	44	49	52		55	50		62	66	57	69	65	66	60	48	61
Small businesses lose		57	57	38	41	66	51	36	58	61	43	43		55	40	62	54	54	57		50	46		59	64	68	69	70	69	67	52	71
New low-carbon jobs		28	46	28	21	21	26	24	22	32	24	32		23	22	20	30	25	21		20	23		23	11	18	7	12	17	24	36	16

Note: This figure shows average responses to a series of questions about the benefits, costs, and distributional implications of carbon pricing

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Reasons for not supporting carbon pricing policies

Policy costs, ineffectiveness, and harm to economy/job losses most important concerns
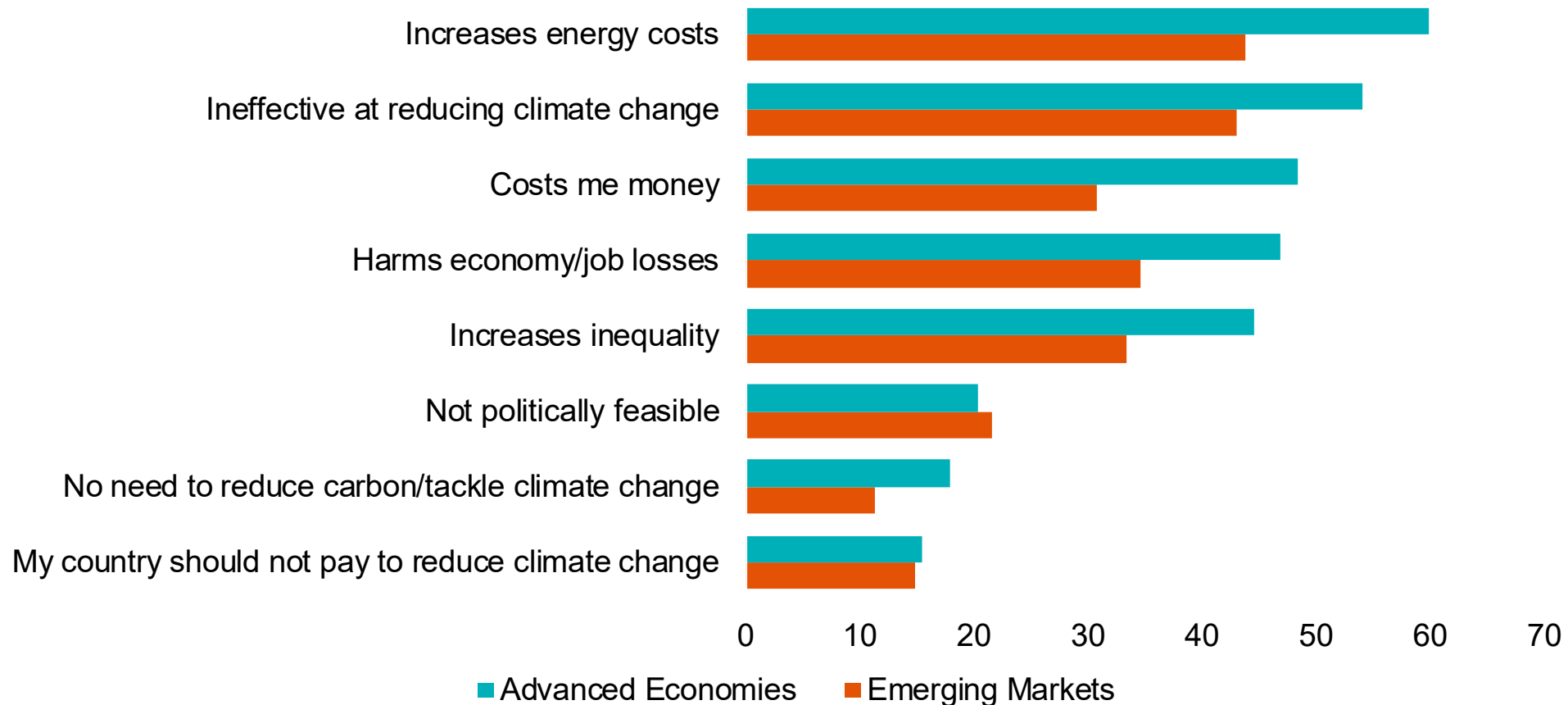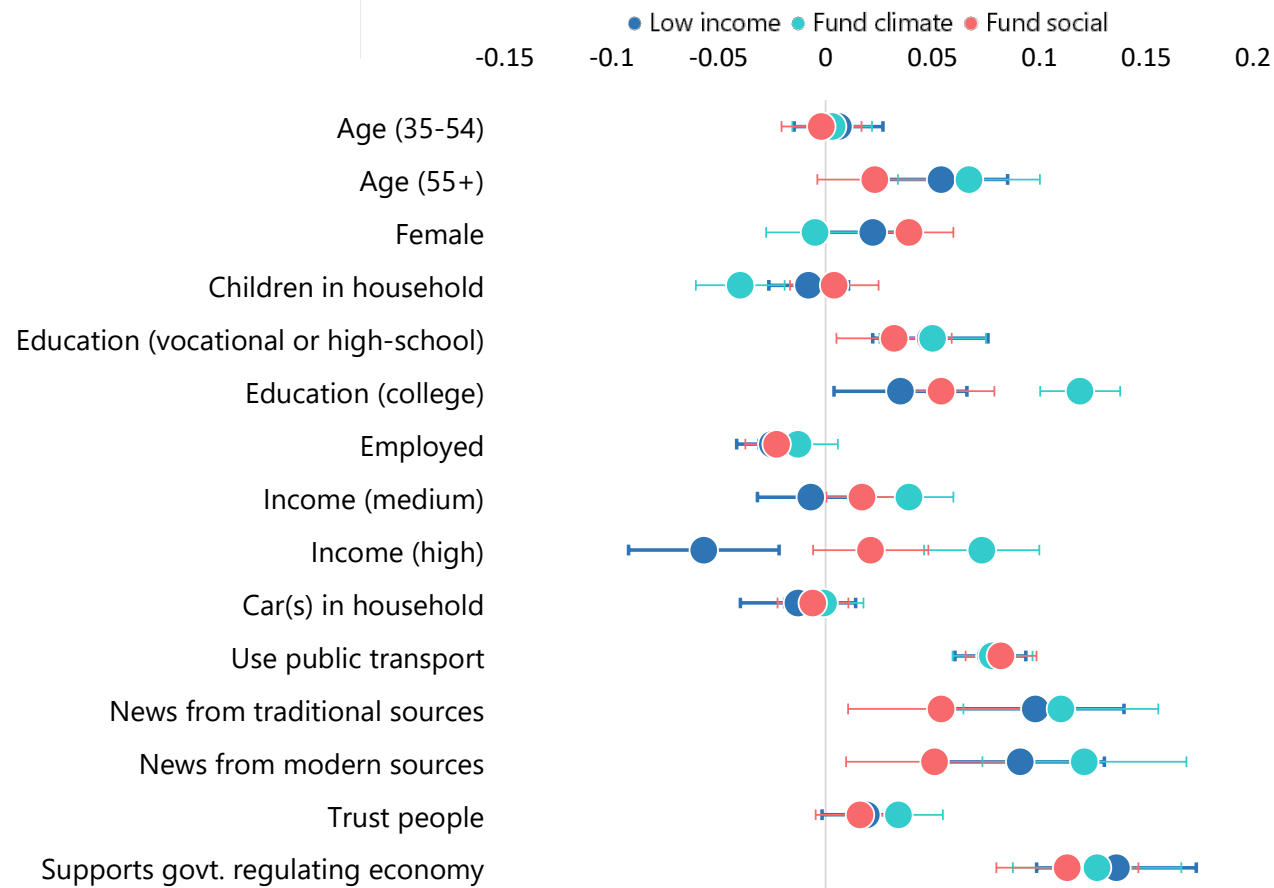
Note: This figure shows the distribution of responses (in percentage points) to the questions "*A carbon pricing policy that charges companies for their emissions would also raise the amount of money the government is able to collect and spend. Which, if any, of the following would increase your support for the policy? Please select up to three*". Differences between AEs and EMs are statistically significant at the 1 percent level for all reasons reported.

Revenue recycling and demographic characteristics

What should revenues be used for?

Group differences in how carbon pricing revenues should be used.

➤ High-income, older, and educated prefer earmarking revenues to clean technologies and renewables instead of compensating vulnerable households

➤ Belief that government should play a role in regulating the economy associated with using revenues to support low-income households

Note: Coefficients and 95% confidence intervals for linear probability models that include country fixed effects. Only three most popular choices are displayed for responses to the question to the questions *"A carbon pricing policy that charges companies for their emissions would also raise the amount of money the government is able to collect and spend. Which, if any, of the following would increase your support for the policy? Please select up to three".*

Higher impact of information treatment in countries with lower pre-existing knowledge of carbon tax

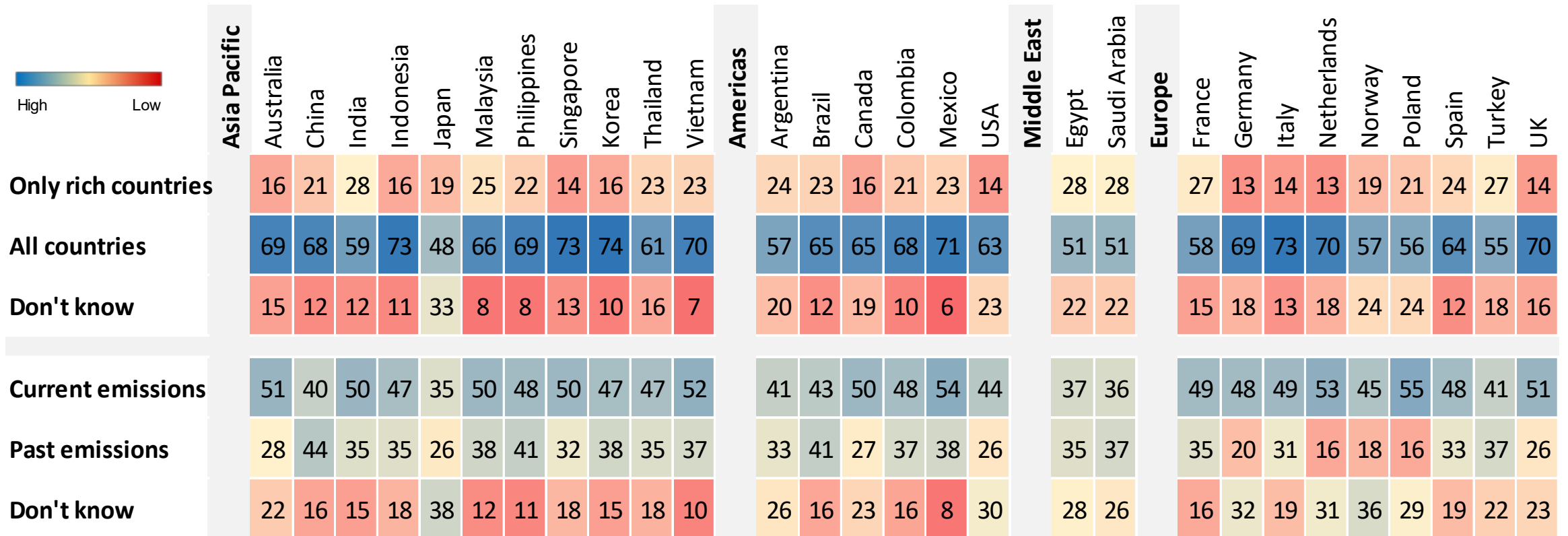Carbon pricing efficacy treatment and country-level heterogeneity
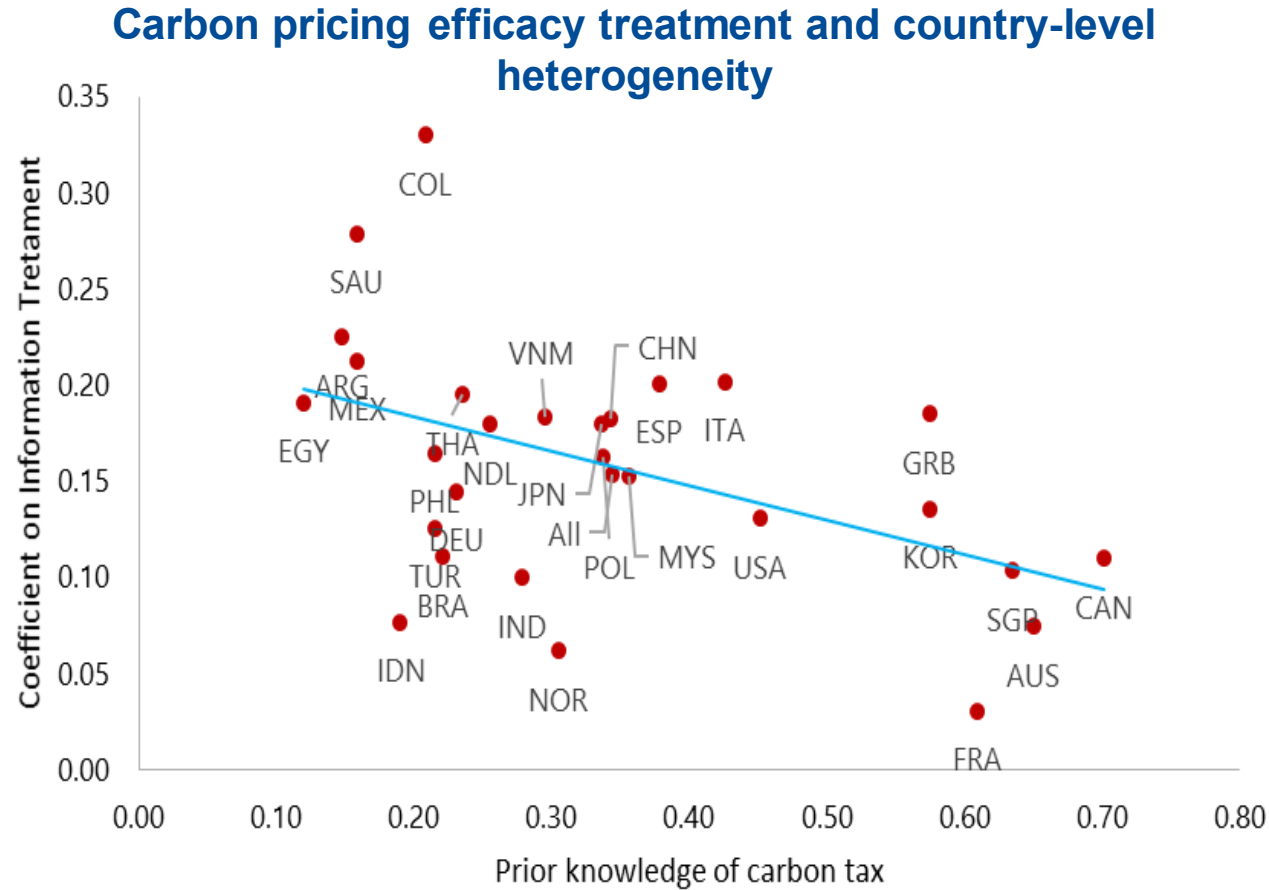
Note: The figure shows a country level plot of respondents' prior knowledge of carbon pricing (x-axis) and the size of the treatment effect from a regression analysis which includes information provision about how effective carbon pricing policies are in reducing greenhouse gas emissions.

International burden sharing: who should pay?

(share of responses)

	Asia Pacific	Australia	China	India	Indonesia	Japan	Malaysia	Philippines	Singapore	Korea	Thailand	Vietnam	Americas	Argentina	Brazil	Canada	Colombia	Mexico	USA	Middle East	Egypt	Saudi Arabia	Europe	France	Germany	Italy	Netherlands	Norway	Poland	Spain	Turkey	UK
Only rich countries		16	21	28	16	19	25	22	14	16	23	23		24	23	16	21	23	14		28	28		27	13	14	13	19	21	24	27	14
All countries		69	68	59	73	48	66	69	73	74	61	70		57	65	65	68	71	63		51	51		58	69	73	70	57	56	64	55	70
Don't know		15	12	12	11	33	8	8	13	10	16	7		20	12	19	10	6	23		22	22		15	18	13	18	24	24	12	18	16
Current emissions		51	40	50	47	35	50	48	50	47	47	52		41	43	50	48	54	44		37	36		49	48	49	53	45	55	48	41	51
Past emissions		28	44	35	35	26	38	41	32	38	35	37		33	41	27	37	38	26		35	37		35	20	31	16	18	16	33	37	26
Don't know		22	16	15	18	38	12	11	18	15	18	10		26	16	23	16	8	30		28	26		16	32	19	31	36	29	19	22	23

Note: This figure shows the share of responses (in percentage points) to the questions: *"Should countries be paying to reduce carbon emissions based on their current or accumulated historic levels of emissions?"* and *"Which countries do you think should be paying to reduce carbon emissions?"*.