

# Green Stimulus Index

## An assessment of the orientation of COVID-19 stimulus in relation to climate change, biodiversity and other environmental impacts

This note is a living document updated bi-weekly – please use the latest version. It is part of a series looking at *climate change and biodiversity considerations in economic responses to COVID-19*. Other notes are related to corporate bailouts, international assistance flows into developing countries and labour market reforms. *This work was undertaken by Vivid Economics, in partnership with the Finance for Biodiversity Initiative (F4B) and funded by the MAVA Foundation.*

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### Executive summary

**The coronavirus shows us that our social and economic fate is inextricably linked to that of the natural world. Governments have the opportunity and responsibility to ensure short-term emergency measures lead to a better more resilient future.**

**Nature has suffered a pandemic-like crisis for over a century.** Human activity has accelerated the rate at which plant and animal species are becoming extinct by a factor of over 100, and paved the way for a growing climate crisis. To date, the global economic response to the COVID-19 crisis is set to reinforce this trend. However, **there is an opportunity to act decisively now to prevent irreversible damage to nature and dramatically lower future costs of protecting the planet.** In solving one crisis, we cannot ignore another.

**Across 16 major economies, announced economic stimulus packages will pump approximately USD 2.2 trillion directly into sectors that have a large and lasting negative impact on nature.** These flows present an opportunity to support these sectors through the current COVID-19 crisis, while also increasing their sustainability and resilience in the face of the parallel climate and biodiversity crises.

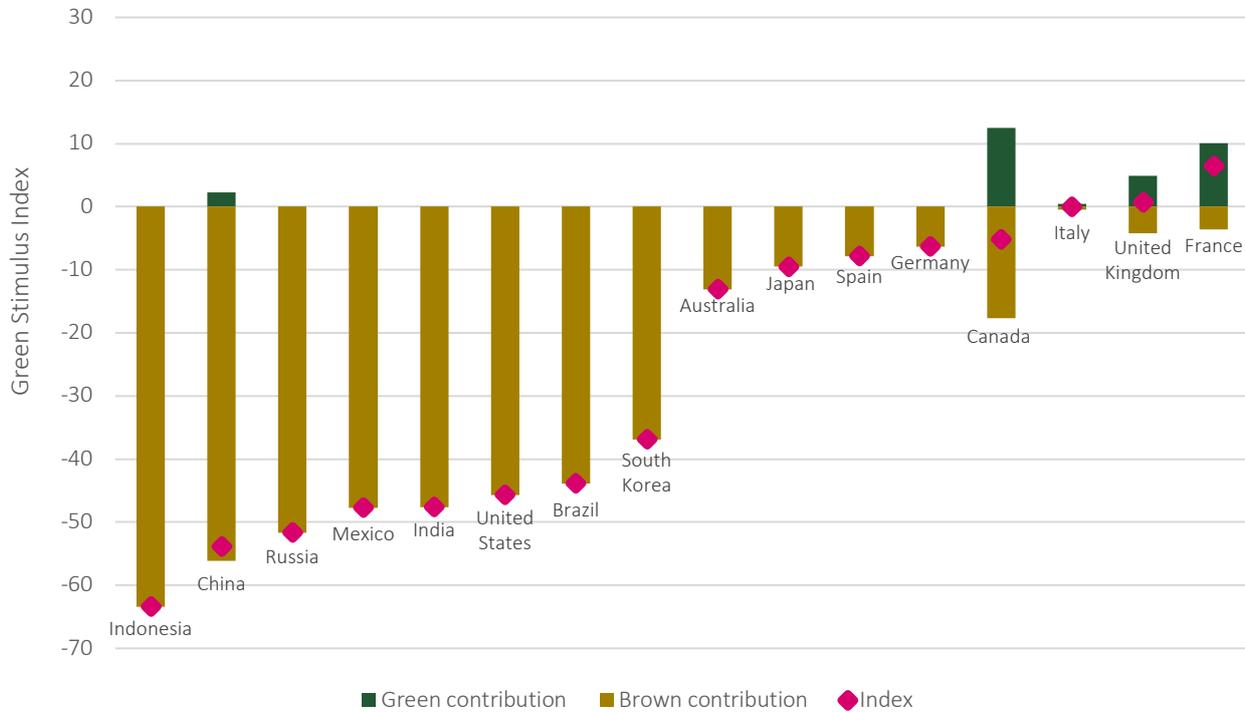
**So far, government responses have largely failed to harness this opportunity, disregarding the broader sustainability and resilience impacts of their actions.** The Green Stimulus Index, produced by Vivid Economics in partnership with Finance for Biodiversity (F4B), shines a light on how much money is flowing where and what this means for nature.

**In 13 of the 16 countries considered, potentially damaging flows outweigh those supporting nature.** Of the more developed countries, the US stands out as the largest scale risk, with USD 439 billion providing unrestricted support to sectors proven to be environmentally harmful in the past amidst several rollbacks on environmental regulation. Russia and China are also particularly bad, with the latter providing new subsidies for automotives and easing of permits for coal mining. South Korea, Australia, Japan and Germany join them on the negative side owing largely to the existing negative impacts of their environmentally-intensive sectors, and their lack of decisive action to ensure stimulus supports a more sustainable transition.

**Developing economies dependent on environmentally-intensive sectors and without strong regulatory systems have perhaps the hardest task ahead.** Indonesia, Mexico and Brazil are pushing response efforts likely to reinforce brown trajectories dominated by highly carbon intensive industry and energy sectors and unsustainable agriculture practices. Part of their economic stimulus packages include deregulation of the logging industry, unconditional subsidies to fossil fuel consumers, among others. To manage through the crisis, while protecting and rebuilding nature, international support must be combined with environmental provisions hardwired into their stimulus measures.

Packages in parts of Western Europe and Canada offer more promise with at least a portion of spending likely to be nature-friendly. France and the UK benefit from less environmentally-intensive economies and their decisions to retain more stringent regulations and policies. Together with Canada, they have steered a significant amount of their stimulus measures to drive nature-friendly outcomes.

Green Stimulus Index



Source: Vivid Economics using a variety of sources  
 Note: Updated on May 12, 2020

Among the current stimulus measures, the most critical for green conditionality are corporate bailouts, and international rescue packages. These are examined in greater detail in separate policy notes.

- Corporate bailouts:** Governments should view bailouts as public investments that deliver public benefits. While these bailouts must clearly deliver immediate benefits in terms of stability of public services, employment and supply chains, they should also secure a transition to sustainable and resilient growth in the medium term. Bailouts can achieve this by reinforcing environmental regulations, by conditioning public support on implementing specific environmental improvements to operations and procurement, and by committing to high-integrity environmental offsets, enhanced nature-related financial disclosures, and increased supply chain transparency. The recent agreements with Austrian Airlines and Air France demonstrate how governments and corporations can meet on common ground.
- International financial institutions:** Unprecedented fiscal crises in developing countries are driving large international rescue packages with the potential to support more sustainable and resilient growth. As these governments grapple with high debt, commodity prices volatility and capital flight, economic instability will spillover into nature. International financial flows – including loans, debt relief and liquidity support – can be channelled to vulnerable sectors to both rescue faltering economies and ensure long term balance of payments by supporting their fragile transition to sustainable and resilient growth. In fact, a focus on ensuring adequate environmental conditions in only a few sectors – especially agriculture and tourism – can achieve enormous positive results for people and nature.

## New to this release

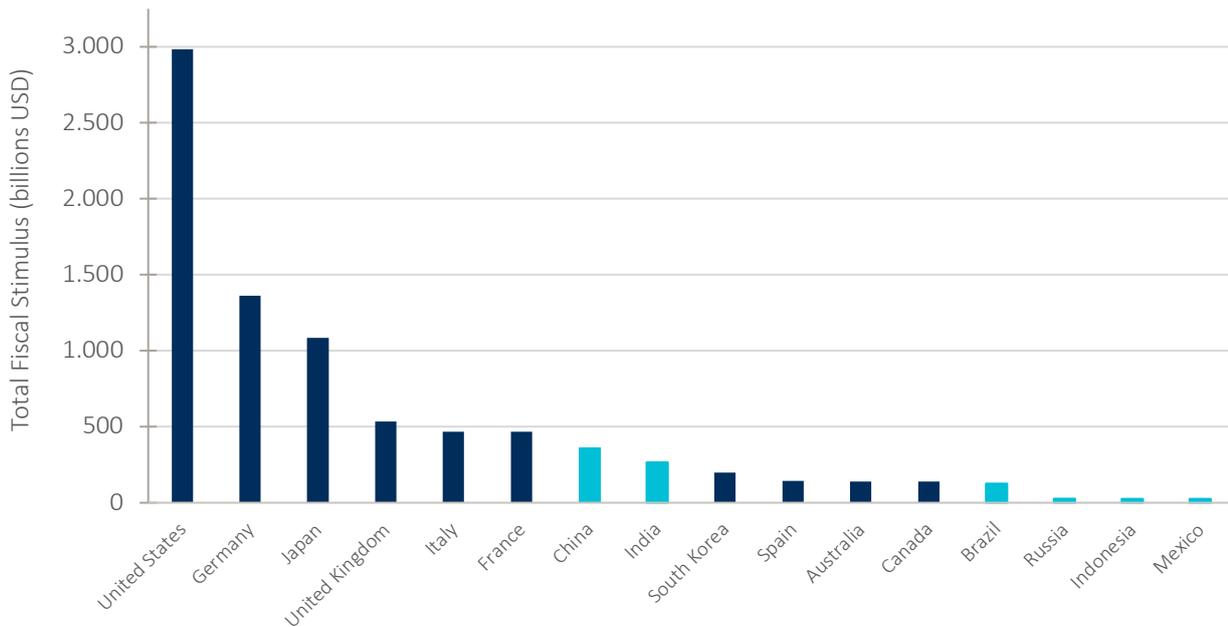
**This update of the index incorporates new information that has become available since the previous release.** The latest announcements on stimulus flows, deregulation and environmental policies have been incorporated into the analysis, with the following highlights:

- Brazil, Indonesia, Mexico, Russia and India have been added to the index.
- Many countries increased the size of their total stimulus through the introduction of new packages and expansion of existing measures. Most notably, these include the United States (\$2.2 trillion to \$2.9 trillion USD), United Kingdom (\$490 billion to \$530 billion), France (\$380 billion to \$469 billion) and South Korea (95 billion to \$197 billion).
- The quantity of stimulus that we identify as environmentally relevant increased considerably from \$840 billion to \$2.2 trillion. This is partly due to new announcements of support for businesses but also a slight broadening of our categorisation of environmentally relevant sectors.
- Among others, new environment specific announcements include the attachment of ‘green’ strings to the Air France bailout, a bailout of a coal power plant builder in South Korea, the attachment of green conditionality on support for Canada’s largest employers, and measures by the government in China to restrict the wildlife trade. Please refer to the Country notes in Annex II for more information.

## Announced Stimulus Packages

Over the past two months the world has witnessed unprecedented government financial interventions in response to Covid-19. Economic stimulus packages announced to date include a range of fiscal mechanisms including bailouts and loans. Current stimulus packages vary from \$26 billion to \$2.9 trillion with Mexico as the smallest and the United States as the largest.

Figure 1 Announced COVID response fiscal stimulus package by country



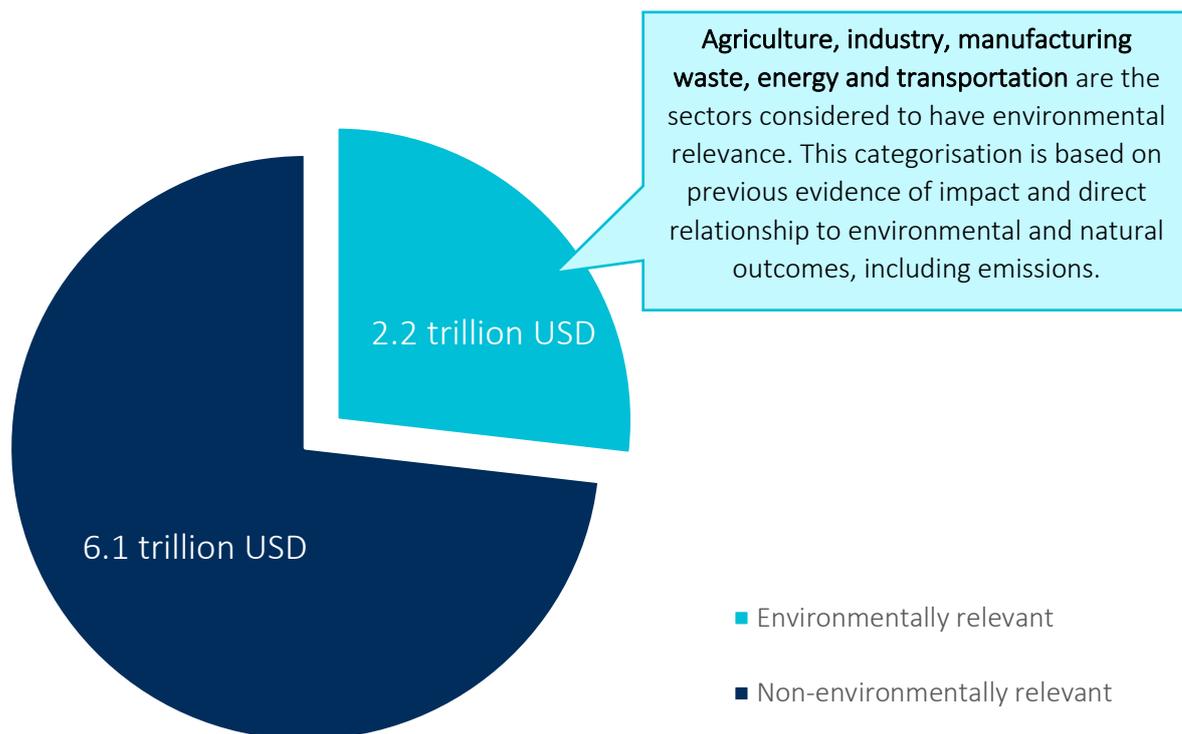
Source: Vivid Economics using IMF COVID response tracker data and Oxford Coronavirus Government response tracker. Note: Dark blue represents developed and light blue represents developing countries. Updated on May 12, 2020.

**Governments have rightly put people first and focused on the immediate implications of the crisis – with money channelled directly to households and those on the frontline.** Governments have focused on securing employment, providing unemployment and cash benefits to workers and households, and providing liquidity to businesses across the economy.

**At the same time, roughly USD 2.2 trillion in announced stimulus, 27% of the total, will flow into sectors with a high environmental impact – whether on climate change, biodiversity or local pollution.<sup>1</sup>** This proportion will likely increase as stimulus efforts deepen for long-term recovery. This critical funding should allow countries to respond to the COVID crisis without risking public health, job security, fiscal stability and environmental sustainability. Economic stimulus provided to sectors with an environmental impact may be directed towards clean energy and low carbon development.

<sup>1</sup> In defining the amount of stimulus flowing through to sectors with a high environmental impact, the index has removed any measures which are purely devised to provide income support to workers (e.g. furlough or paycheck protection programmes). In some cases, insufficient information was available.

Figure 2 Sum of global fiscal stimulus policies of countries considered in our analysis



Source: Vivid Economics using a variety of sources

Note: Updated on May 12, 2020

## The Green Stimulus Index

The Green Stimulus Index examines 16 economies<sup>2</sup> to assess the green or brown orientation of their stimulus funding based on:

- the scale of funds flowing into environmentally intensive sectors
- the existing green orientation of those sectors, and
- the efforts which steer stimulus toward (or away from) pro-environmental recovery.

To date, much of this stimulus funding is set to flow into existing sectors with no attempt to look forward and support the medium and long-term sustainability and resilience of these sectors. There remains significant scope for governments to more pro-actively ensure this funding strengthens sustainability and resilience.

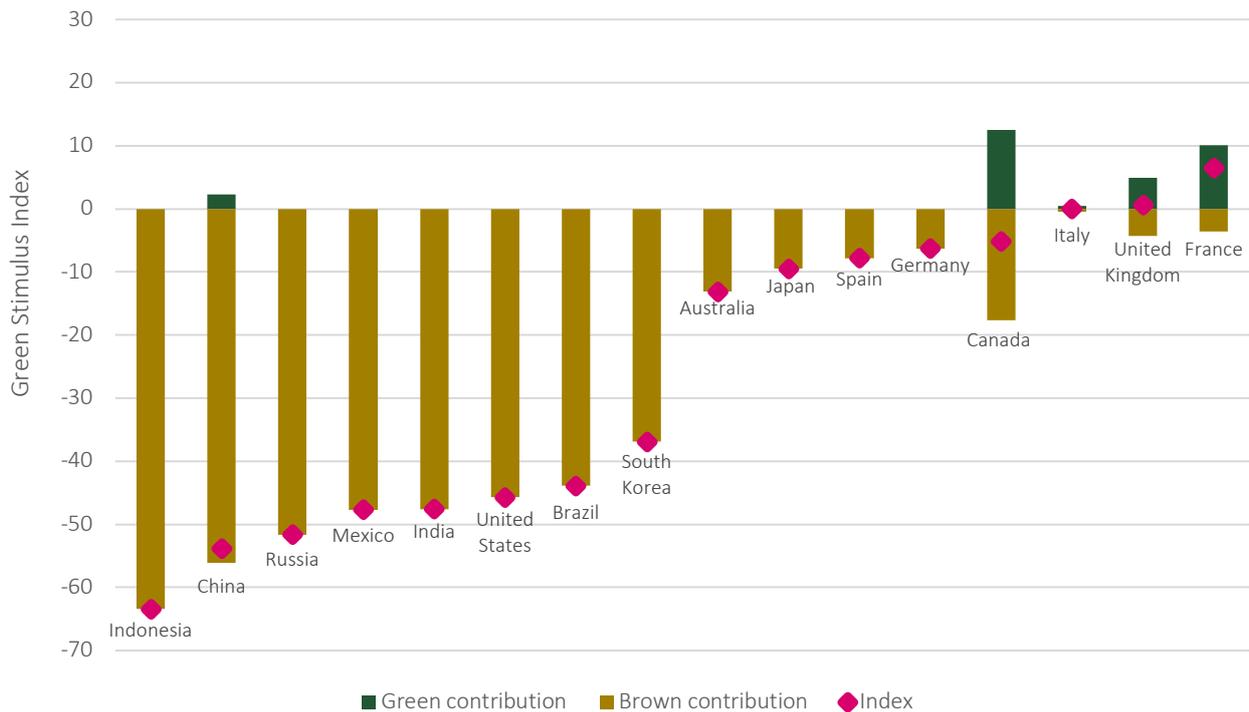
In countries with inadequate existing climate and biodiversity policies, these flows are likely to reinforce unsustainable trajectories of high emissions and loss of nature. All countries have entered this crisis with large sectors of their economies still contributing significantly to greenhouse gas emissions, air and water pollution, and loss of biodiversity. Many countries also lack concrete policies to facilitate a transition in those sectors to a more low carbon and resilient trajectory. As a result, current stimulus into those sectors risks reinforcing a status quo that is significantly tilted toward brown, amplifying risks to citizens' welfare and the natural world in the near and long term.

Where targeted efforts have occurred to specifically steer funding, they have more often removed incentives toward sustainability, although a few have added green incentives. The most significant examples of COVID response measure that steer environmentally intensive sectors include significant deregulation, subsidies or tax cuts to activities likely to worsen environmental outcomes, including large bailouts to the aviation sector. Only a few efforts have been made to support some improvements in the environmental sustainability of the industry, energy and transport sectors.

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<sup>2</sup> Our analysis includes ten developed countries and six developing countries. South Africa was excluded because it has not published enough information to construct the index. In South Africa, the stimulus package is still relatively small and none explicitly directed at specific sectors.

Figure 3 Green Stimulus Index, scaled (-100, 100)



Source: Vivid Economics using a variety of sources  
 Note: Updated on May 12, 2020

**The analysis finds that the lowest performing countries are the United States, China, Russia, Mexico, Brazil, Indonesia and India.**

**The negative score in the US is particularly worrying, as it is also the country directing by far the most stimulus money (in absolute terms) towards environmentally-related sectors.** The results in the US are driven by a combination of poor underlying (pre-COVID) policies as well as specific measures which further undermine a shift to sustainability. The US has a current policy mix that means stimulus funds will be generally more tilted toward reinforcing a brown trajectory, and this has been made even worse by specific stimulus measures including environmental deregulation in energy, industry, manufacturing, transportation and agriculture, and the bailout of the aviation industry without green conditionality.

**China too is particularly worrying, given the size of its economy and the negative signal it might send across developing Asia and the wider Belt and Road countries.** China has a relatively brown sector base and poor underlying policy environment, which means its stimulus efforts will largely reinforce a brown trajectory unless concerted effort is made to avoid this. As a response to COVID, the government relaxed environmental reporting in key industries like transportation and industry, streamlined permits for coal mining and extended subsidies for fossil fuel vehicles. It is worth mentioning that the government is also expanding an EV subsidy scheme, which the index scores positively even though power mostly comes from coal. More prominently, the government decided to ban wildlife trading for specific animal species, which gives it a significant positive boost to the index score.

**Indonesia (with the lowest score in our sample) and Brazil have demonstrated historically less aggressive environmental policies and large land use and forest eco-system impacts.** These countries are heavy agriculture producers, and without strict environmental policies and enforcement, these sectors remain on a trajectory of high emissions intensity and large biodiversity destruction. Brazil has often encountered major

issues in enforcing forest and land use policies. This situation has aggravated during the COVID response through a Presidential decree relaxing land use permits. Similarly, Indonesia has loosened permitting restrictions on timber producers to stimulate economic activity and recently passed a law that deregulated the mining industry. These policies risk undermining previous commitments to reduce greenhouse gas emissions, preserve nature and strengthen natural capital, while providing very limited (if any) benefits in terms of immediate emergency economic stimulus.

**Russia and Mexico are heavy fossil fuel energy producers, and their response to COVID has reinforced their brown orientation.** Russia relies heavily on the oil and gas sector for exports and overall economic output, and its response to COVID has supported that sector further. Since the economic slowdown, the government has propped up oil prices domestically and continued to subsidise the energy and industrial sector without green conditionality or targeted investments in low carbon developments or programs. Because Russia's economic activity is dominated by historically 'brown' sectors and it has not made an attempt to tighten fiscal flows to these sectors, the country's performance is low in our index. Mexico has announced considerable funding for its energy sector, with unconditional support directed towards the refining industry. However, Mexico performs better than most other developing countries due to its lower emission intensity scores and relative success in reducing GHG emissions towards Paris agreement goals.

**India's recently announced USD 266 billion appears most likely to support the current brown trajectory of its manufacturing and energy industries.** It is worth highlighting that few details about the package have been revealed to date, and our initial findings could change as more information is made available.

**With a more pro-climate baseline across sectors, Japan, Australia, Canada, and South Korea also lean brown but to a lesser magnitude than developing countries with less institutional commitment.** They benefit from having somewhat better underlying (pre-COVID) policies and environmental performance, but are channelling funds into a mix of sectors, with significant risks of reinforcing existing brown trajectories. They have also not put in place decisive measures to assure a greener orientation. Japan and Australia have yet to take measure that ensure stimulus will not undermine the sustainability and resilience of their economies. Canada on the other hand has deployed a mix of targeted policies, both positive and negative. Strong green commitments by South Korea's newly re-elected government hold some promise for greater policy action over the coming weeks but are not part of the index yet.

**The EU countries analysed – Italy, Spain, France, Germany and the UK are more neutral in their overall orientation, but show specific nuances worth noting.**

- Spain is the most negative of the EU countries examined given many environmentally-intensive sectors receiving stimulus risk reinforcing brown behaviour. Despite reported announcements of ambitious green plans, there is no evidence of environmental conditionality having been implemented to stimulus packages to date.
- Germany – despite announcements that it wants to ensure a green recovery – has a negative index score owing to the environmental intensiveness of its economy, good (but not exceptional) underlying policies, and lack of a clear action to date ensuring its stimulus supports an accelerated trajectory toward greater sustainability and resilience.
- Italy is broadly neutral. It has relatively good underlying policies (similar to other EU countries), but also some environmentally intensive sectors that risk being reinforced. Italy has yet to enact any targeted measures to ensure its stimulus supports sustainability and resilience.
- France and the UK generally benefit from less environmentally intensive sectors and above average policy measures, strictly enforced. However, the UK's bailout of the aviation sector without green conditionality has driven its index score well below France, who was successful in implementing

green conditionality in the bailout of Air France-KLM. Yet even with the highest score, France still is only slightly above neutral, and improved performance on sustainability and resilience is still possible.

**It is worth noting that to date, the absolute flow of funds that are likely to tilt toward brown remains relatively small, and there is a great deal of uncertainty about how such funds will be used.** Recently published literature from the Oxford Review of Economic Policy estimates about 8% of total fiscal spending in the medium run will be attributable to either brown or green sectors.<sup>3</sup> As further clarity is provided about the uses of these stimulus funds, and as specific measures come into place (whether green or brown), we expect the spread of index values to increase.

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<sup>3</sup> Hepburn, C. O'Callaghan, B., Stern, N., Stiglitz, J., Zenghelis, D. (Forthcoming 2020). Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change? *Oxford Smith School of Enterprise and the Environment*, Working Paper No. 20-02 ISSN 2732-4214

# Annex I - Methodology

## Methodology

**The index is constructed by combining the flow of stimulus into key sectors with an indicator of each sector's environmental impact.** The impact indicator assigns a greenness value (positive or negative) to each sector for every country based on methodology discussed below. The overall Greenness Index is an indicator of the total fiscal spending in response to COVID categorised as either a positive (green) or negative (brown) impact on the environment. The final index for each country is an average of sectoral impact, normalised to a scale of -1 to 1. The sectors included as relevant due to their historical impact on climate and environment include agriculture, energy, industry, waste and transport. Within industry we include manufacturing, while energy includes utilities and mining. Aviation is included within transport.

**An estimated 26% of overall global stimulus funding will have a relevant impact on the environment.<sup>4</sup>**

Despite some targeted stimulus measures to support environmental improvements, overall flows into the sectors of interest remain brown given historic performance of these sectors. To date, a relatively small magnitude of stimulus measures contain clear pro-environmental conditions. A majority of fiscal stimulus measures currently passed and likely to flow to environmentally intensive sectors do not have an explicit focus on climate change and environmental goals.

**Two components of the stimulus were analysed including the size of the fiscal flow (F value) to each environmentally intensive sector and the overall impact of that stimulus on climate and environment (B value).**

**B is a scaled indicator from -1 to 1 which rates countries by level of overall greenness from most pro-environmental at 1 to least environmental at -1.** The B value differentiates between underlying sector context ( $b_1$ ) and measure-specific conditionality ( $b_2$ ).  $b_1$  refers to our baseline evaluation of each country and sector pair we have analysed. This captures the baseline for each sector's environmental performance in the country. This includes an evaluation of current and historical emissions and emissions intensity for the sector within the specific country, its rating on multiple environmental performance indicators, and the overall country's climate target progression.  $b_2$  is a consideration of any COVID response-specific data we have found that either supports or undermines the baseline value. It takes a negative value if stimulus support boosts brown activities without regard to environmental targets or deregulates to roll back environmental conditions. It takes a positive value if stimulus support advances pro-environmental programmes or includes conditions on environmental performance.

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<sup>4</sup>This figure comes from totalling all fiscal spending by countries in our analysis and categorising the flows by sector. This value is the percentage of estimated and actual flows going into the above environmentally-relevant sectors across all countries in our analysis. Our estimate is above recently published work, including Hepburn et. al (Forthcoming) estimate of 8% of total funding having an either 'green' or 'brown' impact. [Hepburn, C. O'Callaghan, B., Stern, N., Stiglitz, J., Zenghelis, D. (Forthcoming 2020). Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change? *Oxford Smith School of Enterprise and the Environment*, Working Paper No. 20-02 ISSN 2732-4214]. We believe our figure is larger given our analysis is only of recovery stimulus and not long term fiscal measures that may be introduced in the medium and long term.

## Annex II - Country notes

These notes describe the underlying numbers that are driving the index score for each country. The notes and the index will be updated a more information on the recovery packages becomes available:

### 1.1 United States

The US has passed a \$2.9 trillion spending package.

**Environmentally relevant stimulus<sup>5</sup>:** \$60 billion is going directly to airlines and cargo carriers in the aviation sector. Another \$25 billion has been allocated to the transportation sector, including transportation infrastructure, shipping, and trucking. \$23.5 billion has also been allocated to support the agriculture sector. Alongside the announced direct measures, sectoral breakdown of stimulus is possible using the data on the businesses that are receiving loans, of which a substantial proportion have been allocated to industrial producers.<sup>6</sup> Because the US has detailed information on stimulus breakdown, our estimation of the greenness index is based heavily on measure-specific information.

**Sectors evaluated in the US prove to be overwhelmingly brown due to underlying conditions and environmental deregulation.**

- **Underlying sector context ( $b_1$ ).** In the US, the baseline trajectory on policy drives many sectors into deep ‘brown’ spending. Key sources consulted to generate the baseline are:
  - ◇ Climate Action tracker score<sup>7</sup>: Critically insufficient.
  - ◇ Yale’s Environmental Performance Indicator (EPI)<sup>8</sup>: Medium.
  - ◇ OECD Environmental Stringency Index (ESI)<sup>9</sup>: Medium.<sup>10</sup>
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>11</sup>: Medium.<sup>12</sup>
  - ◇ EIU Agriculture Sustainability Index<sup>13</sup>: Low.
- **Measure-specific conditionality ( $b_2$ ):** In the United States, deregulation across all sectors coupled with a lack of environmental conditions on transportation funding have added negative weights to our baseline. Key policies include:
  - ◇ The US government has warrants on up to 1.9% of shares for any airline receiving grants or loans.<sup>14</sup> But given the current US administration, we do not anticipate these equity stakes, if taken, to be used to drive voluntary compliance.
  - ◇ In the US, announcements of environmental rules have been rolled back indefinitely, where major polluters are not required to monitor or report emissions or pollutant discharge.<sup>15</sup> In the case of a

<sup>5</sup> Sources: Small Business Association (2020), Bureau of Economic Analysis (2019), National Conference of State Legislators (2020)

<sup>6</sup> AP News (2020) <https://apnews.com/53954f808f0652463d58728ad64cd5b3>

<sup>7</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/>

<sup>8</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/us>

<sup>9</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrinc45gvg-en.pdf?expires=1588087930&id=id&acname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>10</sup> OECD Statistics (2015) <https://stats.oecd.org/Index.aspx?DataSetCode=EPS>

<sup>11</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>12</sup> EIA (2020) <https://www.eia.gov/tools/faqs/faq.php?id=847&t=6>

<sup>13</sup> EIU: <https://foodsustainability.eiu.com>

<sup>14</sup> Financial Times (2020) <https://www.ft.com/content/fb8ef5a9-2e42-4b6a-acd0-078a1faa0d01>

<sup>15</sup> The Hill (2020) <https://thehill.com/policy/energy-environment/489753-epa-suspends-enforcement-of-environmental-laws-amid-coronavirus>

threat to imminent public health, the EPA will work to reduce that threat but it does not require any quantifiable limit on pollutants. These deregulatory schemes are applied to energy, industry, manufacturing, transportation and agriculture, as all of these sectors had pollutant discharge mandates before the outbreak.

## 1.2 Germany

Germany has passed a total of \$1.36 trillion USD in fiscal stimulus.<sup>16</sup>

**Environmentally relevant stimulus**<sup>17</sup>: Germany has announced a number of measures to support businesses, including \$835 billion USD in loan guarantees from the Economic Stabilisation Fund (WSF) and the public sector development bank KfW. Other measures, including healthcare equipment, hospital capacity and vaccine R&D spending, as well as welfare measures, have been excluded from the sectoral stimulus.

Sectors evaluated in Germany were moderately brown.

- **Underlying sector context ( $b_1$ ):** . Key sources consulted include:
  - ◇ Climate Action tracker rating<sup>18</sup>: Highly insufficient.
  - ◇ Yale's Environmental Performance indicator (EPI)<sup>19</sup>: High.
  - ◇ OECD Environmental Stringency index (ESI)<sup>20</sup>: Medium.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>21</sup>: Low.
  - ◇ EIU Agriculture Index: High.
- **Measure-specific conditionality ( $b_2$ ):** At this time, Germany has not passed any deregulation or environmentally conditional policies related to its fiscal stimulus measures.

<sup>16</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>17</sup> German Economic Ministry (2020). <https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Schlaglichter/Corona-Schutzschild/2020-03-19-Beschaefigung-fuer-alle.html>

<sup>18</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/>

<sup>19</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report>

<sup>20</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrinc45vgv-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>21</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

## 1.3 Japan

Japan has passed a total of \$1.08 trillion USD in fiscal spending measures as a response to COVID.<sup>22</sup>

**Environmentally relevant stimulus:** A substantial proportion of Japan's stimulus package is directed at protecting businesses (around \$800 billion). Other measures are directed at rebuilding a resilient economic structure (\$150 billion USD), regaining economic activities after lockdown (\$80 billion USD) and enhancing readiness for the future (\$15 billion USD). However, aside from funding into healthcare and disease prevention measures (\$25 billion USD), information on the sectoral breakdown of fiscal flows is limited, so a majority of the analysis is based upon estimated flows according to sector sizes.

Japan has a low but negative B value across all sectors.

- **Underlying sector context ( $b_1$ ):** . Across all sectors considered, Japan's fiscal stimulus hovers around a small 'brown' value. Key sources consulted include:
  - ◇ Climate Action tracker rating<sup>23</sup>: Insufficient.
  - ◇ Yale's Environmental Performance indicator (EPI)<sup>24</sup>: Medium.
  - ◇ OECD Environmental Stringency index (ESI)<sup>25</sup>: Low.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>26</sup>: Low-Medium.
  - ◇ EIU Agriculture Sustainability Index<sup>27</sup>: Medium-high.
- **Measure-specific conditionality ( $b_2$ ):** At this point in time, Japan has not passed specific 'brown' or 'green' policies. There have been provisional bailouts, directed funding towards either environmentally harmful or climate friendly policies or programs. Without measure specific deregulation, conditions, or other policy announcements, we have not considered conditionality in our analysis of the greenness of Japan's stimulus plan. Overall, fiscal stimulus is evaluated based on our baseline assumptions of sector level performance for the country.

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<sup>22</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>23</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/>

<sup>24</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report>

<sup>25</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrjnc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>26</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>27</sup> EIU: <https://foodsustainability.eiu.com>

## 1.4 United Kingdom

The United Kingdom has passed \$533 billion USD fiscal spending package.

**Environmentally relevant stimulus**<sup>28</sup>: Almost one quarter of UK spending is expected to flow into environmentally relevant sectors, including transport, agriculture and industry. This includes the soft loan of \$740 million USD extended to EasyJet.<sup>29</sup> Budget aid for NHS and other healthcare charities (\$18 billion USD), wage subsidies and welfare measures were excluded from the sectoral stimulus. Recipients of the remaining funding of around \$500 billion USD was then estimated using sector sizes.

The UK has a negative score across sectors, with deregulatory policies dragging down certain industries.

- **Underlying sector context ( $b_1$ )**: In the United Kingdom, initial sectoral baselines show a low to moderate ‘brown’ impact. Key sources consulted include:
  - ◇ Climate Action tracker score<sup>30</sup>: Insufficient.
  - ◇ Yale’s Environmental Performance indicator (EPI)<sup>31</sup>: Medium.
  - ◇ OECD Environmental Stringency index (ESI)<sup>32</sup>: High
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>33</sup>: Low-medium
  - ◇ EIU Agriculture Sustainability Index<sup>34</sup>: High.
- **Measure-specific conditionality ( $b_2$ )**: In the United Kingdom, deregulation has not been widespread, as is in other developed countries like the United States. The UK has limited environmental deregulation to the transportation sector:
  - ◇ A soft loan of \$740 million USD (£600 million GBP) to EasyJet by the federal government in the UK without any conditions for environmental improvement is categorised as a ‘brown’ bailout.<sup>35</sup> EasyJet, a British airline company received an unconditional loan from the government in response to the COVID pandemic and subsequent collapse of the aviation industry. Shareholders received dividends in mid-March while the airline was negotiating with the government for crisis funding. Although it is a loan, the government has granted the airline lenient terms on the money and not required any changes to environmental performance or emissions as a result of the payment.
  - ◇ A slight easing of permitting requirements in the agriculture, energy and waste sectors in the UK has taken place.<sup>36</sup> In agriculture, slurry from dairy farming may be used without a limit despite concerns of run off pollution. Energy firms are allowed to breach emissions limitations from combustion sources in the case of a blackout. Additionally, medical waste is allowed to be incinerated at registered municipal solid waste processing plants.

<sup>28</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>29</sup> The Guardian (2020). <https://www.theguardian.com/business/2020/apr/06/easyjet-secures-600m-coronavirus-loan-from-uk-treasury-and-bank>

<sup>30</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/uk/>

<sup>31</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/CAN>

<sup>32</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrjnc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>33</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>34</sup> EIU: <https://foodsustainability.eiu.com>

<sup>35</sup> Transport & Environment, Carbon Market Watch & Greenpeace (2020). <https://www.transportenvironment.org/sites/te/files/Airline-bailout-tracker-30-April.pdf>

<sup>36</sup> UK Government (2020). <https://www.gov.uk/government/collections/covid-19-regulatory-position-statements#water-industry>

## 1.5 Italy

**F value:** Italy has passed \$469 billion USD in fiscal stimulus measures to date.<sup>37</sup>

**Environmentally relevant stimulus<sup>38</sup>:** Italy's 'Liquidity Decree' provides €400 billion (\$441 billion USD) in state loan guarantees to businesses. Other support for businesses include tax deferrals, utility bill postponements and credit supply support. However, little information on sectoral breakdown of these measures was available. Other measures include healthcare and civil protection spending (\$3.5 billion USD), and increased income support for laid-off and self employed workers (\$11.3 billion USD), which were excluded from the sectoral stimulus.

**Italy has a low but very neutral average B value across sectors.**

- **Underlying sector context ( $b_1$ ):** Key sources consulted include:
  - ◇ Climate Action tracker rating<sup>39</sup>:Medium.
  - ◇ Yale's Environmental Performance indicator (EPI)<sup>40</sup>: High.
  - ◇ OECD Environmental Stringency index (ESI)<sup>41</sup>: Insufficient.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>42</sup>: Low.
  - ◇ EIU Agriculture Index: High.
- **Measure-specific conditionality ( $b_2$ ):** Italy currently has not announced any spending measures which flow directly into green or brown programs or industries. In addition to a lack of targeted funding, there has also been no suspension or removal of environmental programs. There have also been no targeted investments in low-carbon solutions as a part of the fiscal stimulus either.

<sup>37</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>38</sup> IMF Policy Tracker (2020), Forbes (2020) <https://www.forbes.com/sites/irenedominioni/2020/04/07/italy-unveils-unprecedented-435-billion-plan-to-support-coronavirus-hit-economy/#6d0c387f7214>

<sup>39</sup> Climate Action tracker (2019). <https://climateactiontracker.org/countries/>

<sup>40</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report>

<sup>41</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrinc45vgv-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>42</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

## 1.6 France

France has passed a total of \$469 billion USD in fiscal spending.<sup>43</sup>

**Environmentally relevant stimulus:** Aside from Air France's direct loan from the government, the availability of data on sector specific stimulus breakdown was low.<sup>44</sup> Additional information on measures particular to the sectors of interest in France was not available, and sector size by GVA was used to estimate the remaining stimulus flows into the environmentally relevant sectors.

**France's overall baseline B value and conditional measures demonstrate a positive B value across sectors.**

- **Underlying sector context ( $b_1$ ):** We estimate 70% of environmentally relevant funding is categorically 'green' based upon the baseline valuation of French environmental performance across sectors. Key sources consulted include:
  - ◇ Climate Action tracker rating<sup>45</sup>: High.
  - ◇ Yale's Environmental Performance indicator (EPI)<sup>46</sup>: High.
  - ◇ OECD Environmental Stringency index (ESI)<sup>47</sup>: Medium.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>48</sup>: Low.
  - ◇ EIU Agriculture Index: High.
- **Measure-specific conditionality ( $b_2$ ):** The baseline analysis informs most of France's greenness index by sector, with the exception of transport. At this time, the measure specifications we have considered are below:
  - ◇ France has extended a \$7.6 billion USD deal to Air France, as part of an EU approved deal between the Netherlands and France to bailout the airline.<sup>49</sup> The extension of the funding, where about \$4 billion USD is in the form of a loan and the rest in guarantees. While the French government did not take an equity stake in exchange for funding, the French government has made the loan conditional on two environmental goals: the reduction of emissions by 50% by 2024 and a minimum standard of 2% renewable fuel by the same time period. While the specifics of how this will be affirmed or enforced are still not released, this is a prime example of transport funding being made conditional on the future environmental imprint of the firm, and therefore is seen as a 'green' response measure.

<sup>43</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>44</sup> Financial Times (2020). <https://www.ft.com/content/a58fdfe9-a4b8-477c-be9b-5b2090f41fed>

<sup>45</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/>

<sup>46</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report>

<sup>47</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrjnc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>48</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>49</sup> New York Times (2020). <https://www.nytimes.com/2020/04/25/business/air-france-klm-bailout.html>

## 1.7 China

China has passed a total of \$366 billion USD in fiscal spending.<sup>50</sup>

**Environmentally relevant stimulus:** Almost \$200 billion USD is estimated to flow into key environmentally related sectors. Little information on specific breakdown of stimulus was found, as many lines of credit are extended to state owned enterprises<sup>51</sup> and therefore do not make public disclosure.

**Sectors evaluated in China prove to be overwhelmingly brown.**

- **Underlying sector context ( $b_1$ ):** Key sources consulted include:
  - ◇ Climate Action tracker score<sup>52</sup>: Highly insufficient.
  - ◇ Yale’s Environmental Performance indicator (EPI)<sup>53</sup>: Low.
  - ◇ OECD Environmental Stringency index (ESI)<sup>54</sup>: Low.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>55</sup>: High.
  - ◇ EIU Agriculture Sustainability Index<sup>56</sup>: Very low.
- **Measure-specific conditionality ( $b_2$ ):** Negative impact, or ‘brown’ measures in China have been introduced in energy, transport and industry. These policies include:
  - ◇ The increased speed of coal permit approval in China is a backward progression for the country which had previously banned new coal-fired power plants previous to 2018.<sup>57</sup> In February and March, China had loosened the labelling on the provinces which were previously considered over-capacity for coal production to available for sites, and had more permit approvals than in the same period in 2019.<sup>58</sup> From the post-2008 crisis, China funded much of the coal capacity they have today.<sup>59</sup>
  - ◇ Chinese provinces have rolled out car subsidies to save the general industry, without specific conditions for EVs.<sup>60</sup> Only the province of Guangzhou has made explicit support available for EVs, but it is comparable to the subsidies being offered on fossil fuel vehicles. These subsidies are mostly in the form of cash transfers to buyers of vehicles, and certain regions are promoting higher subsidies for car manufacturers located in the province. Without specific stipulations on EVs, this imposes a ‘brown’ weight on the transport sector.
  - ◇ Contrarily, while local governments are extended subsidies for any vehicles, the Chinese government has extended its national EV subsidy program through 2022<sup>61</sup> This extension of an existing subsidy coupled with the government’s recent announcement to reduce the permitting

<sup>50</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>51</sup> The Economist (2020). <https://www.economist.com/finance-and-economics/2020/04/16/why-has-chinas-stimulus-been-so-stingy>

<sup>52</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/>

<sup>53</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/>

<sup>54</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrjnc45vgv-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>55</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>56</sup> EIU: <https://foodsustainability.eiu.com>

<sup>57</sup> Climate Action Tracker (2019); <https://climateactiontracker.org/countries/>

<sup>58</sup> Global Energy Monitor (2020). [https://endcoal.org/wp-content/uploads/2020/03/BoomAndBust\\_2020\\_English.pdf](https://endcoal.org/wp-content/uploads/2020/03/BoomAndBust_2020_English.pdf)

<sup>59</sup> Wong, Christine (2011), “The Fiscal Stimulus Programme and Public Governance Issues in China”, OECD Journal on Budgeting, Vol. 11/3. <http://dx.doi.org/10.1787/budget-11-5kg3nhljqrjl>

<sup>60</sup> Financial Times (2020). <https://www.ft.com/content/12cc8c6a-5f7a-11ea-b0ab-339c2307bcd4>

<sup>61</sup> PR Newswire (2020). <https://www.prnewswire.com/news-releases/china-extends-new-energy-vehicle-purchase-subsidies-and-purchase-tax-exemption-policy-for-two-years-301032549.html>

requirements on new electric vehicles provide a ‘green’ boost to the transport sector in China.<sup>62</sup> Given this extension is only of an existing policy, and is already under consideration for reduction by the year’s end<sup>63</sup>, it has a small but positive effect on our valuation of the greenness of transport in China’s fiscal stimulus plan.

- ◇ China is also rolling back or simplifying environmental regulations on industries from manufacturers to smaller firms like service industry establishments and hotels.<sup>64</sup> The simplification means that certain mandatory environmental reporting standards will be put on hold for firms that are producing materials used in healthcare, transport, food or essential services during coronavirus. Additionally, the disclosure of pollutants by firms broadly will be suspended later into the year. This type of rollback across industry is a ‘brown’ push in the Chinese fiscal stimulus plan, given that it allows for unchecked pollution in an attempt to jumpstart economic activity.
- ◇ China made the unprecedented decision to issue a nationwide ban on all terrestrial wild animal commerce and consumption, including exotic species raised on farms. Significant revisions are now being considered to a number of laws, from conservation to animal epidemic prevention. Officials are also developing a new biosecurity law.

## 1.8 India

India has recently passed a \$266 billion USD fiscal stimulus package in response to COVID.<sup>65</sup>

**Environmentally relevant stimulus:** As yet the contents of India’s \$266 billion USD stimulus package is relatively unknown. Aside from previously announced funding for healthcare and welfare support measures, little information on sectoral breakdown is available. More detail about the contents of the package is expected to be released over the coming days.

India’s ‘brown’ index score is driven by poor environmental performance across the key sectors.

- **Underlying sector context ( $b_1$ ):** Key sources consulted include:
  - ◇ Climate Action tracker rating<sup>66</sup>: Good.
  - ◇ Yale’s Environmental Performance indicator (EPI)<sup>67</sup>: Low.
  - ◇ OECD Environmental Stringency index (ESI)<sup>68</sup>: Low.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>69</sup>: High.
  - ◇ EIU Agriculture Sustainability Index<sup>70</sup>: Low.
- **Measure-specific conditionality ( $b_2$ ):** Prime Minister Modi’s initial announcement of the stimulus package has given little away about the allocation of stimulus, and it is unclear whether it will be accompanied by any specific ‘green’ or ‘brown’ policies. More information on this will be incorporated into the index when it becomes available.

<sup>62</sup>IHS Market (2020). <https://ihsmarkit.com/research-analysis/china-steps-up-efforts-to-boost-auto-industry.html>

<sup>63</sup> Bloomberg (2020). <https://www.bloomberg.com/news/articles/2020-04-01/china-mulling-cutting-electric-car-subsidies-it-just-extended>

<sup>64</sup> Reuters (2020). <https://uk.reuters.com/article/us-health-coronavirus-china-environment/china-to-modify-environmental-supervision-of-firms-to-boost-post-coronavirus-recovery-idUKKBN20X0AG>

<sup>65</sup> <https://www.ft.com/content/5734f333-e4d7-4ebf-9de2-220e537da3f0>

<sup>66</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/>

<sup>67</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report>

<sup>68</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrjnc45gvg-en.pdf?expires=1588087930&id=id&acname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>69</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>70</sup> EIU: <https://foodsustainability.eiu.com>

## 1.9 South Korea

South Korea has passed fiscal stimulus equal to \$197 billion USD.

**Environmentally relevant stimulus**<sup>71</sup>: We tracked the instruments of fiscal stimulus deployed by the government. This included loans and guarantees for business operations, an employment retention support scheme and wage and rent support for small business operations. An additional Key Industries fund has been introduced as of April 22, extending KRW 40 trillion (\$33 billion USD) in loans to industries most effected.<sup>72</sup> Specific information was available in regards to the bailout of a large coal operator, valued at \$850 million USD.<sup>73</sup>

South Korean sectors have a range of B values, overall negative, from baseline and specific stimulus measures.

- **Underlying sector context ( $b_1$ ):** Key sources consulted were:
  - ◇ Climate Action tracker score<sup>74</sup>: Highly insufficient.
  - ◇ Yale's Environmental Performance indicator (EPI)<sup>75</sup>: Medium.
  - ◇ OECD Environmental Stringency index (ESI)<sup>76</sup>: Medium
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>77</sup>: Medium-High.
  - ◇ EIU Agriculture Sustainability Index<sup>78</sup>: High.
- **Measure-specific conditionality ( $b_2$ ):** Information regarding deregulation, the delaying or deferral of climate policies, or specific green conditions were included as measure specific conditions. At this time, the measure specifications considered for South Korea include:
  - ◇ South Korea is increasing tax relief for the car manufacturing industries for an additional three months and providing additional aid to the industry.<sup>79</sup> The tax deduction of 30% has been extended in an effort to boost sales, but does not offer any conditions or additional incentives for electric or hydrogen vehicles. This extension of a tax cut to the most emissions intensive sector in South Korea is categorised in our analysis as a deregulatory measure in transportation.
  - ◇ A bailout measure was extended in early April to Doosan Heavy Industry, the country's largest producer of coal plants, by the Korean Development Bank and the Import-Export Bank of Korea, in total of \$825 million USD. An additional emergency loan amounting to \$625 million USD has since been extended to the firm.<sup>80</sup> The first loan was a part of the original COVID stimulus, and the second was announced on April 28<sup>th</sup>, despite Doosan Heavy Industry's credit rating dropping

<sup>71</sup> IMF Policy tracker (2020) <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>, Pulse News (2020)

<sup>72</sup> Financial Service Commissions (2020).

[https://www.fsc.go.kr/eng/new\\_press/releases.jsp?menu=01&bbsid=BBS0048&selYear=&sch1=&sword=&nxPage=1](https://www.fsc.go.kr/eng/new_press/releases.jsp?menu=01&bbsid=BBS0048&selYear=&sch1=&sword=&nxPage=1)

<sup>73</sup> Monga Bay (2020). <https://news.mongabay.com/2020/04/south-korea-doosan-heavy-coal-power-bailout-covid19-indonesia/>

<sup>74</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/uk/>

<sup>75</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/CAN>

<sup>76</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrjnc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>77</sup> European Environment Agency (2018). <https://edgar.irc.ec.europa.eu/>

<sup>78</sup> EIU: <https://foodsustainability.eiu.com>

<sup>79</sup> Pulse News Korea (2020) <https://pulsenews.co.kr/view.php?year=2020&no=217288>

<sup>80</sup> Pulse News Korea (2020) <https://pulsenews.co.kr/view.php?year=2020&no=439931>

before the crisis.<sup>81</sup> This loan comes with no environmental conditions and is an example of South Korea's direct injection of cash towards a heavy producer in the brown industry.

- ◇ South Korea has announced a long-term energy plan, which includes plans to shut down 30 coal-fired power plants by 2034 and to substantially raise the share of new and renewable energy. While not directly related to COVID stimulus, the plan is a sign that South Korea is placing emphasis on environmental improvements.

## 1.10 Spain

Spain has passed a total of \$144 billion USD in fiscal spending as a response to COVID.<sup>82</sup>

**Environmentally relevant stimulus<sup>83</sup>:** Alongside announced health and welfare measures, Spain's package includes loan guarantees of €100 billion (\$110 billion USD) and other smaller measures to support businesses. Little information on sectoral breakdown of these stimulus measures was available, so our analysis largely estimates sectoral flows using sector size.

**All sectors in Spain have a moderately negative score, with the transport sector as the most 'brown'.**

- Underlying sector context ( **$b_1$** ): Key sources consulted include:
  - ◇ Climate Action tracker rating<sup>84</sup>: Insufficient.
  - ◇ Yale's Environmental Performance indicator (EPI)<sup>85</sup>: High.
  - ◇ OECD Environmental Stringency index (ESI)<sup>86</sup>: Low.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>87</sup>: Low-medium.
  - ◇ EIU Agriculture Sustainability Index<sup>88</sup>: Medium-high.
- **Measure-specific conditionality ( $b_2$ ):** Information regarding deregulation, the delaying or deferral of climate policies, or specific green conditions were included as measure specific conditions. At this time, the measure specifications considered for Spain include:
  - ◇ The Spanish government in January announced the 2030 climate and energy targets would require an additional \$260 million USD for emissions reductions in the energy sector<sup>89</sup>. While not an explicit measure outlined in the COVID stimulus package, the government has adopted an agreement to slowly close an energy park that is mostly coal and other fossil fuel-based. This planned closure does not feed into our analysis to date, but gives an indication that the energy sector in Spain will be more 'green' given the government's existing commitment to defunding and closing this major electricity park that is fossil fuel based and redirecting funding towards renewable energy.

<sup>81</sup> KoreaBiz (2020) <http://koreabizwire.com/policy-lenders-mulling-providing-800-bln-won-to-doosan-heavy/158650>, Eco-Business (2020) <https://www.eco-business.com/news/green-groups-decry-south-koreas-bailout-of-coal-power-plant-builder/>

<sup>82</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>83</sup> KPMG (2020). <https://home.kpmg/xx/en/home/insights/2020/04/spain-tax-developments-in-response-to-covid-19.html>

<sup>84</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/>

<sup>85</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report>

<sup>86</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrjnc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>87</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>88</sup> EIU: <https://foodsustainability.eiu.com>

<sup>89</sup> El Economista (2020). <https://www.eleconomista.es/empresas-finanzas/noticias/10313736/01/20/El-Gobierno-sube-la-inversion-en-clima-y-energia-hasta-los-241000-millones-durante-la-decada.html>

## 1.11 Australia

Australia to date has passed \$141 billion USD in total fiscal spending.<sup>90</sup>

**Environmentally relevant stimulus**<sup>91</sup>: A substantial proportion of government support is directed towards helping businesses. Health spending accounts for at least \$3.3 billion USD, and other measures to provide payroll support and relief to households through discounted utility bills and cash transfers (around \$7 billion USD) have been excluded from the sectoral stimulus estimates.

**Australia sees relatively neutral B scores in all but the energy sector.**

- **Underlying sector context ( $b_1$ ):** Key sources consulted include:
  - ◇ Climate Action tracker score<sup>92</sup>: Insufficient.
  - ◇ Yale’s Environmental Performance indicator (EPI)<sup>93</sup>: Medium-High.
  - ◇ OECD Environmental Stringency index (ESI)<sup>94</sup>: Medium-High.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>95</sup>: Medium
  - ◇ EIU Agriculture Sustainability Index<sup>96</sup>: Medium.
- **Measure-specific conditionality ( $b_2$ ):** Information regarding deregulation, the delaying or deferral of climate policies, or specific green conditions were included as measure specific conditions. In Australia, the following has been included:
  - ◇ A partial suspension of permitting and licensing fees was instated in the oil, gas and mining sectors in South Australia.<sup>97</sup> The government announced in April that licensing fees and annual petroleum fees will not be due until December 2020.<sup>98</sup> This explicit tax and fee deferral made for the oil, gas, and mining industries in South Australia is a ‘brown’ policy given it explicitly extends relief to fossil fuel firms without conditions for environmental performance. Given that this is only regional, the policy rollback does not impose as high of a brown weight as a federal rollback would. But, because these firms are concentrated in the Southern region of Australia, it is still a major endorsement of fossil fuels that contradicts Australia’s pledge to emissions reductions.

<sup>90</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>91</sup> BDO Australia (2020). <https://www.bdo.com.au/en-au/insights/tax/business-tools/faqs-on-australias-covid-19-economic-stimulus-tax-measures>, Sunday Monday Herald (2020). <https://www.smh.com.au/politics/federal/15-who-gets-what-from-stimulus-packages-what-is-jobkeeper-20200316-p54aqw.html>

<sup>92</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/uk/>

<sup>93</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/CAN>

<sup>94</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5ixrjnc45vgv-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>95</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>96</sup> EIU: <https://foodsustainability.eiu.com>

<sup>97</sup> Climate Change News (2020). <https://www.climatechangenews.com/2020/04/20/coronavirus-governments-bail-airlines-oil-gas/>

<sup>98</sup> APPEA (2020). [https://www.appea.com.au/media\\_release/sa-supports-exploration-amid-covid-19-challenges/](https://www.appea.com.au/media_release/sa-supports-exploration-amid-covid-19-challenges/)

## 1.12 Canada

Canada has passed a CA\$198 billion (US\$140 billion)<sup>99</sup> spending package.

**Environmentally relevant stimulus<sup>100</sup>:** CA\$5 billion (US\$3.6 billion) has been secured for Farm Credit Canada to extend more loans to agricultural and food producers. For the energy sector, \$1.72 billion CAD (\$1.23 billion USD) has been split between the main oil producing provinces of British Columbia, Alberta, and Saskatchewan. An additional \$750 million CAD (\$537 million USD) has been set aside for oil and gas to comply with the 2019 methane regulation, which does not fund environmental performance beyond compliance. Other specific provisions include a small and medium enterprise (SME) loan program. SMEs are receiving additional credit, but the breakdown of the sector specific flows has not yet been disclosed by the Canadian government.

**Canada has specific programs that are pro-environmental, but overall trajectory shows the country has a negative B valuation across all sectors analysed.**

- **Underlying sector context ( $b_1$ ):** In Canada, initial sectoral baselines show a low to moderate ‘brown’ impact. Key sources consulted include:
  - ◇ Climate Action tracker score<sup>101</sup>: Insufficient.
  - ◇ Yale’s Environmental Performance indicator (EPI)<sup>102</sup>: Medium-High.
  - ◇ OECD Environmental Stringency index (ESI)<sup>103</sup>: Medium-High.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>104</sup>: Medium-High
  - ◇ EIU Agriculture Sustainability Index<sup>105</sup>: Medium.
- **Measure-specific conditionality ( $b_2$ ):** In Canada, deregulation of the energy sector has had a stronger negative impact than the positive expenditure invested in oil and gas clean up. Specific measures include:
  - ◇ A ‘green’ positive score was given for the energy sector given Canada’s commitment to cleaning up abandoned and unused well sites as a part of the stimulus package to the provinces of British Columbia, Alberta, and Saskatchewan. Additional funding to the energy sector was conditional on being used to cover the cost of labour necessary to install upgraded methane monitoring and reduction technologies in line with recently updated methane emissions standards.<sup>106</sup>
  - ◇ A ‘brown’ negative score was given for the energy sector owing to tax relief to the O&G sector provided by the Province of Alberta; and expanded export credit capacity in Export Development Canada is highly likely to benefit the O&G sector.
  - ◇ For transportation, a negative additive score was considered given Canada’s rollback of airline docking fees. These ground lease rents are suspended through the end of the year and are being expanded to large port cities across Canada. Providing economic relief to aviation and

<sup>99</sup> Conversion from the Canadian dollar to US dollar are taken using the weekly average exchange using Morning Star

<sup>100</sup> Government of Canada (2020), Canada Economic Response Plan (2020), Prime Minister of Canada (2020)

<sup>101</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/uk/>

<sup>102</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/CAN>

<sup>103</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5jxrjnc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>104</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>105</sup> EIU: <https://foodsustainability.eiu.com>

<sup>106</sup> Canadian Broadcast Corporation (2020). <https://www.cbc.ca/news/politics/financial-aid-covid19-trudeau-1.5535629>

subsequently navigation without any conditions falls into a ‘brown’ category as they do not require any improvements from the baseline of these high emitting sectors.

- ◇ The Canadian government announced that recipients of support from the Large Employer Emergency Financing Facility (LEEFF) must commit to disclosing yearly climate-related reports, including an assessment of the impact of their future operations on sustainability and climate goals.

## 1.13 Brazil

**Brazil has passed a total of \$126 billion USD in fiscal stimulus spending.<sup>107</sup>**

**Environmentally relevant stimulus:** The Brazilian government has introduced a number of measures to support businesses, including an additional extension of working capital to SMEs (\$14.9 billion USD) and a relief plan of at least \$8 billion to large companies affected by the crisis. Temporary income and payroll support measures were excluded from our analysis.

**Brazil’s energy sector is most ‘brown’ while industry and transport are closely behind.**

- **Underlying sector context ( $b_1$ ):** Key sources consulted include:
  - ◇ Climate Action tracker score<sup>108</sup>: Insufficient
  - ◇ Yale’s Environmental Performance indicator (EPI)<sup>109</sup>: Medium.
  - ◇ OECD Environmental Stringency index (ESI)<sup>110</sup>: Very low.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>111</sup>: High.
  - ◇ EIU Agriculture Sustainability Index<sup>112</sup>: Low.
- **Measure-specific conditionality ( $b_2$ ):** Information regarding deregulation, the delaying or deferral of climate policies, or specific green conditions were included as measure specific conditions. At this time, the measure specifications considered for Brazil include:
  - ◇ Brazil has announced a delay in their electricity auctions which were anticipated to be rolled out in the spring of 2020.<sup>113</sup> Because of this delay, it is likely that gas producers have more time to improve their relative market share and attract additional private investment. The postponement of energy auctions may impose additional barriers to the development of renewable energy in the country.
  - ◇ Additional measures that have not been formalised but are currently under development include the deregulation of land use in the Amazon. This deregulation would include relaxing restrictions on logging and development permits to boost growth in the timber, agriculture, and industrial sectors.<sup>114</sup> This relaxation of enforcement of land use is predicted to cause an uptick in illegal land poaching from indigenous communities and come with negative environmental consequences.

<sup>107</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>108</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/uk/>

<sup>109</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/CAN>

<sup>110</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5jxrjnc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>111</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>112</sup> EIU: <https://foodsustainability.eiu.com>

<sup>113</sup> BN Americas (2020). <https://www.bnamericas.com/en/analysis/spotlight-the-impacts-of-brazils-decision-to-postpone-all-electricity-auctions>

<sup>114</sup> PV Magazine (2020). <https://www.pv-magazine.com/2020/04/01/brazil-postpones-energy-auctions/>

<sup>114</sup> Brazil government (2020). [http://www.planalto.gov.br/ccivil\\_03/\\_ato2019-2022/2019/Mpv/mpv910.htm](http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2019/Mpv/mpv910.htm)

## 1.14 Russia

Russia has passed a total of \$46 billion USD in fiscal stimulus measures.<sup>115</sup>

**Breakdown of stimulus-specific data:** Alongside healthcare and welfare measures, Russia has included support for businesses in its stimulus package. These include loan guarantees, interest rate subsidies, tax deferrals and delays in social contributions for SMEs in affected industries. However, very little data is available on the breakdown of these stimulus flows between sectors.

**Russia has large negative scores in industry and transport, which are expected to receive substantial support.**

- **Underlying sector context ( $b_1$ ):** Key sources consulted include:
  - ◇ Climate Action tracker score<sup>116</sup>: Critically Insufficient.
  - ◇ Yale’s Environmental Performance indicator (EPI)<sup>117</sup>: Medium.
  - ◇ OECD Environmental Stringency index (ESI)<sup>118</sup>: Very low.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>119</sup>: Very High.
  - ◇ EIU Agriculture Sustainability Index<sup>120</sup>: Low-Medium.
- **Measure-specific conditionality ( $b_2$ ):** Information regarding deregulation, the delaying or deferral of climate policies, or specific green conditions were included as measure specific conditions. Specific measures include:
  - ◇ The Russian federal government had introduced a stabilization mechanism to absorb shocks in the global oil market in 2019, and this mechanism has been used to compensate for the difference between the market price of oil and the domestic price of oil in Russia. Russia is self-funding the continued production of oil even when prices have dipped to record lows, even negative. This is a direct and explicit bailout to a sector that is responsible for high emissions in Russia. Given they have been using this mechanism previously and now are redeploying it in a time of crisis highlights the brownness of the sector’s trajectory as well as the greenness of the response to the economic lull.
  - ◇ Russia has also introduced a deferral of loan payments for ‘hard hit’ sectors who are classified as small and medium enterprises (SMEs). This loan deferral for SMEs will include any extended cash received by these businesses. The ‘hard hit’ sectors include leisure, service, transportation, travel and aviation. By offering loan deferral for these sectors that are also high emitting—transportation, aviation—a form of stimulus without any environmental condition is a funneling of cash directly to carbon intensive sectors. This type of unchecked stimulus is ‘brown’ as it is a missed opportunity to provide environmental conditions in exchange for bailout funding from carbon intensive sectors.

<sup>115</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>116</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/uk/>

<sup>117</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/CAN>

<sup>118</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5jxrinc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>119</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>120</sup> EIU: <https://foodsustainability.eiu.com>

## 1.15 Indonesia

Indonesia has passed \$27 billion USD in fiscal stimulus measures.<sup>121</sup>

**Environmentally relevant stimulus**<sup>122</sup>: Currently, specific measures that have been introduced were pulled from both the IMF Policy Tracker as well as the KPMG Insights website for Indonesia specific measures. While health sector and social protection make up almost half of the total stimulus, substantial support for businesses has been announced, including tax incentives, loans and guarantees – with a large proportion expected to be directed towards industry and agriculture.

Of all sectors, agriculture carries the most ‘brown’ score.

- **Underlying sector context ( $b_1$ ):** Key sources consulted include:
  - ◇ Climate Action tracker score<sup>123</sup>: Highly insufficient
  - ◇ Yale’s Environmental Performance indicator (EPI)<sup>124</sup>: Low
  - ◇ OECD Environmental Stringency index (ESI)<sup>125</sup>: Very low
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>126</sup>: High.
  - ◇ EIU Agriculture Sustainability Index<sup>127</sup>: Low.
- **Measure-specific conditionality ( $b_2$ ):** Information regarding deregulation, the delaying or deferral of climate policies, or specific green conditions were included as measure specific conditions. At this time, the measure specifications considered for Indonesia include:
  - ◇ Indonesia recently passed a new mining law that benefits the coal mining industry by guaranteeing 2 x 10 year extensions to licence holders. Although the law is not responding to COVID-19 explicitly, it is highly likely that the law responds to increased pressure to the industry from the collapsed demand from China and India.
  - ◇ The rolling back of permitting for forest and land use in Indonesia. The relaxing of permit regulations for land use and forest use is a major concern in Indonesia given the rapid deforestation by illegal or overlogging the country has experienced when policies are not enforced or in place.<sup>128</sup> This relaxation of measures deviates the country from its positive trajectory towards a more ‘brown’ trajectory as they risk damaging much of their remaining forest in a short period of time for a small, short run economic boost in the timber sector.

<sup>121</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>122</sup> KPMG Insights (2020). <https://home.kpmg/xx/en/home/insights/2020/04/indonesia-government-and-institution-measures-in-response-to-covid.html>

<sup>123</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/uk/>

<sup>124</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/CAN>

<sup>125</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/Sjxrjnc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>126</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>127</sup> EIU: <https://foodsustainability.eiu.com>

<sup>128</sup> Mighty Earth COVID report (2020). <https://stories.mightyearth.org/the-coronavirus-climate-profiteers/index.html>

Monga Bay (2020). <https://news.mongabay.com/2020/03/indonesia-timber-illegal-logging-legality-license-svlk/>

## 1.16 Mexico

Russia has passed a total of \$26 billion USD in fiscal stimulus measures.<sup>129</sup>

**Breakdown of stimulus-specific data:** Mexico's stimulus includes health and social programmes as well as support for businesses. In particular, the government has directed substantial funding to energy and transport sectors.

**Mexico has negative scores in industry and transport, which are driving its poor index performance.**

- Underlying sector context (**b<sub>1</sub>**): Key sources consulted include:
  - ◇ Climate Action tracker score<sup>130</sup>: Critically Insufficient.
  - ◇ Yale's Environmental Performance indicator (EPI)<sup>131</sup>: Medium.
  - ◇ OECD Environmental Stringency index (ESI)<sup>132</sup>: Very low.
  - ◇ Sectoral emissions intensity (GHG/\$)<sup>133</sup>: Very High.
  - ◇ EIU Agriculture Sustainability Index<sup>134</sup>: Low-Medium.
- **Measure-specific conditionality (b<sub>2</sub>):** Information regarding deregulation, the delaying or deferral of climate policies, or specific green conditions were included as measure specific conditions. Specific measures include:
  - ◇ The Mexican government has committed part of its \$26 billion USD spending package to the flagship oil refinery and the new airport development that has begun under the Mexican President. Because of his declaration that these projects would continue to be funded through COVID fiscal measures, this is classified as a 'negative' impact on Mexico's greenness index as they are 'brown' projects.

<sup>129</sup> IMF Policy Tracker (2020). <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

<sup>130</sup> Climate Action Tracker (2019). <https://climateactiontracker.org/countries/uk/>

<sup>131</sup> Yale Environmental Performance Index (2018). <https://epi.envirocenter.yale.edu/epi-country-report/CAN>

<sup>132</sup> OECD Working Paper 1107 (2018). <https://www.oecd-ilibrary.org/docserver/5jxrinc45gvg-en.pdf?expires=1588087930&id=id&accname=guest&checksum=B0695EB229FB22622C1C81C61B9B5B85>

<sup>133</sup> European Environment Agency (2018). <https://edgar.jrc.ec.europa.eu/>

<sup>134</sup> EIU: <https://foodsustainability.eiu.com>