# HBS COVID-19 Global Policy Tracker

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# H A R V A R D | B U S I N E S S | S C H O O L

# HBS COVID-19 GLOBAL POLICY TRACKER

**Download the data at www.globalpolicytracker.com**

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**Abstract**: The HBS Covid-19 Global Policy Tracker is an initiative by the BGIE unit at Harvard Business School to collect and standardize economic policies implemented as a response to the coronavirus pandemic around the world. We focus on fiscal policy, monetary policy, and lockdowns and quantify government responses in common variables, units, and currencies to facilitate cross-country comparisons. The database is updated in real-time with the efforts of several dozens of students at HBS and other Harvard schools.

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# 1. INTRODUCTION

COVID-19, officially a global pandemic as classified by the World Health Organization (WHO), has resulted in millions of cases around the world and resulted in a range of government responses to protect their citizens from this public health crisis. While the virus has prompted massive disruptions to major economies around the world, policies implemented by governments are widely diverse and their economic impact remains to be seen.

We put together a Global Policy Tracker to monitor new developments and changes in government policies throughout this crisis, and to analyze trends and correlations in countries' responses and economic impact.

A key characteristic of this tracker is that we try to quantify government responses in common variables, units, and currencies to facilitate cross-country comparisons and outcome evaluation over the course of the spread of the Pandemic.

This working paper describes the data and indicators used to standardize the tracking of government policies across countries. It will be updated as new types of policies are added to the tracker and additional analyses are performed on available data.

# 2. DATA AND METHODOLOGY

The HBS Global Policy Tracker uses publicly available media and government sources to identify new and changing government policies. For each policy, we list the source where the information was obtained, and if possible, provide a link to the official announcement in a government website.

Our initial database includes policies from 47 countries: Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Canada, Chile, China, Colombia, Denmark, Egypt, Arab Rep., Ethiopia, Euro Area, France, Germany, Honduras, Hong Kong SAR, China, India, Indonesia, Iraq, Ireland, Israel, Italy, Japan, Kazakhstan, Korea, Rep., Malaysia, Mexico, Myanmar, Netherlands, Norway, Oman, Pakistan, Peru, Philippines, Russian Federation, Saudi Arabia, Singapore, South Africa, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, United Arab Emirates, United Kingdom, United States.

New countries will be added over time.

## 2.1. Type of Policies Tracked

We divide policies into fiscal, monetary, and lockdown types. Each policy is also categorized into subtypes, as listed in Table 1.

## Table 1: Policies Tracked

| Type | Subtypes | Description & Examples |
|---|---|---|
| **Fiscal** | General | Total amount of the announcement. Used only when the policy is not divided into other subtypes. |
| | Direct Spending | Infrastructure, hospitals, public transit, etc. The government is buying the goods or services. |
| | Direct Transfers | Transfers for poor families, UE insurance payments, grants for businesses (no repayment), aid to states (not loans). Note that the government is not doing the actual spending in these cases. |
| | Tax Benefits and Cuts | Tax cuts for people or businesses, extending deadlines or adding exceptions |
| | Loans | When repayment is expected (not a grant). To people, businesses, provinces, any other. |
| | Regulation | More flexible/simpler regulations, reducing firms' costs that are not taxes. |
| | Other | Used when we are splitting the policy amounts in subtypes and we cannot classify part of the policy into the other subtypes. Only the partial amount that could not be classified is included here. |
| **Lockdown** | Partial | Partial if it does not cover the whole country or lockdown not complete or loosely enforced. |
| | Full | Cases with exceptions for "essential business," or such should be considered Full. Use your judgment here to decide. |
| **Monetary** | Rate cuts | Traditional policy rate cuts (fed funds rate, discount rate, etc.) |
| | Lending to Government | CB directly buys government bonds (or other form of lending) from the central government. |
| | Change in Reserve Requirement | Change in bank's required reserve ratios |
| | Credit Facilities to Financial Institutions | CB is lending to commercial and non-commercial banking institutions (eg investment banks, money market funds) |
| | Credit Facilities to Corporations | CB is lending to non-financial institutions (i.e. buying corporate bonds directly from firms) |
| | QE (large scale asset purchases) | CB is buying large/unlimited quantities of non-traditional assets (long-term gov bonds, corporate, etc.). |
| | Exchange Rate or Capital Controls | Government limits access to the foreign exchange market or restricts money otherwise coming in and out of the country. |
| | Other | Undefined |
| **Other** | | To be classified / standardized later. |

In some cases, the fiscal policy announcement did not have details on how the funds would be split into different use cases. In these cases, the fiscal policy is reported with a single row classified as "General" in the subtype.

When details of the funding for different subtypes are available, we split the fiscal policy into multiple rows in the database. In some cases, there might be a portion of the total amount that is either not specified or it is not possible to classify into one of our standard sub-types of policies. This is separately classified as "Fiscal, Other".

Regardless of how the fiscal policy announcement is split, we ensure that the sum of all the individual rows matches the total amount of the package. In other words, there is no double-counting in the amount columns.

Monetary policy announcements are binary indicators identified by different subtypes. We do not quantify these variables because the policies are not homogeneous across countries (monetary policies). Our goal is to track which countries have implemented this type of policies over time, and rank their popularity across locations.

Lockdowns are divided into partial and full, according to the classification guidelines in Table 1. We do not split lockdowns into more detailed subtypes to ensure we can comprehensibly track them at a more aggregate level in all countries.

All policies are reported at the country level, except for the monetary policy announcements from the European Central Bank. These are reported separately as the Euro Area, identified with the "EMU" country code. No monetary policies are included for the individual countries that belong to the Euro Area.

## 2.2. Collected Variables

The variables collected by our team are shown in Table 2. We include the date of the announcement, the type and subtype of the policy, and the start and end dates of the policy. The nominal amount of the policy is entered in the original currency and units announced

**Table 2: Data Collection**

| Variable | Explanation |
| --- | --- |
| Date of announcement | The date of the policy announcement. We use an approximate date if the details are not available. |
| Reference | The url to the information source. Can be a primary source (government announcement) or a newspaper article from a reputable media outlet. |
| Type of Policy | Drop-down list the previous table |
| Subtype | Drop-down list from previous table |
| Policy Description | Open text field. Add a brief description of the policy. Anything considered relevant/useful to know. |
| Amount | Only numbers (no $ signs) |
| Currency | LCU (local currency unit) or USD, as reported in the reference source |
| Unit | Trillions, Billions, Millions, or thousands, as reported in the reference source |
| Start Date | When the policy is supposed to start |
| End Date | When the policy is expected to end (if announced). Blank if unknown. |

## 2.3. Calculated Variables

To facilitate international comparisons of the policies announced, we re-express all nominal values in millions of LCU, millions of USD, and as a percentage of GDP in 2018 (the last available year for most countries).

Table 3 list the set of variables that are calculated from the original data collected by the team.

**Table 3: Calculated Variables**

| Variable | Explanation |
|---|---|
| Amount_Millions_LCU | We use the Unit variable to re-express the amount in millions. If the announcement was made in USD, we divide it by the Nominal Exchange Rate (defined as USD per unit of LCU). |
| Amount_Millions_USD | We use the Unit variable to re-express the amount in millions. If the announcement is made in LCU, we multiply it by the Nominal Exchange Rate (defined as USD per unit of LCU). |
| Percent_GDP_2018 | We divide Amount_Millions_USD / Million of USD GDP 2018. |

This process is automated and used external data sources to complement our data collection. The GDP in current USD for 2018 is sourced from the World Bank. The country classification into Developed or Developing is from the UN Conference of Trade and Development (UNCTAD). Exchange rates are obtained from Alphavantage, a company created by Steve Zheng (HBS '18) and Olivier Porte (HBS'18). Their free data API is available at https://www.alphavantage.co/

## 2.4. Data Limitations

The project does not cover every country in the world, so many statistics and comparisons are meant to be interpreted within the sample of countries tracked.

Once we add a country to the tracker, we strive to include all the announced policies that fit the definitions in Table 1, but there can be delays and unintended omissions.

## 2.5. Data Collection Team

This project is possible thanks to the work of students from HBS and other Harvard Schools who contribute their time and to collect and standardize the policies across countries.

The data collection team (at the time of writing) includes Alex DeVille, Angel Rodriguez, Anna Sakellariadis, Bhumika Agarwalla, Camille Gregory, Dvij Bajpai, Enrique Elias, Eufern Pan, Joaquin de la Maza, John Guo, Joyce Zhang, Lau Skovgaard, Marcia Ambrosi, Margherita Pignatelli, Ratnika Prasad, Rei Morimoto, Rohan Vora, Roni Luo, Ruth van Montfort, Ryan Yu, Soichiro Chiba, Sophia Lien, Ukasha Iqbal, Umang Sota.  Additional contributors are who have joined the team after this working paper was written can be found on the website.

Every member of the team is assigned to cover a set of countries and document the policies according to the methodology described in sections 2.1 and 2.2. There is some scope for differences on the way policies are divided into multiple rows, depending on the availability of data.

# 3. RESULTS AND VISUALIZATIONS

## 3.1. Policy Database Download

The policy tracker database is updated in real-time. We try to update policies within a week of their announcement in each country. New policies can be added to the database at any time. The data files are automatically processed and cleaned several times during the day.

Our data is available under the Creative Commons Attribution-NonCommercial 4.0 International License.

## 3.2. Summary Statistics Table

We publish a summary table to facilitate cross-country comparisons. We include aggregate totals and binary indicators by policy types and subtypes. This is updated in real-time with the information included in the database.

## 3.3. Visualizations

We use the data to create some visualizations that can be shared and embedded on the web using Tableau Public. These visualizations are updated automatically by sourcing the data from a public google spreadsheet.

Figure 1 shows which countries have announced the largest fiscal packages as a share of their GDP.

**Figure 1: Fiscal Policy Map**

Covid-19 Fiscal Policy Announcements (% of GDP)
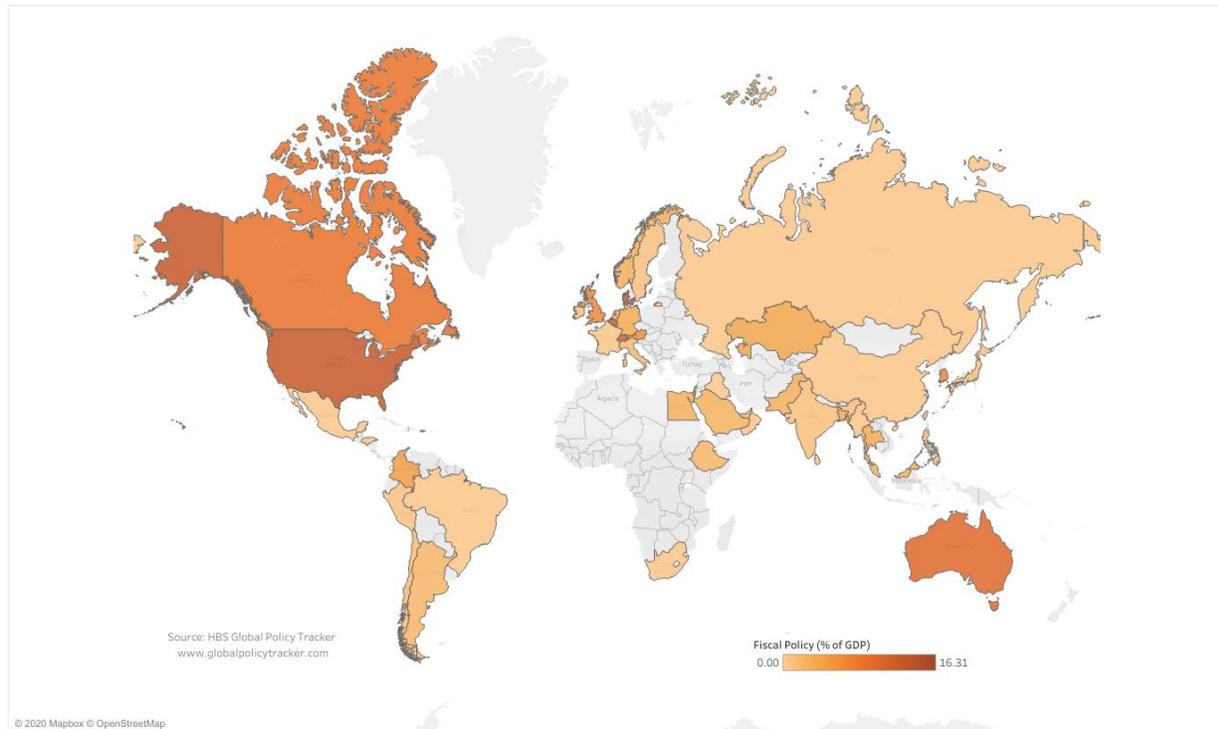


This map shows a striking difference between the fiscal announcements of developed and developing countries. To highlight this, we compute the average fiscal policy (as a % of GDP) for both groups of countries using the UNCTAD classification. On average, the fiscal announcements as a share of GDP are twice as high in developed countries.

## Figure 2: Fiscal Announcements by Type of Economy

Average Fiscal Policy Announcement by Type of Economy (% of GDP)
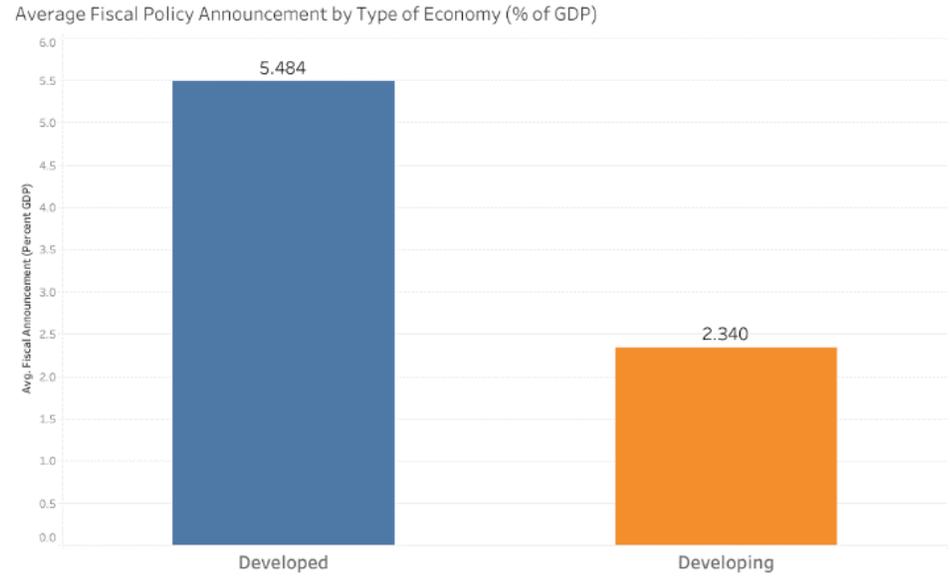


The fiscal packages in developing countries are likely limited by the inability to finance them with debt, a constraint that has been exacerbated by massive capital outflows during the Pandemic.

In Figure 3 we provide a visualization for the lockdowns over time, by counting the number of countries with partial and full lockdowns every day.

## Figure 3: Lockdowns



Countries with Lockdowns
(Out of 47 countries tracked)
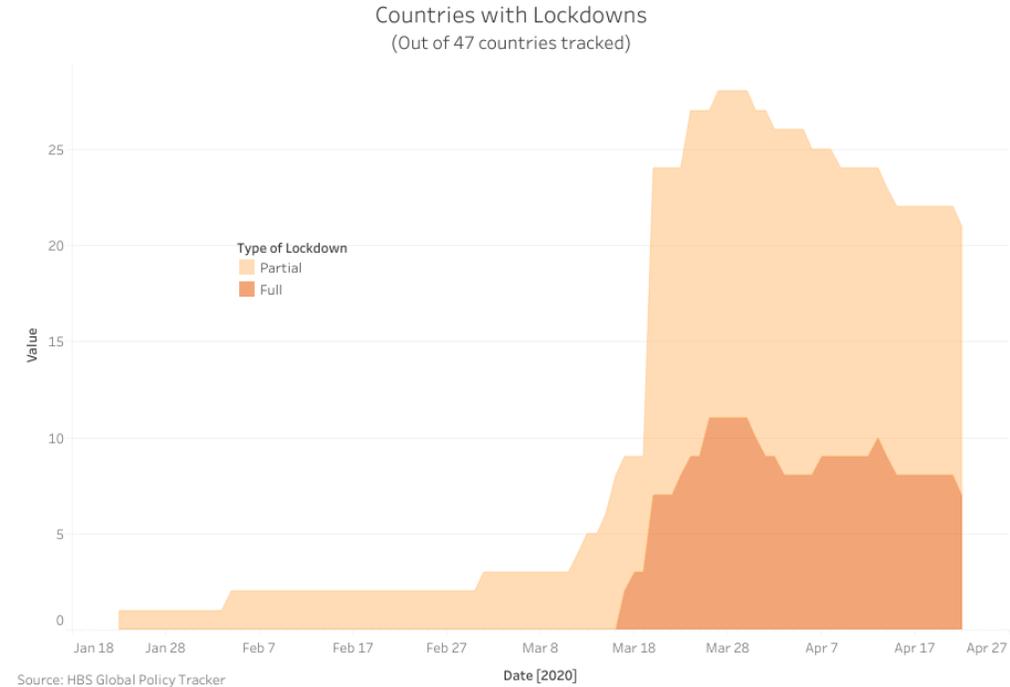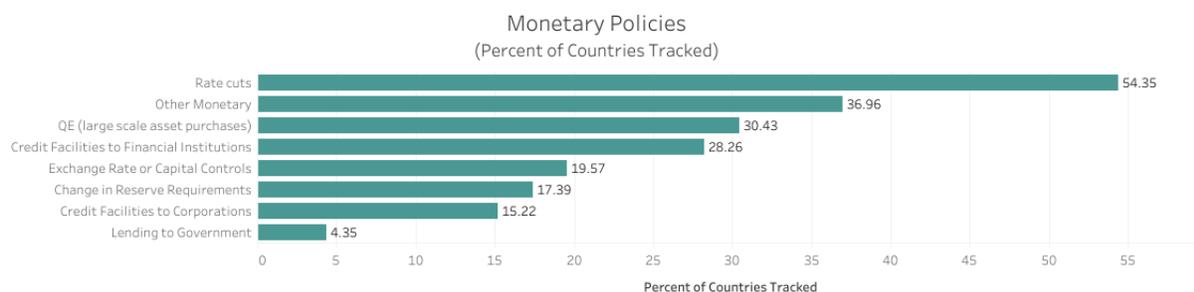
Source: HBS Global Policy Tracker

Figure 3 shows how the lockdowns peaked in early April, and the majority were partial restrictions. Lockdowns in developing countries tended to be more strictly enforced. By mid-April, full lockdowns were 57% of the total in developing countries, and 45% of those in developed countries.

For monetary policy, in Figure 4 we show that the most frequent type is the use of traditional rate cuts, which is present in 55% of the countries we track. This is followed by "Other Monetary" (policies that are not easy to classify into homogeneous categories), quantitative easing, and the use of credit facilities to financial institutions. The least popular policy is to announce direct lending to governments, which has been announced, for example, by the Bank of England.

**Figure 4: The Frequency of Monetary Policies**

Monetary Policies
(Percent of Countries Tracked)

| Policy | Percent |
|---|---|
| Rate cuts | 54.35 |
| Other Monetary | 36.96 |
| QE (large scale asset purchases) | 30.43 |
| Credit Facilities to Financial Institutions | 28.26 |
| Exchange Rate or Capital Controls | 19.57 |
| Change in Reserve Requirements | 17.39 |
| Credit Facilities to Corporations | 15.22 |
| Lending to Government | 4.35 |

Percent of Countries Tracked

Source: HBS Global Policy Tracker

# 4. CONCLUSION

The Pandemic has led to governments announcing an unprecedented number of policies intended to limit the health crisis and mitigate its effects on the economy. In the months and years to come, economists and other social scientists will make cross-country comparisons of these policies and their associated outcomes. With the HBS Global Policy Tracker, we hope to help those efforts by standardizing and quantifying policies being announced and implemented around the world.

Our initial results suggest a sticking difference in the magnitude of the fiscal policy announcements between developed and developing countries. Monetary policies share some commonalities, with most countries announcing rate cuts. There are, however, some important differences in terms of the popularity of less traditional policy tools. Lockdowns are more intense in developing countries, but the differences are not so large at this time.

We will continue to update the tracker database on a weekly basis during the Pandemic, gradually incorporating more countries and types of policies. We encourage anyone to submit new policies to add to the tracker using the form provided on our website. In addition, users can report errors and omissions via email at globalpolicytracker@gmail.com.