THE FISCAL POLICY RESPONSE TO THE PANDEMIC
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ONLINE APPENDIX

Estimates of Early Fiscal Packages in Advanced Economies

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A. Overview and Sources

Our goal is to provide a relatively consistent and accurate measure of the early fiscal policy response to the Covid-19 pandemic for major advanced economies. The main challenge in constructing the measure is that headline numbers for fiscal responses often combine conventional fiscal stimulus (legislated tax reductions and increases in government spending), which have a net impact on the deficit, with deferrals of tax payments and other payment obligations to the government, liquidity provision, and loan guarantees, which may not. For example, according to Anderson et al. (2020), Belgium's total early response was 28.1 percent of GDP. But only 1.4 percentage points of this was conventional fiscal stimulus; 4.8 percentage points was payment deferrals (for example, allowing businesses to delay some tax payments), and 21.9 percentage points was the total amount of loans that could potentially be supported by a guarantee program (where losses would be shared between lenders and the government). For Denmark, in contrast, Anderson et al. report a total response of 16.8 percent of GDP, of which 5.5 percentage points was conventional fiscal stimulus. Thus, looking at the total response can provide a very distorted measure of conventional fiscal actions. Because conventional fiscal actions may have very different effects than tax deferrals or loan guarantees, it is useful to keep the two types separate.

We focus on countries' early responses to the crisis for two reasons. The less important one is simply that data are more readily available for early responses. The more important one is that initially all countries faced a major threat from the pandemic, but over time the actual path of the pandemic diverged greatly across countries. Thus, the early responses were likely driven more by fundamentals, such as fiscal space and the effectiveness of government, and less by actual macroeconomic conditions and the course of the virus in the country relative to the later actions. Concretely, we focus on responses legislated or otherwise adopted (but not necessarily fully implemented) through July 31, 2020. Choosing a cut-off date one month earlier or later would not have a large impact on our measure. We measure responses as a fraction of 2019 GDP.

Our sample is the 30 members of the Organisation for Economic Co-Operation and Development (OECD) as of 2000. Keeping the sample small allows us to examine detailed information about each country's fiscal policy response to the pandemic, and so obtain more accurate estimates of their conventional fiscal actions. Our sample includes almost all high-income countries other than ones that have extremely small populations (such as San Marino and Liechtenstein) and ones that are heavily dependent on oil exports (such as Qatar and the United Arab Emirates). The most notable omissions are Singapore, Taiwan, and Israel. Limiting the sample to the 30 OECD members as of 2000 rather than including a few additional countries has the advantages of providing a simple rule for what countries to consider and making it easier to compare the results with those for countries' fiscal responses to financial crises that we find in Romer and Romer (2019), which uses the 30-country sample.

We examine a wide range of sources. Anderson et al. (2020) provide a careful, well documented breakdown of countries' fiscal actions early in the pandemic into "Immediate fiscal impulse," "Deferral," and "Other liquidity/guarantee" for eleven countries in our sample. We put considerable weight on their "Immediate fiscal impulse" figures for those countries. Both the International Monetary Fund (IMF) (2020) and the OECD (2020) provide comprehensive country-by-country information about fiscal responses to the pandemic, although the level of detail and the extent of the breakdown into conventional stimulus and other actions varies considerably across countries. We rely heavily on both sources, especially for countries not covered by Anderson et al. In cases where there is substantial disagreement or lack of clarity in these sources, we also examine FitchRatings (Fitch) *Rating Action Commentaries* and other reports, Economist Intelligence Unit (EIU) *Country Reports* and other reports, and documents from home country governments and news sources as needed when they are available.

Benmelech and Tzur-Ilan (2020) and Elgin, Basbug, and Yalaman (2020, with updates available at http://www.ceyhunelgin.com/) also assemble data on the fiscal response to the pandemic by country. Relative to our dataset, Benmelech and Tzur-Ilan's covers considerably more countries, but relies on only two sources (the IMF and the OECD) and combines conventional stimulus and payment deferrals. Because of these differences (especially their inclusion of payment deferrals), their measure differs considerably from ours for most of the countries that appear in both datasets. Elgin, Basbug, and Yalaman also cover many more countries than we do, but they rely primarily on the IMF and provide relatively little information about their precise criteria for measuring fiscal stimulus. Their measure is generally much higher than ours (in the case of Japan, by almost 50 percent of GDP), suggesting that they take an expansive view of what constitutes fiscal stimulus.

The remainder of this appendix consist of descriptions of how we obtain our measure for each country in our sample.

B. Country-by-Country Documentation

***Australia*: 9.2%.**

Our sources agree that Australia's deliberate fiscal stimulus was substantial. The IMF describes conventional stimulus at the national level of AUD164 billion plus an additional AUD9.4 billion, and conventional stimulus at the level of states and territories of AUD32.9 billion. This corresponds to 10.3 percent of 2019 GDP. The OECD gives figure of AUD134 billion at the national level and AUD30 billion at the level of states and territories, which comes to 8.0 percent of 2019 GDP. One Fitch report cites AUD194 billion at the national level and AUD12 billion at the subnational level, for a total of 10.3 percent of 2019 GDP ("Fitch Revises Australia's Outlook to Negative, Affirms Rating at 'AAA'," May 21, 2020), while a later one gives an overall figure of AUD172 billion, or 8.6 percent of 2019 GDP ("Australia's Post-Crisis Debt Trajectory Key to Rating Outlook," July 23, 2020).

As discussed above, we generally prefer estimates from the IMF and the OECD to those from Fitch. The IMF and OECD estimates are not far apart, and there is no clear reason to prefer one to the other. We therefore average the two, which gives an estimate of 9.2 percent of 2019 GDP. This is extremely close to the average of the two estimates from Fitch.

***Austria*: 7.8%.**

The IMF reports a figure of €50 billion for the total amount of Austria's deliberate fiscal measures (an initial €38 billion and a subsequent increase to €50 billion in mid-June), but reports that €9 billion of this represented guarantees and €10 billion represented payment deferrals. Thus its figures point to conventional stimulus of €31 billion, or 7.8 percent of 2019 GDP.

The OECD is considerably less clear than the IMF. It cites the same figures of €50 billion for the overall "budget envelope," €9 billion for guarantees, and €10 billion for postponements. However, it describes the actual measures that had been taken (including the guarantees and postponements) as coming to only 10 percent of GDP (which would correspond to roughly €40 billion), plus later amounts of €6 billion and €0.5 billion. This would suggest total stimulus of €26.5 billion (€46.5 billion minus €19 billion), or 6.6 percent of 2019 GDP. However, it appears that this figure does not include spending that was planned but had not yet taken place, which is not consistent with how we treat other countries.

A Fitch report cites measures summing to 3.9 percent of GDP ("Fitch Revises Austria's Outlook to Stable; Affirms at 'AA+'," May 15, 2020). However, the report predates measures amounting to 3 percent of GDP announced on June 16, 2020. Thus, the Fitch estimate points to overall stimulus of roughly 6.9 percent of 2019 GDP.

The IMF estimates are clearer than the OECD's and appear to correspond more closely to the concept we are trying to measure. They are also more comprehensive than those from Fitch. We therefore use the IMF estimate of 7.8 percent of 2019 GDP. In any event, that figure is not far off from the OECD's or from the one implied by Fitch.

***Belgium*: 1.4%.**

Anderson et al. give a figure of 1.4 percent of 2019 GDP for Belgium's direct fiscal stimulus, including actions taken at the regional level. The IMF gives a figure of 3.5 percent, but this includes some postponements of private-sector tax payments to the government. The OECD does not provide a bottom line number; the specific items for which it provides figures come to only 0.3 percent of 2019 GDP. Finally, early in the crisis, Fitch gives a range of 1.7 to 2.1 percent of 2019 GDP ("Fitch Revises Belgium's Outlook to Negative; Affirms at 'AA–'," April 3, 2020). But it does not clearly distinguish between conventional stimulus and other measures; moreover, it cites the IMF as the source of these estimates, suggesting that they include some postponements.

All of these figures suggest that the conventional stimulus was small. Since Anderson et al. is the only source to provide an estimate that is clearly for conventional stimulus and their number is not very different from what is implied by the other sources, we use their figure.

One slight complication with Anderson et al.'s figure is that the sum of the headline figures for conventional stimulus they give for the national government and each of the regional governments comes to only 0.9 percent of 2019 GDP. However, if we use the sum of the individual measures they cite for the Flemish region in place of their headline number for that region, we obtain 1.4 percent of 2019 GDP for the overall conventional stimulus. Thus it appears that their headline number for the response of the Flemish region is simply an error. In any event, the difference between 0.9 percent and 1.4 percent is small relative to the variation across the countries in our sample.

***Canada*: 10.1%.**

The clearest discussion of Canada's fiscal response to the pandemic comes from the IMF. It reports total stimulus of C$317 billion, of which C$85 billion took the form of "liquidity support through tax deferrals." This points to conventional stimulus of C$232 billion, or 10.1 percent of 2019 GDP. The OECD describes various aspects of the fiscal response, but does not provide anything close to a bottom line. And Fitch implies stimulus at the national level of 12.8 percent of GDP, though it is not very clear about precisely what this includes, plus some additional stimulus at the provincial level that appears to be small ("Fitch Downgrades Canada's Ratings to 'AA+'; Outlook Stable," June 24, 2020). Because the IMF is one of our preferred sources and provides the clearest analysis, we use its estimate of 10.1 percent of 2019 GDP.

***Czech Republic*: 4.3%.**

The IMF gives a figure of 4.2 percent of 2019 GDP for the Czech Republic's fiscal response, and all but a few small items it lists are conventional stimulus. The OECD gives a figure of 4.4 percent of 2019 GDP for "[d]irect budget support" (which it distinguishes from "deferred taxes and levies" and "liquidity support and guarantees"). Since both estimates are credible and they are very similar, we average the two to obtain a figure of 4.3 percent. This figure is broadly in line with the estimate from Fitch of 3.3 percent of GDP for increases in discretionary government spending and 1.8 percent of GDP for tax cuts ("Fitch Affirms Czech Republic at 'AA–'; Outlook Stable," July 24, 2020).

***Denmark*: 5.5%.**

Anderson et al. provide a figure of 5.5 percent of 2019 for Denmark's "Immediate fiscal impulse." The IMF gives a very similar figure of 5.7 percent of 2019 GDP, although in contrast to Anderson et al. it does not state unambiguously that its figure excludes deferrals and postponements.

The OECD appears to suggest that stimulus was considerably larger. It reports that the measures adopted "as of 5 May" amounted to 4.8 percent of 2019 GDP, and then goes on describe later measures that sum to least 3.9 percent of GDP. But in light of the very large discrepancy between this estimate and those of Anderson et al. and the IMF, it seems likely either that the OECD figures include some actions that are not conventional stimulus or that the "as of 5 May" qualifier is an error. We therefore focus on the estimates from Anderson et al. and the IMF. Because the estimate from Anderson et al. is carefully documented and is explicit that it excludes postponements and deferrals, we use their figure of 5.5 percent of 2019 GDP.

One slight complication in this assessment is that one significant portion of the stimulus (2.6 percent of 2019 GDP according to Anderson et al.; 1.7 percent according to the OECD) took the form of an advancement of the date when workers were paid what the OECD describes as some of their "mandatory employee savings from the system of holiday pay" (see https://www.thelocal.dk/20200813/explained-denmarks-frozen-holiday-pay-how-does-it-work-and-what-are-the-problems-with-payouts for a fuller description). On the one hand, this was merely a rearrangement of the timing of payments to workers. On the other, the change in timing was large—workers obtained the funds in 2020 rather than on retirement—and so could well have had effects similar to conventional stimulus. Since the only two sources to explicitly discuss this measure (Anderson et al. and the OECD) classify it as stimulus, we follow their classification and include it in our estimate.

***Finland*: 3.7%.**

The OECD provides the clearest discussion of Finland's stimulus, saying, "The government announced fiscal measures totalling around EUR 24.5 billion …, EUR 9.2 billion of which … will increase the budget deficit, mostly in 2020." €9.2 billion corresponds to 3.8 percent of 2019 GDP. The IMF's discussion is considerably more convoluted, but appears to point to a similar bottom line. It starts by referring to "[k]ey discretionary tax and spending measures (close to 3 percent of GDP)." However, one item it lists under this heading is a change in pension contributions that was a postponement rather than conventional stimulus (see https://www.europeanpensions.net/ep/Finland-lowers-employer-pension-contributions-by-2pc.php). Removing this piece reduces the total by €1.05 billion (or 0.436 percent of 2019 GDP). The IMF then goes on to list a range of other actions that, from the context, are fairly clearly not included in the initial 3 percent of GDP figure. Adding the components of these other actions that are conventional stimulus yields an estimate of additional stimulus of €2.339 billion (€1.2 billion plus €1 billion plus €0.123 billion plus €0.016 billion), or 0.972 percent of 2019 GDP. Thus the IMF points to total conventional stimulus of around 3.5 percent of 2019 GDP.

The EIU says, "Overall, the direct government spending is likely to amount to about 3% of GDP," but the numbers it gives add to 3.0 percent of 2019 GDP of conventional stimulus in 2020 and an additional 0.4 percent in each of 2021 and 2022 (Country Report, Finland, August 2020). Fitch, on the other hand, gives a figure of 2.5 percent of 2019 GDP ("Fitch Affirms Finland at 'AA+', Outlook Stable," June 26, 2020).

These estimates are all broadly in the same range, although Fitch's is obviously somewhat lower than the others. Since we prefer to put more weight on the OECD's and IMF's estimates than on the EIU's and Fitch's, we average the OECD and IMF figures. This yields an estimate of 3.7 percent of 2019 GDP.

***France*: 4.4%.**

Anderson et al. report a figure of 4.4 percent of 2019 for France's "Immediate fiscal impulse." Two other sources give estimates that are broadly consistent with this. First, the IMF gives a figure of €100 billion, which is 4.5 percent of 2019 GDP. However, it states that this includes some "liquidity measures" (such as "postponements of social security and tax payments for companies and accelerated refund of tax credits"); thus it may overstate the amount of conventional stimulus. Second, Fitch reports that "[d]irect fiscal measures" in France were 4.5 percent of GDP ("Coronavirus Fiscal Easing Announcements Exceed 7% of World GDP," June 3, 2020).

The OECD, in contrast, gives a much lower figure of 0.7 percent of 2019 GDP. We are skeptical of the estimate both because it is so far out of line with the others and because the OECD says it is as "officially estimated (as of 3 April)," which is very early in the process. One specific area where the timing issue is important is the cost of the short-time work scheme: the OECD uses a figure of €8.5 billion (0.4 percent of 2019 GDP), but this was an initial estimate that was revised to €24 billion (1.0 percent of 2019 GDP) soon after the April 3 date used by the OECD (see https://www.piie.com/publications/policy-briefs/when-more-delivers-less-comparing-us-and-french-covid-19-crisis-responses).

Because we view the Anderson et al. figures as being of high quality and their estimate for France aligns with all but one of the others, we use their figure of 4.4 percent of 2019 GDP.

***Germany*: 9.1%.**

Anderson et al. give a figure of 8.3 percent of 2019 GDP for Germany's direct fiscal stimulus, including actions taken at the state level. However, this excludes fiscal stimulus measures of 0.8 percent of GDP adopted early in the pandemic that were not scheduled to take effect until 2021. Thus their analysis points to a figure of 9.1 percent of GDP.

The IMF lists packages of 4.5 percent of 2019 GDP adopted in March and 3.8 percent of 2019 GDP adopted in June, plus measures amounting to 4.1 percent of GDP adopted by sub-national governments. However, the IMF includes "interest-free tax deferrals" and "expanded credit guarantees for exporters and export-financing banks" in these totals. Thus, its evidence suggests a figure somewhat below 12.4 percent of 2019 GDP.

The OECD lists two packages that total 8.3 percent of 2019 GDP, and mentions several actions that appear small but for which it does not provide precise numbers. Thus, its analysis implies a stimulus above 8.3 percent of GDP, but perhaps only slightly so.

These estimates are all in the same general area. Since only Anderson et al. provide an exact number and their estimate is bracketed by those of the IMF and the OECD, we use their figure of 9.1 percent of 2019 GDP. This figure is also broadly in line with the estimate from Fitch of roughly 8 percent of GDP ("Coronavirus Fiscal Easing Announcements Exceed 7% of World GDP," June 3, 2020).

***Greece*: 3.1%.**

Our only two sources that give fairly clear figures for Greece's conventional fiscal stimulus are Anderson et al. and Fitch. Anderson et al. report a figure of 3.1 percent of 2019 GDP for Greece's "Immediate fiscal impulse," while Fitch says, "We estimate that deficit-increasing fiscal measures this year directly account for around 6% of GDP" ("Fitch Affirms Greece at 'BB'; Outlook Stable," July 24, 2020). However, an earlier report from Fitch shows that it includes "tax deferrals" in its estimate ("Fitch Revises Outlook on Greece to Stable; Affirms at 'BB'," April 23, 2020), and the documentation in Anderson et al. shows that deferrals and postponements were expected to raise the deficit in 2020 but lower it in 2021. The Anderson et al. estimate therefore better captures what we are trying to measure.

The information in the other sources is broadly consistent with Anderson et al.'s figure. The OECD does not provide a bottom line number for the overall stimulus, but the numbers it provides for specific items do not point to overall stimulus very different from the Anderson et al. number. The IMF gives a figure of 12.8 percent of 2019 GDP, but this includes loan guarantees and payment deferrals, and so provides little information about the amount of conventional stimulus. The most informative statement from the EIU is, "we expect real GDP to contract by at least 6% this year, contributing, along with pandemic-response measures, to a sharp swing in the budget balance from a small surplus in 2019 to a deficit of at least 5% of GDP this year" ("Government Shifts Economic Focus from Relief to Stimulus," May 28, 2020). Since the sharp fall in GDP was surely expected to contribute significantly to the rise in the deficit, this statement seems inconsistent with conventional stimulus being much greater than Anderson's et al.'s figure of 3.1 percent of 2019 GDP.

Anderson et al.'s estimates are of high quality; they are our only source to both provide a clear bottom line for Greece and focus on Greece's conventional stimulus; and the evidence from our other sources is generally supportive of their figure. We therefore use their figure of 3.1 percent of 2019 GDP.

<u>Hungary:</u> 1.3%.

Hungary's fiscal response to the pandemic was complicated, and neither the amounts of the various actions nor the extent to which they represented actual stimulus are very clear. As a result, it is difficult to estimate the amount of Hungary's conventional fiscal stimulus with much precision. However, the evidence indicates strongly that the overall amount was modest.

The clearest evidence that the overall stimulus was small is that observers expected the movement in the *actual* deficit to be no more than moderate. The OECD reports that the 2020 deficit was originally projected to be 1 percent of GDP, as does the EIU ("Government Rolls Out Economic Relief to Mixed Reception," April 9, 2020). The EIU expected the actual figure to be 5.1 percent of GDP ("Government Eyes Return to Normal in 2021 Budget Draft," June 1, 2020), and Fitch expected it to be 5.8 percent ("Fitch Affirms Hungary at 'BBB'; Outlook Stable," August 14, 2020). Both estimates came after the last notable fiscal responses described in our sources (the OECD gives a figure of 3.8 percent for expectations of the actual deficit, but this predates some fiscal actions). Some of the change in the actual deficit relative to what was initially expected would have resulted from lower tax revenues because of lower economic activity and from measures the government took to defer some personal and business tax payments. Moreover, our sources do not describe any measures that would have provided substantial stimulus beyond 2020. As a result, the movement in the actual deficit almost certainly overstates the amount of deliberate conventional fiscal stimulus, probably substantially so. This suggests that a very generous upper bound on the size of the stimulus is between 4.1 and 4.8 percent of GDP.

In terms of actual measures, Anderson et al. give a figure of just 0.4 percent of GDP for the "Immediate fiscal impulse." Unfortunately, however, their information for Hungary is only updated through March 25, 2020, and our other sources describe important measures that were adopted later. The only other number for the overall "fiscal package" is 4.6 percent of GDP from the OECD. However, the OECD's discussion makes clear that this includes only spending increases and tax cuts, and does not subtract the portions of these measures that were financed through reductions in spending in other areas and some tax increases.

The EIU describes financing of the fiscal response to the pandemic from tax increases and spending cuts totaling 3.1 percent of 2019 GDP (the EIU cites figures of Ft245 billion, Ft256 billion, Ft34 billion, and Ft923 billion, for a total of Ft1.458 trillion, which is 3.1 percent of 2019 GDP). And it cites only 0.8 percent of 2019 GDP (Ft 378 billion) of stimulus that clearly represented net stimulus (from the use of the country's reserve fund; the OECD describes this as "up to 1% of GDP," which is similar). (The EIU information is from "Government Rolls Out Economic Relief to Mixed Reception," April 9, 2020, and "Government Eyes Return to Normal in 2021 Budget Draft," June 1, 2020.) Subtracting the 3.1 percent of GDP from the OECD's headline figure of 4.6 percent gives 1.5 percent of GDP. Alternatively, adding the 0.4 percent of GDP from Anderson et al.'s early figure and the 0.8 percent from the later use of reserve funds gives 1.2 percent of GDP. Since both estimates seem credible and they are similar, we average them. This gives a figure of 1.3 percent of 2019 GDP. Note that a gap of 2.8 to 3.5 percentage points between the change in expectations of the actual deficit and the direct fiscal stimulus is reasonable in light of the very large downward revisions in expected GDP growth.

***<u>Iceland</u>*: 4.4%.**

Most of our sources provide little quantitative information about Iceland's conventional fiscal stimulus. Iceland is not in Anderson et al.'s sample. The IMF does not provide any numbers for the size of the stimulus. However, it does provide links to the government's announcements of its three major fiscal packages. The headline amount of the first package is ISK237 billion, but the only part of this that appears to be conventional stimulus is ISK69 billion of increased public spending, or 2.3 percent of 2019 GDP (https://www.government.is/topics/economic-affairs-and-public-finances/measures-in-response-to-covid19/). The headline amount of the second package is described as 2.0 percent of GDP, but it clearly consists of a mix of conventional stimulus and other measures, and no breakdown is provided (https://www.government.is/news/article/2020/04/21/Government-of-Iceland-Announces-Second-Phase-of-Economic-Response-Package-to-the-COVID-19-Crisis/). The third package appears to have had a nontrivial amount of conventional stimulus, but the government's announcement does not provide quantitative information (the IMF's link is to a page that is in Icelandic; the English version is at https://www.government.is/news/article/2020/04/28/Government-of-Iceland-announces-increased-support-for-companies-and-extension-of-part-time-unemployment-benefits/). Thus all one can confidently say from the information provided by the IMF is that the stimulus was at least 2.3 percent of 2019 GDP.

For Iceland, the OECD is an even less useful source of information than the IMF, and the EIU does not provide any additional information (Country Report, Iceland, 3rd Quarter 2020). Fortunately, a report from Fitch provides more information ("Fitch Revises Iceland's Outlook to Negative; Affirms at 'A'," May 22, 2020). It states, "The government announced stimulus measures amounting to ISK129.4 billion" (which is 4.4 percent of 2019 GDP). It cites items from the third package (salary subsidies and an extension of wage subsidies for part-time workers) that are clearly conventional stimulus and that come to roughly 1.5 percent of GDP. Adding these to the lower bound of 2.3 percent from the sources cited above implies that the conventional stimulus was at least 3.8 percent of GDP. Since Fitch's headline number is 4.4 percent of 2019 GDP, it clearly includes little, if any, postponements and liquidity provision. Moreover, the Fitch report mentions tax deferrals separately, providing direct evidence that the ISK129.4 billion figure is intended as an estimate of conventional stimulus. We therefore use that figure.

***Ireland*: 4.9%.**

The IMF gives a figure of €24.5 billion for Ireland's overall fiscal actions. However, it reports that €4 billion of this took the form of credit support, and that most or all of an additional €2.9 billion took the form of tax deferrals. This points to conventional stimulus of roughly €17.6 billion, or 4.9 percent of 2019 GDP.

The OECD describes several stimulus measures that sum to €8.89 billion, or 2.5 percent of 2019 GDP. However, it lists numerous items for which it does not provide any quantitative estimates. Thus its information only suggests that 2.5 percent of 2019 GDP is a lower bound on conventional stimulus.

Fitch echoes the IMF by citing a figure of €20.5 billion, which it describes as "direct government support" (Fitch Affirms Ireland at 'A+'; Outlook Stable," August 28, 2020). However, the IMF is very clear that not all of this was conventional stimulus.

The IMF is one of our most preferred sources, and it clearly comes the closest of our sources to estimating conventional fiscal stimulus. We therefore use its figure of 4.9 percent of 2019 GDP.

***Italy*: 3.4%.**

Anderson et al. cite a figure of €61.3 billion, or 3.4 percent of 2019 GDP, for Italy's "Immediate fiscal impulse." The IMF describes measures totaling €31.3 billion (1.8 percent of 2019 GDP) that are clearly conventional stimulus, plus an additional €22.4 billion (1.3 percent of

2019 GDP) that are an unclear mix of postponements and conventional stimulus. The more detailed itemized list from Anderson et al. suggests that most of this €22.4 billion was conventional stimulus. Thus the IMF estimates point to a figure slightly below 3.1 percent of 2019 GDP.

Similarly to these sources, Fitch cites a figure for the total cost of the government's fiscal measures in 2020 of €55 billion, or 3.1 percent of 2019 GDP, the vast majority of which took the form of expenditure increases rather than tax cuts ("Fitch Affirms Italy at 'BBB–'; Outlook Stable," July 10, 2020). Since Anderson et al. list some small measures that would carry over to 2021, Fitch's figure points to overall stimulus slightly above 3.1 percent of 2019 GDP.

In contrast to the other sources, the OECD gives a figure of just €20 billion, or 1.1 percent of 2019 GDP, for Italy's stimulus. In light of the unanimity of the other sources and the specifics they describe, the OECD's estimate does not seem credible. Because Anderson et al.'s estimate is the most specific and corresponds most clearly with the concept we are interested in, we use their figure of 3.4 percent of 2019 GDP.

***Japan*: 7.5%.**

It is difficult to assess the exact size of Japan's conventional stimulus. The basic difficulties are that the gap between the headline amounts and the conventional stimulus was very large and that Japan's budgetary process is opaque.

The evidence, however, makes clear that Japan's conventional stimulus was substantial. First, both the IMF and the EIU cite a headline figure of ¥234 trillion, or 42.3 percent of 2019 GDP, for Japan's fiscal response. However, the IMF makes clear that this figure includes large amounts of postponements and credit support, and the EIU states that "fresh spending through supplementary budgets only accounts for around one-quarter of the stimulus package" (and neither the EIU nor the IMF highlight any major tax cuts), suggesting stimulus of roughly 10.6 percent of 2019 GDP. (The EIU report is "Japan Steps up Stimulus," June 10, 2020.) A later EIU report puts Japan's stimulus at 10.4 percent of 2019 GDP ("Japan and South Korea Look to Post-Fiscal Bonanza Recovery," August 11, 2020).

Second, the swing in the actual budget deficit from 2019 to 2020 was in the vicinity of 10 percent of GDP. Fitch is unclear on whether the swing was 11.2 percent or 13.4 percent, while the EIU puts it at 8.8 percent ("Fitch Revises Outlook on Japan to Negative; Affirms at 'A'," July 28, 2020; Country Report, Japan, August 2020). Since automatic stabilizers surely had a substantial effect on the deficit, this points to stimulus of somewhat less than 10 percent of 2019 GDP.

Perhaps the most useful source of information is documents directly from the Ministry of Finance. Japan's fiscal response to the pandemic occurred through two supplementary budgets. The headline amount of the first was ¥25,565.5 billion, but ¥3861.6 billion of this took the form of "[l]iquidity supports" ("Overview of the Supplementary Budget for FY2020," April 7, 2020, updated April 20, 2020). The headline amount of the second was ¥31,817.1 billion, but ¥11,843.5 billion of this consisted of loans and capital injections ("Overview of the Second Supplementary Budget for FY2020," May 27, 2020). These figures point to overall conventional stimulus of ¥41,707.5 billion, or 7.5 percent of 2019 GDP. This estimate is somewhat, but not dramatically, lower than what is suggested by the less precise estimates from the EIU, and it is not at all out of line with what one would expect in light of the change in the overall deficit. We therefore use it as our figure for Japan's conventional stimulus.

***Korea (South)*: 3.2%.**

Our two sources that provide by far the clearest discussion of Korea's fiscal policy response to the pandemic are the IMF and the OECD. The IMF lists a series of measures that sum to KRW61.1 trillion, or 3.2 percent of 2019 GDP. However, the IMF states that one small package in this list (amounting to 0.6 percent of 2019 GDP) includes some loans and guarantees, suggesting that 3.2 percent of 2019 GDP may be a slight overestimate.

The OECD describes KRW61.1 trillion of measures that appear to constitute conventional fiscal stimulus. Its breakdown of the package that constitutes 0.6 percent of 2019 GDP, in contrast to the IMF's, makes no mention of any loan or guarantee components. Thus the OECD identifies 3.2 percent of 2019 GDP that it views as clear fiscal stimulus. It also mentions a package of KRW20 trillion (1.0 percent of 2019 GDP) adopted in February 2020 about which it provides few details and which is not mentioned in our other sources. However, a later OECD report shows that a large majority of this package consisted of credit and liquidity measures, and cites a figure of KRW59.2 trillion (3.1 percent of 2019 GDP) for the total budgetary impact of Korea's policy response (OECD Economic Surveys: Korea 2020).

Since both the IMF and our main OECD source agree on a figure of KRW61.1 trillion of stimulus, we use that estimate, which is 3.2 percent of 2019 GDP.

***Luxembourg*: 4.2%.**

The clearest discussion of Luxembourg's stimulus is provided by the IMF. It describes "[a] large fiscal package" with €2.3 billion of "spending measures" (which it distinguishes from "liquidity support"), and a later package of "up to €800 million." This suggests conventional stimulus of roughly €3.1 billion, or 4.9 percent of 2019 GDP.

The OECD lists the same two packages as the IMF, but it does not clearly separate conventional stimulus and other actions. The measures it describes that clearly constitute conventional stimulus sum to €1.8 billion, but its list does not appear to be intended to be comprehensive.

The other sources that provide information about Luxembourg's policy response are largely supportive of the IMF's analysis. An EIU report cites a figure of €3 billion for direct spending ("Luxembourg Eases out of Lockdown," June 17, 2020). Press releases from the government website (https://gouvernement.lu/fr/actualites/toutes_actualites.html) from March 25, 2020 and May 20, 2020 provide figures similar to the IMF's. In addition, the information from the government website suggests that additional measures announced on July 9, which the IMF mentions but does not provide any numbers for, were small—there are no notable announcements around that time.

The information from the other sources does not, however, support the IMF's classification of €0.4 billion (0.6 percent of 2019 GDP) of what it describes as "granting capital advances to cover companies' operating costs" as conventional stimulus rather than liquidity provision. The OECD describes these as "repayable advances," as does a document on the government website accompanying the March 25, 2020 policy announcement ("CORONAVIRUS COVID-19 // PROGRAMME DE STABILISATION DE L'ÉCONOMIE," March 25, 2020). In contrast, that document describes grants to very small firms as "nonrepayable financial aid," pointing to a clear difference between the funds for small and large firms. Moreover, the document puts both programs under the heading of "responding to immediate liquidity needs," further supporting the view that the funds to large firms were liquidity provision rather than general stimulus.

For the size of the first package, we therefore use €1.9 billion (€2.3 billion minus €0.4 billion). And for the second, we use €0.75 billion (the midpoint of the OECD's range of €0.7 billion to €0.8 billion, which matches the information on the government's website and is more precise than the IMF's figure of "up to" €0.8 billion). This gives a total of €2.65 billion, or 4.2 percent of 2019 GDP.

***Mexico*: 0.7%.**

Our sources are unanimous that Mexico's conventional fiscal stimulus was small. The IMF reports, "Overall, the above-the-line fiscal measures amount to 0.2 percent of GDP in health spending and 0.5 percent of GDP to support households and firms," suggesting stimulus of 0.7 percent of GDP. The OECD lists several measures that add to 1.4 percent of 2019 GDP, though by far the largest of these is a program to support energy producers that is described as being "up to" an amount equal to 1.0 percent of 2019 GDP. A Fitch report says, "Leaving aside measures to bring forward spending, the direct fiscal policy response has been relatively limited compared with other countries in the region." After describing some reallocation of spending and some measures to support lending, it says, "Congress has voted to set up a fund worth up to 0.7% of GDP to finance health spending" ("Fitch Downgrades Mexico to 'BBB–'; Outlook Stable," April 15, 2020). In August, the EIU said merely, "if the government were to belatedly introduce fiscal stimulus," suggesting that there had been little or no stimulus (Country Report, Mexico, August 2020). News articles also stress the absence of any substantial fiscal response (for example, https://www.internationaltaxreview.com/article/b1lzjrk8hfk2fm/mexico-stands-alone-in-its-tax-relief-response-to-covid-19 and https://www.latimes.com/world-nation/story/2020-05-13/mexico-poised-to-plunge-into-its-worse-recession-in-recent-memory-moves-to-reopen-parts-of-its-economy).

The OECD's description is not as clear as the others and is the highest by a noticeable margin. The IMF, in contrast, provides a clear bottom line and is very much in line with the other sources aside from the OECD. We therefore use its figure of 0.7 percent of GDP.

***Netherlands*: 5.5%.**

The most comprehensive estimates of the Netherlands' fiscal response to the crisis come from the OECD. Anderson et al. give a figure of 3.7 percent of 2019 GDP for the "Immediate fiscal impulse." However, that figure only goes through May 20, 2020, and the Netherlands adopted important additional measures on June 26, 2020. The IMF gives a figure of €36.6 billion (4.5 percent of 2019 GDP) for increased government spending, but is silent about any actions on the tax side. The OECD, in contrast, gives not only a figure of €37.148 billion for increased government expenditure (which is very similar to the IMF's €36.6 billion), but also lists tax cuts of €4.385 billion and an expected fiscal cost (and thus a transfer component) of the government's loan guarantees of €2.7 billion. These measures sum to €44.233 billion, or 5.5 percent of 2019 GDP. Because the OECD includes some actions omitted by the other sources that should be included in our measure and is otherwise consistent with the other sources, we use its figures. Thus our estimate of the Netherlands' conventional fiscal stimulus is 5.5 percent of 2019 GDP.

***New Zealand*: 11.5%.**

The sources that provide relatively clear discussions of New Zealand's policy response all point to conventional stimulus of somewhat over 10 percent of 2019 GDP. The IMF cites a headline figure of NZ$62.1, or 20.5 percent of 2019 GDP. However, it is clear that this figure includes substantial amounts of postponements and guarantees. The items it lists that clearly correspond to conventional stimulus sum to 10.9 percent of GDP.

The OECD cites a total of NZ$22.1 billion of fiscal measures, of which NZ$3.1 took the form of tax deferrals, plus later measures of NZ$15.9 billion. This suggests total conventional stimulus of NZ$34.9 billion, which is 11.5 percent of 2019 GDP.

Finally, a document from the New Zealand Treasury cites an initial NZ$12.1 billion of actions and a later NZ$36 billion, for a total of NZ$48.1 billion, or 15.9 percent of 2019 GDP. However, the document only clearly describes NZ$19.1 billion of the NZ$36 billion as conventional stimulus. ("COVID-19 Economic Response Measures," https://www.treasury.govt.nz/information-and-services/new-zealand-economy/covid-19-economic-response/measures). Thus it points to stimulus between 10.3 and 15.9 percent of 2020 GDP.

The OECD's discussion is the most precise and is reasonably consistent with the information in the other sources. We therefore use their estimate of 11.5 percent of 2019 GDP.

***Norway*: 4.6%.**

Our sources all give very similar estimates of Norway's fiscal stimulus. The IMF gives a figure of NOK160 billion (4.5 percent of 2019 GDP). However, the IMF is not clear about whether this figure includes some postponements of tax payments, and the estimate appears to omit some measures proposed in late May. The OECD gives a figure for the "estimated fiscal impulse" of 5.1 percent of mainland GDP (which, assuming the OECD is using 2019 mainland GDP, would be 4.4 percent of total 2019 GDP). Similar to the IMF, however, the OECD is not entirely clear about what it is including in its figure, and the measures from late May are not included. In late August, Fitch refers to "a sizable fiscal stimulus package, which we expect to add NOK157.5 billion ... to government expenditure this year," but like the other sources, it does not provide details ("Fitch Affirms Norway at 'AAA'; Outlook Stable," August 28, 2020). Finally, the Norwegian government gives a figure of NOK162 billion (4.6 percent of 2019 GDP). This number includes the measures from late May and excludes loans, guarantees, and postponements ("Economic Measures in Norway in Response to Covid-19," August 6, 2020).

All these estimates are similar. The one from the government appears to be the most up to date and to conform most closely to conventional fiscal stimulus. We therefore use its estimate of NOK162 billion, which corresponds to 4.6 percent of 2019 GDP.

***Poland*: 4.2%.**

The range of estimates for Poland's stimulus is relatively narrow. The OECD lists a large number of stimulus measures that sum to PLN87 billion, or 3.8 percent of 2019 GDP. But it also describes some measures for which it gives no information on their size. Thus 3.8 percent of GDP appears to be a lower bound. Similarly, a report from Fitch early in the pandemic says, "The authorities' proposed stimulus ... amounts to a cumulative PLN212 billion (around 9% of GDP), of which direct budgetary measures amount to about PLN66 billion (3%)" ("Fitch Affirms Poland at 'A–'; Outlook Stable," March 27, 2020). However, this precedes the announcement of a package the OECD estimates at PLN18.5 billion and of some measures for which the OECD does not provide figures. Thus the evidence from Fitch appears to be very consistent with the OECD's. The IMF gives a figure of PLN104 billion (4.6 percent of 2019 GDP). However, one item in the IMF's list of budgetary measures involves the postponement of social insurance contributions; thus 4.6 percent of GDP appears to be an upper bound. Similar to the IMF, the EIU gives a figure of PLN102.5 billion (4.5 percent of 2019 GDP), though this too does not fully exclude postponements (Country Report, Poland, August 2020).

As noted above, we generally prefer estimates from the OECD and the IMF to those from Fitch and the EIU. Since the OECD figure does not include some items and the IMF includes at least one that is not conventional stimulus, we average the two. This gives PLN95.5 billion, which is 4.2 percent of 2019 GDP.

***Portugal*: 4.5%.**

Our most preferred sources provide only limited information about Portugal's conventional fiscal response to the pandemic. Nonetheless, it is possible to construct an estimate that appears to be relatively reliable.

Both the IMF and the OECD describe a program that would provide support of roughly 0.3 percent of GDP per month, but do not provide information about its expected duration. The IMF also mentions an additional 0.6 percent of 2019 GDP of spending. Anderson et al. give a figure of €5.2 billion, or 2.4 percent of 2019 GDP, for Portugal's "Immediate fiscal impulse." Unfortunately, their information is only updated through May 4, 2020, and other measures were adopted later.

The clearest discussion of the later measures comes from Fitch. It describes a new fiscal package in June of €12 billion, or which €7.75 billion took the form of loan guarantees and liquidity support ("Portugal Debt to Exceed 2014 Peak; Post-Pandemic Prospects Key," June 12, 2020). This suggests additional stimulus of €4.25 billion (2.0 percent of 2019 GDP).

Finally, news reports from March cite the same €5.2 billion figure as Anderson et al. for the initial measures (for example, "Portugal Clears Way for State of Emergency over Coronavirus, Announces Aid Package," Reuters, March 18, 2020); and ones from June cite a figure of €4.3 billion for the later measures that is very similar to the one from Fitch (for example, "Portugal Parliament Approves Amended Budget for Coronavirus Crisis," Reuters, June 17, 2020).

This evidence points to €5.2 billion plus €4.25 billion, or €9.45 billion, for Portugal's conventional fiscal response to the pandemic. This is 4.5 percent of 2019 GDP.

***Slovak Republic*: 2.1%.**

The only one of our most preferred sources to provide a figure for the Slovak Republic's fiscal stimulus is the IMF. It gives an estimate of €2.0 billion, which is 2.1 percent of 2019 GDP, although this appears to include some postponements. The Slovak Republic is not in Anderson et al.'s sample, and the OECD does not provide quantitative estimates of its stimulus. The EIU gives a figure of €1.5 billion (1.6 percent of 2019 GDP) ("Public Finances Set to Deteriorate," June 17, 2020). Fitch gives an estimate of 1.6 percent of GDP for just one component of the government's package, the short-time work scheme ("Fitch Downgrades Slovakia to 'A'; Outlook Stable," May 8, 2020). Thus the information from Fitch points to stimulus of more than 1.6 percent of GDP. (Fitch also lists an increase in pension benefits of 0.7 percent of GDP, but this measure is not included in the IMF's list of stimulus actions, and the EIU report makes clear that it was in fact adopted before the pandemic.)

Since the IMF is the only one of our most preferred sources to give a quantitative estimate of the size of the Slovak Republic's stimulus, and the other sources that provide estimates do not point to a dramatically different figure, we use its estimate. That suggests stimulus of 2.1 percent of 2019 GDP.

***Spain*: 3.9%.**

There is relatively good agreement among our preferred sources regarding Spain's conventional fiscal actions in response to the pandemic. The IMF cites an overall figure of €37 billion, or 3.0 percent of 2019 GDP, and provides a detailed breakdown showing that all the components included in this total took the form of conventional stimulus. Anderson et al. give a slightly higher figure of €45.7 billion (3.7 percent of 2019 GDP) for the "Immediate fiscal impulse" through June 23, 2020. And the OECD is slightly higher in turn, with an overall figure of €56.275 billion (4.5 percent of 2019 GDP), of which €2.75 billion reflects measures adopted after June 23. However, the OECD is not entirely clear about whether all the measures through June 23 represented conventional stimulus.

Anderson et al. are clear about the measures adopted through June 23, and their estimate for that period falls in between those of the IMF and the OECD. We therefore use their figure of €45.7 billion through June 23. We then add the €2.75 billion of measures adopted soon afterward described by the OECD. This implies overall conventional stimulus of €48.45 billion, which is 3.9 percent of 2019 GDP.

***Sweden*: 4.8%.**

There is general agreement about the size of Sweden's conventional stimulus. The OECD says, "Total government support in 2020 amounts to a total of SEK 805bn (16% of GDP), including SEK 240bn (4.8% of GDP) in budget measures, SEK 335bn (6.6% of GDP) in liquidity measures and SEK 230bn (4.6% of GDP) in guarantees (assuming these are used to the maximum)." The IMF gives the size of a long list of items that are largely conventional stimulus as SEK 267 billion, although two items that appear small (loans to SMEs and capital injections into a few enterprises) are not conventional stimulus. And Fitch gives a figure of 4.5 percent of GDP ("Fitch Affirms Sweden at 'AAA', Outlook Stable," June 5, 2020).

Because the IMF figure of SEK 267 billion appears to include a few items that are not conventional stimulus and is slightly above the OECD figure, we use the OECD figure of SEK 240 billion, which is 4.8 percent of 2019 GDP.

***Switzerland*: 4.4%.**

The only one of our most preferred sources to provide specifics for Switzerland's fiscal response is the IMF. It gives a headline number of CHF73 billion, which is 10.4 percent of 2019 GDP. However, it reports that CHF42.5 billion of this was for loans and loan guarantees, leaving CHF30.5 billion, or 4.4 percent of 2019 GDP, as potential conventional stimulus. However, even this figure appears to include some postponements of tax payments, suggesting that the conventional stimulus was slightly smaller.

Fitch reports, "a sizable fiscal stimulus package, which we estimate to add CHF30.8 billion … to federal expenditure this year" ("Fitch Affirms Switzerland at 'AAA'; Outlook Stable," July 3, 2020). Since this figure is only for the spending side of the budget, it does not include tax postponements, and Fitch explicitly excludes the program that accounts for the vast majority of the government's credit provision from the CHF30.8 billion figure.

Since the IMF points to stimulus of CHF30.5 billion or slightly below and Fitch points to stimulus slightly greater than CHF30.5 billion, we use the CHF30.5 billion figure. This is 4.4 percent of 2019 GDP.

***Turkey*: 1.4%.**

Information on the exact size of Turkey's conventional stimulus is scarce. Nonetheless, it is clear that the amount was modest.

As with Hungary, one important piece of evidence that Turkey's stimulus was small is that observers expected the movement in the actual deficit to be moderate. Fitch expected a change of 3.6 percent of GDP from 2019 to 2020, while the EIU expected a change of 3.0 percent of GDP ("Fitch Revises Outlook on Turkey to Negative; Affirms at 'BB-'," August 21, 2020; Country Report, Turkey, August 2020). Since the fall in economic activity surely had a significant direct impact on the deficit, this strongly suggest that conventional stimulus was no more than a few percent of GDP.

Turkey is not in Anderson et al.'s sample, and the OECD does not provide an estimate of Turkey's conventional stimulus. The IMF gives a figure of TL75 billion (1.8 percent of 2019 GDP) for Turkey's "fiscal measures," but this appears to include 0.4 percent of GDP of capital injections and may include some postponements of tax payments. Very similarly, Fitch reports, "The government's direct fiscal response to the coronavirus shock was moderate, totalling close to 2% of GDP," but indicates that at least 0.5 percentage point of this was credit support ("Fitch Revises Outlook on Turkey to Negative; Affirms at 'BB–'," August 21, 2020). These estimates support the evidence from the behavior of the actual deficit that Turkey's conventional fiscal stimulus was small.

The IMF and Fitch estimates are very similar. Because we generally follow the IMF over Fitch and the information from the IMF is more detailed and precise, we use the IMF estimates, which implies conventional stimulus of 1.4 percent of 2019 GDP.

***United Kingdom*: 8.0%.**

Neither the IMF nor the OECD point to very large conventional fiscal actions in the United Kingdom. The IMF does not provide a bottom line figure, but the specific items it cites sum to £56 billion, which is just 2.5 percent of 2019 GDP. The OECD cites a larger figure of £120 billion for discretionary spending measures, or 5.4 percent of 2019 GDP.

A range of other sources, however, point clearly to conventional stimulus in response to the pandemic of 8 percent of 2019 GDP or slightly more. Anderson et al. report an "Immediate fiscal impulse" of 8.0 percent of 2019 GDP. In addition, they provide a detailed breakdown of the actions that they classify under this heading that shows that all but a few minor items are unambiguously conventional stimulus. Moreover, their detailed breakdown includes £14.7 billion (0.7 percent of 2019 GDP) of tax cuts; these would not be included in the figure reported by the OECD, which focuses only on spending.

Three reports in July 2020 echo Anderson et al.'s estimate. One from Fitch states, "We estimate the direct cost of fiscal policy measures since March at GBP184 billion (8.3% of 2019 GDP)" ("UK Coronavirus Measures Add to Fiscal Cost, Consolidation Plan to Come," July 10, 2020). A press notice a few days later from the Office of Budget Responsibility gives a figure of £142 billion for measures taken through June 26, plus additional measures announced on July 8 that were expected to cost another £50 billion ("Press Notice, Fiscal Sustainability Report, July 2020"). This suggests stimulus of 8.7 percent of 2019 GDP. Finally, a report from the U.K. Treasury on the new "Plan for Jobs" gives a figure of £158.7 of "[p]reviously announced" "direct fiscal support" (a figure that includes £32.9 billion that was not part of the Plan for Jobs and is described by the Office of Budget Responsibility as being announced on July 8), plus an additional amount for the Plan for Jobs that is described as "[u]p to" £30 billion (*Plan for Jobs*, July 2020). Thus this report suggests overall conventional stimulus of slightly less than 8.5 percent of 2019 GDP.

In light of the unanimity and specificity of the other sources, the estimates from the IMF and OECD are clearly too low. The other sources are all in very close agreement. Because Anderson et al. is one of our most preferred sources and is more exact than some of the others, we use their figure of 8.0 percent of 2019 GDP.

***United States*: 11.5%.**

The IMF cites four fiscal policy actions taken by the United States in the period we consider: the Coronavirus Preparedness and Response Supplemental Appropriations Act, the Families First Coronavirus Response Act, the Coronavirus Aid, Relief and Economy Security ("CARES") Act, and the Paycheck Protection Program and Health Care Enhancement Act. It gives their costs as $8.3 billion, $192 billion, $2.3 trillion, and $483 billion, respectively, for a total of $2.9833 trillion, or 13.9 percent of 2019 GDP. The OECD cites the same four actins but gives their costs as $8.3 billion, $108 billion, $2 trillion, and $484 billion, respectively, implying total actions of 12.1 percent of 2019 GDP.

In the case of the CARES Act, however, the headline amounts cited by the IMF and the OECD included substantial loans and guarantees. An estimate that focuses on the budgetary impact, and thus the conventional stimulus component, comes from the Congressional Budget Office (CBO). CBO estimates the act's impact on the deficit over the period 2020–2025 as $1.773 trillion, with almost all the effect (other than from tax deferrals that almost entirely largely net out over the full period) occurring in 2020 and 2021 ("H.R. 748, CARES Act, Public Law 116-136," April 16, 2020). For the Families First Coronavirus Response Act, CBO gives the same $192 billion estimate as the IMF ("H.R. 6201, Families First Coronavirus Response Act," April 2, 2020). Thus adjusting the IMF and CBO estimates in light of CBO's assessments implies stimulus of $2.4563 trillion, which is 11.5 percent of 2019 GDP.

Anderson et al. give a slightly lower figure of $1.940 trillion (9.1 percent of 2019) GDP for the United States's "Immediate fiscal impulse." However, in this case their accounting is not as clear as that we obtain from the IMF, OECD, and CBO, and their estimates come mainly from secondary sources. Thus, although the difference is not large, the estimate of 11.5 percent of 2019 GDP appears to be more accurate.

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