

Discussion: Fiscal Constraints, Disaster Vulnerability, and Corporate Investment Decisions

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Exposure to fiscal constraints and Covid-19

$$FCE_{f,2018} = \sum_c \left[\underbrace{w_{f \times c, 2018}}_{\text{Fraction of sales in country } c} \cdot \underbrace{\frac{B_{c, 2018}}{P_{c, 2018} Y_{c, 2018}}}_{\text{Debt-to-GDP ratio for country } c} \right] \uparrow \text{ by } 1$$

Controlling for HQ and industry:

- ➊ **Risk-adjusted drawdown:** 7% larger risk-adjusted drawdown on trading day 15 (i.e., March 6, 2020).
- ➋ **Disaster beta:** market $\beta \uparrow$ by 0.21 in a disaster.¹
- ➌ **Perceived firm fiscal constraints risk:** $FCR_{f,t} \uparrow$ (doubling).
- ➍ **Pre-disaster alpha - backward:** CAPM $\alpha \uparrow$ by 6% per year (pre-pandemic).

¹Change from Q4 2019 (pre-disaster) to Q3 2020 (disaster)

Exposure to fiscal constraints and Covid-19

$$FCE_{f,t-1} = \sum_c \left[\underbrace{w_{f \times c, t-1}}_{\text{Fraction of sales in country } c} \cdot \underbrace{\frac{B_{c,t-1}}{P_{c,t-1} Y_{c,t-1}}}_{\text{Debt-to-GDP ratio for country } c} \right] \uparrow \text{ by } 1$$

Controlling for HQ and industry, and pre-disaster (2015-2019):

- ⑤ **Discount rates:** $r_{f,t}^{\text{dr}}$ \uparrow by 1.1% (data from Gormsen and Huber (2023)).
- ⑥ **Investment:** the capital expenditure ratio \downarrow^2 by 0.8% point. R&D expenditure ratio \downarrow by 1.3% point.

Big Question

Is it a story about constrained government spending and aggregate demand?

²Relative to the firm's total assets.

A simple Keynesian model

Government wants debt sustainability in the long run:

$$rB \leq T - G,$$

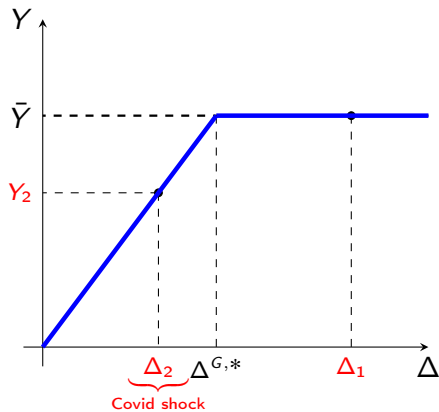
which leads to

$$G \leq T - r \cdot b \cdot Y, \quad b \equiv \frac{B}{Y}. \quad (1)$$

Keynesian cross:

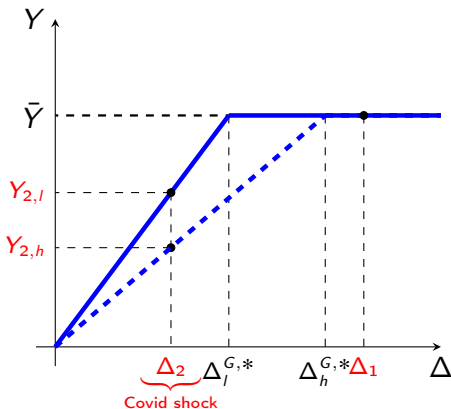
$$Y = \underbrace{\text{MPC}(Y - T)}_{\equiv C} + G + \underbrace{\Delta}_{\text{Global demand shock}}$$

Fiscal authority's objective: Y as close to \bar{Y} (i.e., natural output) as possible, subject to (1).



The threshold:

$$\Delta^{G,*} = (1 - \text{MPC} + r \times b) \bar{Y} - (1 - \text{MPC}) T$$



The threshold:

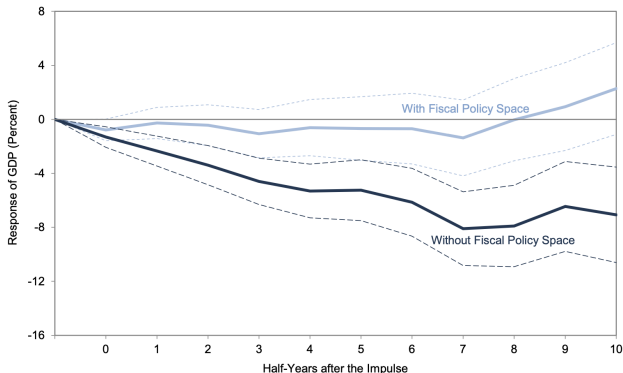
$$\underbrace{\Delta^{G,*}}_{\uparrow} = \left(1 - \text{MPC} + r \times \underbrace{b}_{\uparrow} \right) \bar{Y} - (1 - \text{MPC}) T$$

If firm h (l) sells products to country h (l)

- Firm h 's profit becomes more sensitive to fluctuations in Δ

Romer and Romer (2018): case of financial crises

FIGURE 6
Behavior of Real GDP after a Financial Crisis,
with and without Fiscal Policy Space



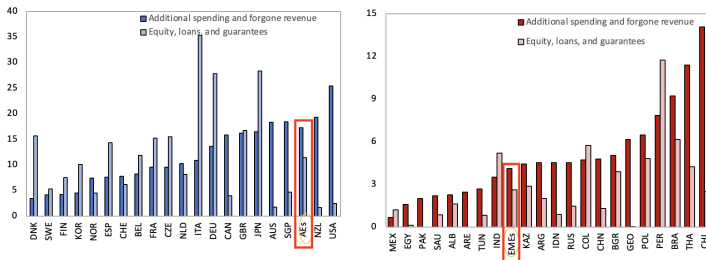
Notes: The figure shows the impulse response function for real GDP to an impulse of 7 in our new measure of financial distress derived from estimating equation (2) for the sample of 24 OECD countries over the post-1980 period using OLS. The measure of fiscal policy space used is the (negative) gross debt-to-GDP ratio in the previous calendar year. The “without fiscal policy space” line corresponds to a value of the debt-to-GDP ratio one standard deviation above the sample average; the “with fiscal policy space” line corresponds to a value of the debt-to-GDP ratio one standard deviation below the sample average. The dashed lines show the two-standard-error confidence bands.

Advanced and emerging economies during Covid-19

Table 2. Global Public Debt, 1950–2022
(Percent of GDP, weighted averages)

	1950s	1960s	1968	1970s	1980s	1986	1990s	2000s	2004	2010s	2019	2020	2021	2022
World	56.2	39.8	36.3	33.1	47.6	54.3	62.0	66.5	69.8	81.0	84.9	100.4	96.0	92.4
Advanced Economies	64.0	44.3	39.5	36.1	50.7	57.5	66.4	75.3	76.8	104.6	105.4	124.4	118.7	113.5
Euro Area	32.5	24.7	25.0	27.7	47.0	52.1	67.0	69.9	69.7	90.9	85.9	99.2	97.3	93.2
Japan	13.1	10.1	11.8	23.4	64.3	74.0	89.0	166.6	169.5	227.5	236.4	258.7	255.4	261.3
United Kingdom	134.0	81.5	70.9	57.5	40.3	41.0	38.1	42.6	39.8	84.7	85.5	105.6	105.9	101.4
United States	69.7	54.4	48.7	43.6	51.6	57.7	66.3	64.1	66.1	104.1	108.7	133.5	126.4	121.4
Emerging Market Economies	15.5	18.8	20.6	21.4	35.6	40.2	41.5	40.9	44.1	44.3	55.7	65.8	64.8	65.2
China 1/							21.2	26.9	26.4	44.3	60.4	70.1	71.8	77.1
Others	15.5	18.8	20.6	21.4	38.6	45.8	46.3	44.7	49.0	44.0	52.0	61.9	58.4	55.3
Low-Income Developing Countries				15.6	36.2	43.2	64.8	45.8	51.2	34.8	42.9	48.5	48.5	48.4

Figure 1. Discretionary Fiscal Response to the COVID-19 Crisis in Selected Economies
(Percent of GDP)



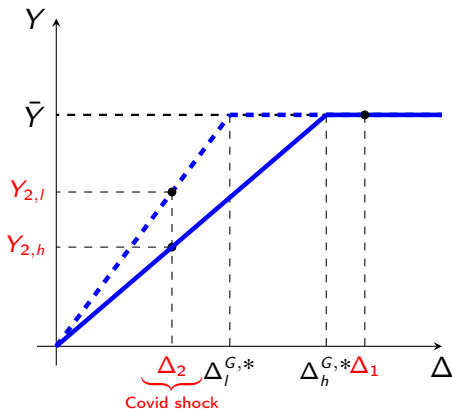
Sources: Database of Country Fiscal Measures in Response to the COVID-19 Pandemic; and IMF staff estimates.
Note: Estimates as of June 5, 2021. Numbers in U.S. dollar and percent of GDP are based on July 2021 World Economic Outlook Update unless otherwise stated. Country group averages are weighted by GDP in US dollars adjusted by purchasing power parity. Data labels use International Organization for Standardization country codes. AEs = advanced economies; EMEs = emerging market economies; LDCs = low-income developing countries.

Advanced and emerging economies during Covid-19

- Advanced countries (e.g., United States): higher debt-to-GDP ratio → even higher pandemic spending
- Blanchard (2019): with low r , higher debt \Rightarrow higher fiscal costs
- Maybe, US Treasury bonds are overpriced?: Jiang, Lustig, Van Nieuwerburgh, and Xiaolan (2024)³

³Brunnermeier, Merkel, and Sannikov (2023): service flow value of US Treasuries

Monetary policy: equally important?

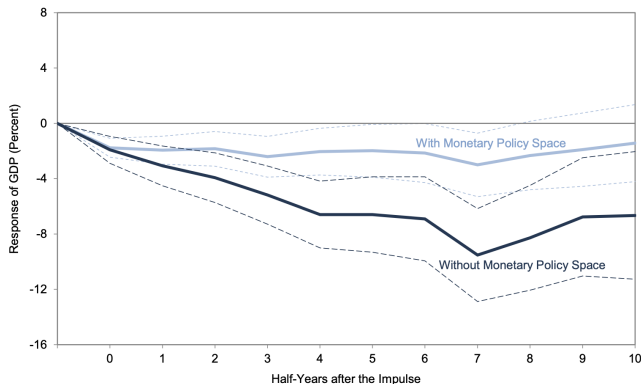


The threshold:

$$\underbrace{\Delta^{G,*}}_{\downarrow} = \left(1 - \text{MPC} + \underbrace{r}_{\downarrow} \times b \right) \bar{Y} - (1 - \text{MPC}) T$$

Romer and Romer (2018): case of financial crises

FIGURE 4
Behavior of Real GDP after a Financial Crisis,
with and without Monetary Policy Space

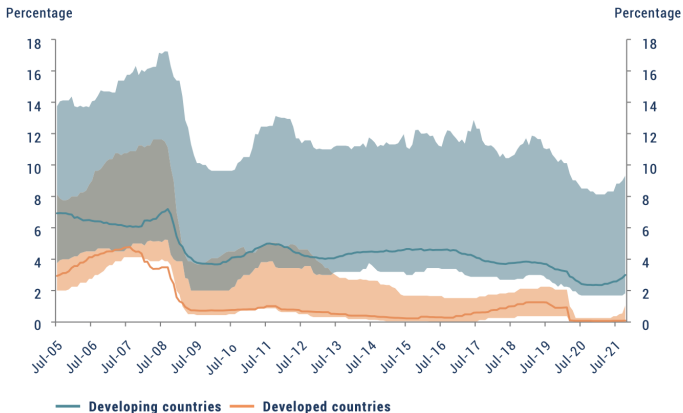


Notes: The figure shows the impulse response function for real GDP to an impulse of 7 in our new measure of financial distress derived from estimating equation (2) for the sample of 24 OECD countries over the post-1980 period using OLS. The measure of monetary policy space used is a dummy variable equal to 1 if the policy interest rate is greater than 1.25 percent at the end of the previous half-year. The “without monetary policy space” line corresponds to a value of the dummy of 0; the “with monetary policy space” line corresponds to a value of the dummy of 1. The dashed lines show the two-standard-error confidence bands.

Advanced and emerging economies: monetary policy

Figure II.1

Central bank policy rates in developed and developing countries



Sources: UN DESA, based on data from the Bank for International Settlements, CEIC and World Bank Open Data (accessed on 17 November 2021).

Note: The lines display the GDP-weighted average policy rates for a set of 36 developing countries and a set of 14 developed economies plus the euro area. The shaded areas indicate the range between the twenty-fifth and seventy-fifth percentile of the respective policy rates.

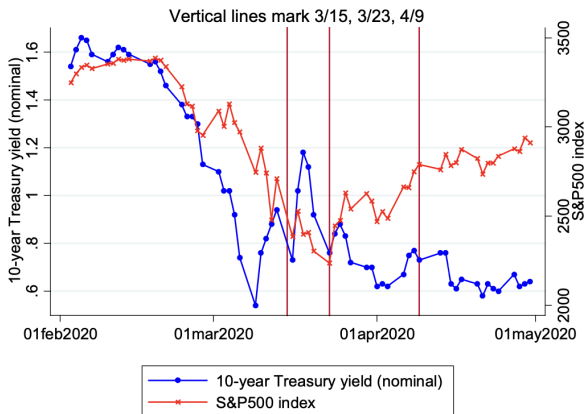
- Less monetary room for advanced economies (with higher debt-to-GDP ratio)?

Vissing-Jorgensen (2021): Federal Reserve Purchases

Figure 4. Federal Reserve purchase effects on the Treasury market

Panel A is similar to Figure 1 Panel A, but adds vertical lines to indicate the three Federal Reserve bond purchase announcements during the COVID crisis. Panel B lines up the timing of the Treasury yield reversal with Federal Reserve Treasury purchases, using data from the Federal Reserve Bank of New York. Panel C graphs the 10-year Treasury yield and the yield on investment grade corporate bonds.

Panel A. Treasury yields and S&P500



Potentially interesting channel

Firm F based in Country H having a higher portion of sales in Country C :

- Firm F 's subsidiary might operate based on loans from banks in Country C
- Country C might experience a so-called **bank-sovereign doom loop**: e.g., **Farhi and Tirole (2018)**, **De Marco (2019)**, **Jappelli et al. (2024)**
- The bank lending channel hurts Firm F 's profitability and value

Summary: very interesting and thought-provoking paper!

- Especially for macroeconomists
- Which channels are the most relevant?