WILL COVID-19 RAISE INEQUALITY?
EVIDENCE FROM PAST PANDEMICS AND CRISES

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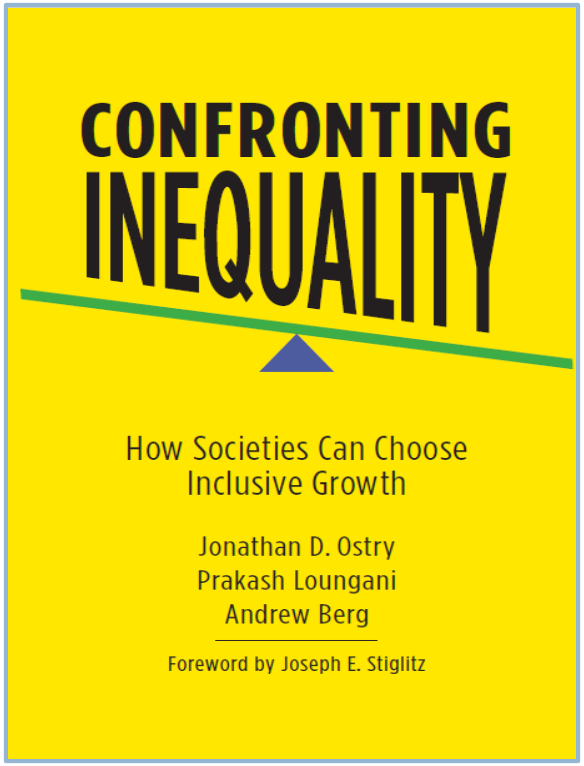
Sources for presentation

2020 paper (with Davide Furceri and Pietro Pizzuto)

2019 book (with Andrew Berg)



Outline of presentation

I. Pandemics and inequality

- Major epidemics in this century have raised inequality
- Anecdotal evidence on distributional impacts of Covid-19

II. Evolution of inequality in post-Covid world? Will past be prologue?

- Obviously, answer depends on numerous factors
  - Will virus strike back (second wave etc.) and its impacts

    (Not discussed today; see Deb, Furceri, Ostry and Tawk, 2020)
  - Other factors (listed on next slide)

Evolution of inequality: will past be prologue?

A) Will there be increased appetite to confront inequality?

- We hope so: our work finds inequality hurts sustained growth; redistribution, unless extreme, doesn't hurt growth; but history doesn't portend optimism

B) Will countries move to a more inclusive globalization?

- financial globalization, which poses more dangers to equity than trade, needs to be managed to deliver a more 'inclusive globalization'

C) Will governments scale back public debt rapidly?

- governments should try to 'live with the debt'; austerity breeds inequality

D) Will experience of pandemic speed up automation?

- could lead to persistent declines in income shares of unskilled workers

Summary

- Past major epidemics have raised inequality
- Question: Will this time be different?
- Answer: "No, unless …"
  - A) attitudes and policies really change and are not just lip-service
  - B) globalization restored with inclusiveness in mind
  - C) public debt pared back slowly rather than by knee-jerk austerity
  - D) gains from automation widely shared in society

I. Pandemics and Inequality

Growing literature this year on the aggregate effects of pandemics

- Atkeson
  - Estimates of economic impact of Covid-19 in the United States
- Barro, Ursua and Weng
  - Lessons from the Spanish Flu for the current pandemic
- Deb, Furceri, Ostry, Tawk
  - Economic effects of containment measures
- Eichenbaum, Rebelo and Trabandt
  - Macroeconomics of epidemics
- Jorda, Singh and Taylor
  - Long-run effects of pandemics
- Ma, Rogers and Zhou
  - Growth impacts of major epidemics in the 21st century

Our paper studies distributional impacts of major 21st century epidemics

- We study five "pandemics"
  - SARS (2003), H1N1(2009), MERS (2012), Zika (2014), Ebola (2016)
- WHO announcements are used to identify countries affected by each pandemic.
  - Pandemic event is a (0,1) variable; 1 if WHO declared a country was affected
- We then trace impact of pandemic events on income distribution and employment

Data on income distribution and employment

- Gini coefficients (SWIID)
  - 175 countries from 1961 to the present
- Income shares by decile (World Development Indicators)
  - 64 countries from 1981 onwards
- Employment/population ratio by education level (ILO)
  - 76 countries from 1990 onwards
  - "statistics on levels of educational attainment remain the best available indicators of labor force skill levels" (ILO)
- All our data are annual

Econometric method

Estimate impulse responses based on local projections (Jorda, 2005)

Basic specification:

$$y_{i,t+k} - y_{i,t-1} = \alpha_i^k + \gamma_t^k + \beta^k D_{i,t} + \theta^k X_{i,t} + \varepsilon_{i,t+k} \qquad (1)$$

Dependent variable: change in distributional variable of interest (e.g. Gini)

Independent variables: D is (0,1) pandemic event; X are controls;

country fixed effects and time fixed effects.

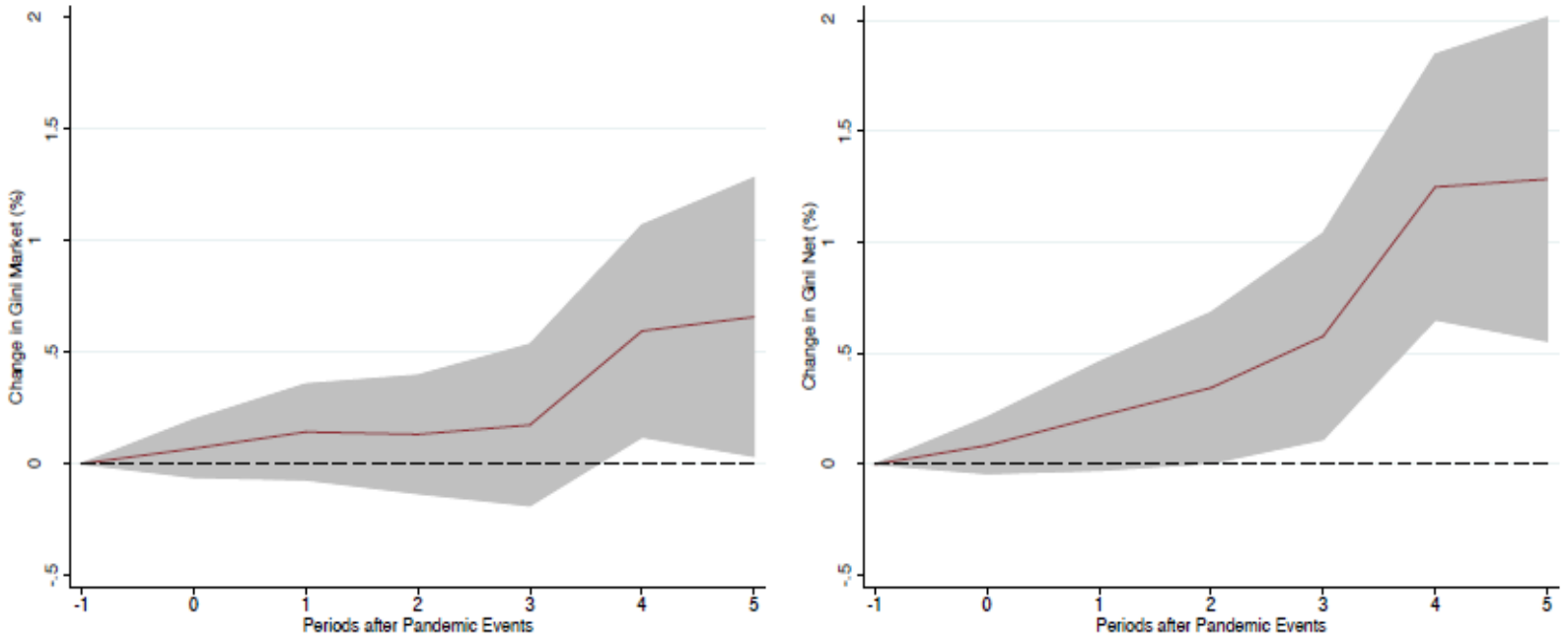
Equation is estimated for k=0,1,2,3,4,5.

Specification to allow different impacts across low GDP growth and high GDP growth regimes:

$$y_{i,t+k} - y_{i,t-1} = \alpha_i^k + \gamma_t^k + F(z_{it})\left[\beta_L^k D_{i,t} + \theta_L^k X_{i,t}\right] + \left(1 - F(z_{it})\right)\left[\beta_H^k D_{i,t} + \theta_H^k X_{i,t}\right] + \varepsilon_{i,t+k}$$

Gini increases in the years following a pandemic

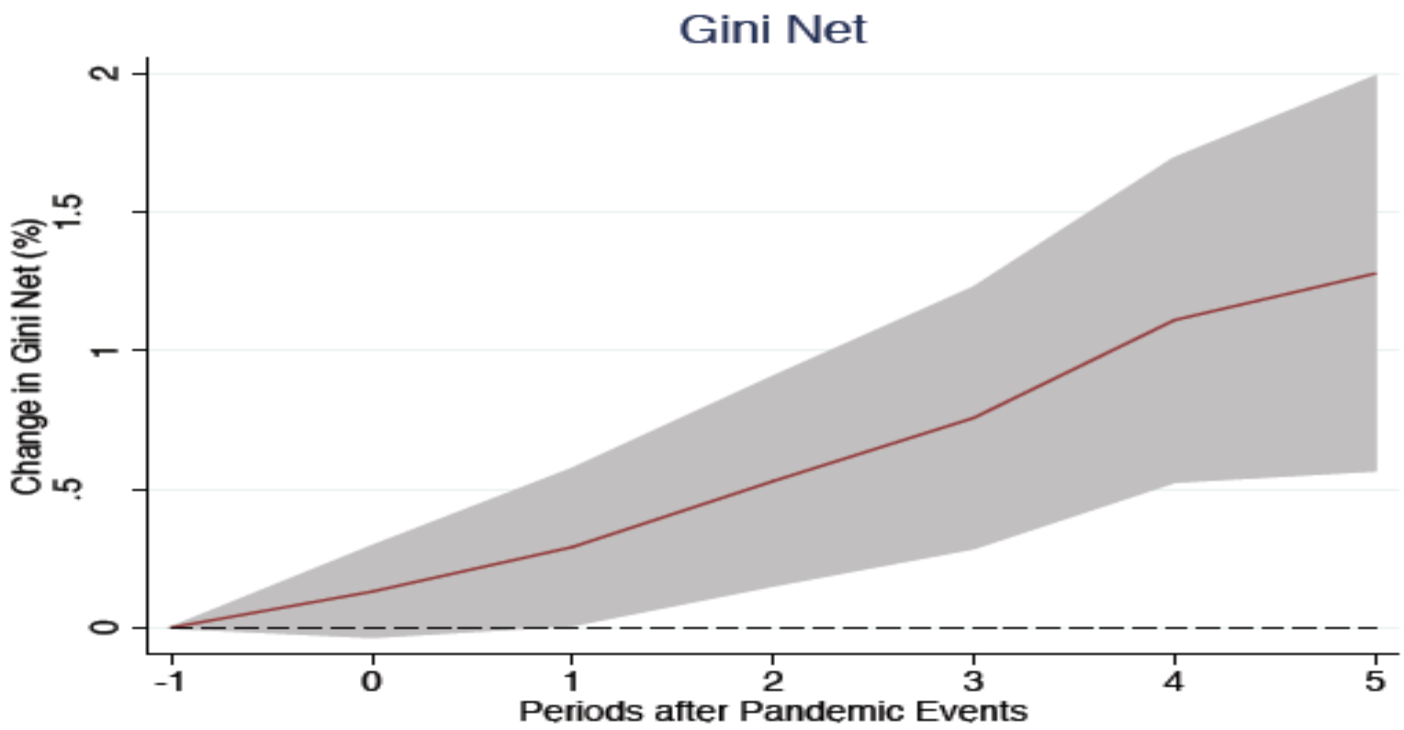
Figure 1. Impact of pandemics on market Gini and net Gini coefficients (%)



Estimated using local projection method. The charts shows the impulse response and 90 percent confidence bands. The x-axis shows years after pandemic events; t = 0 is the year of the pandemic event. The y-axis shows the percent change in the Gini.

Impact on net Gini: alternate method (autoregressive distributed lag)

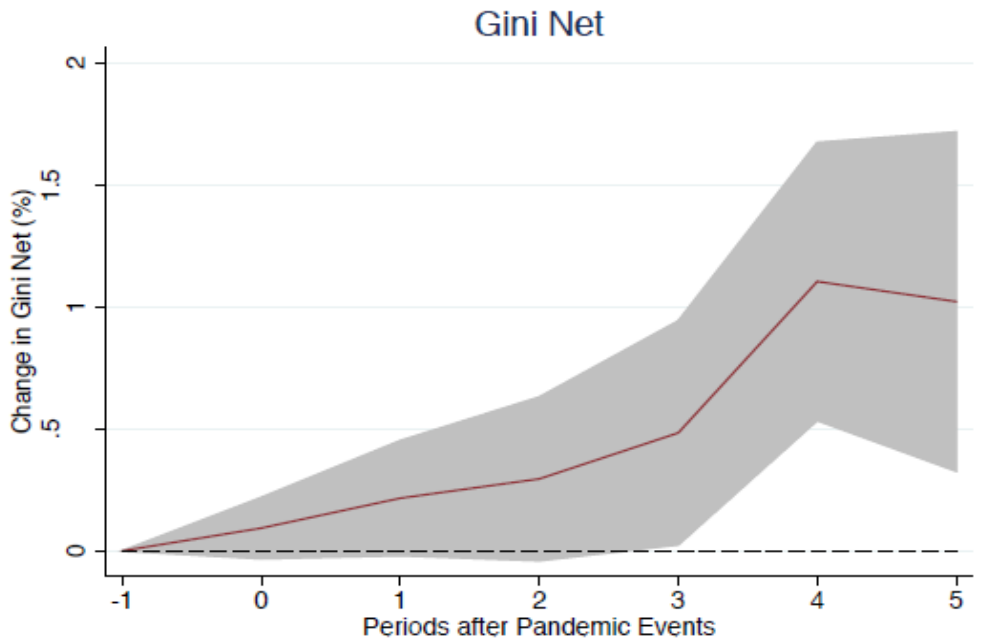
Figure 2. Impact of pandemics on net Gini coefficients (%)—ADL



Impulse response functions are estimated using a sample of 175 countries over the period 1961-2017. The graph shows the response and 90 percent confidence bands.. The independent variables include two lags of the dependent variable and the pandemic event dummy. Standard errors are clustered at the country level..

Impact on net Gini: additional determinants of inequality included as controls

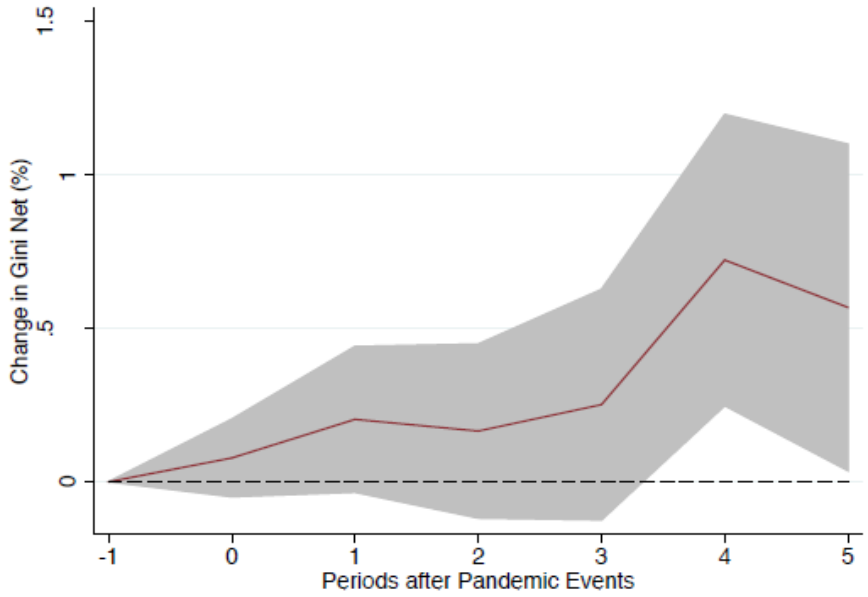
Figure 3. Impact of pandemics on net Gini coefficients (%)—Additional controls



The controls include two lags of the dependent variable and the pandemic event dummy (as in the baseline specification) plus: the level of GDP per capital the level of GDP per capital square, population density, the share of population in urban area, the KOF index of trade globalization and the KOF index of financial globalization.

Impact on net Gini: post-2000 subsample

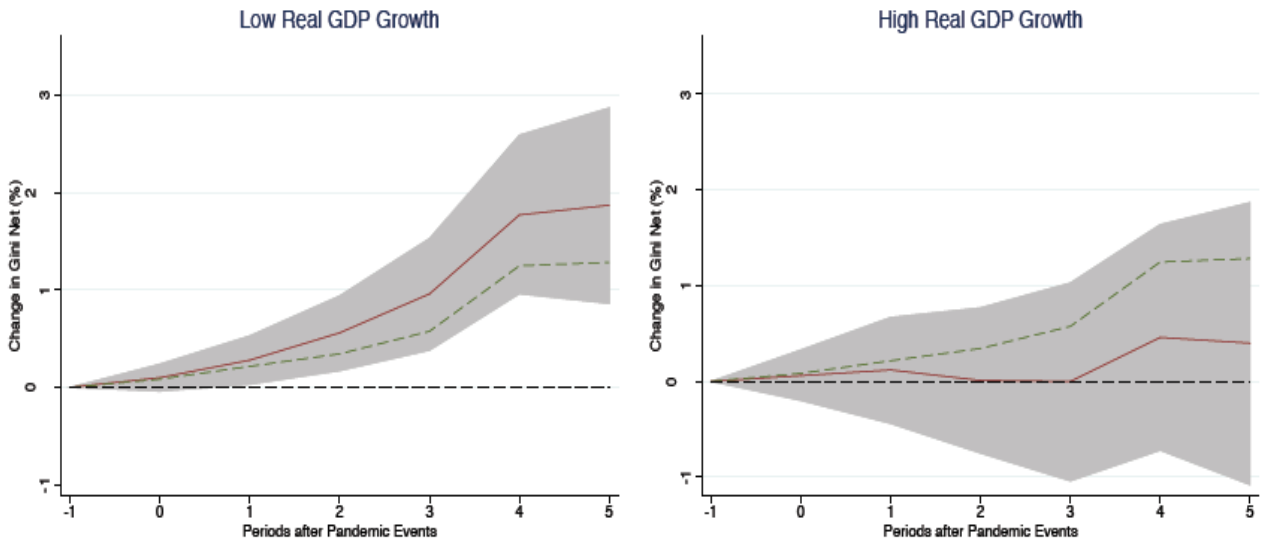
Figure 4. Impact of pandemics on net Gini coefficients (%)—Restricted sample (2000-17)



Baseline specification (as in Figure 1) estimated over sub-sample.

Gini increases more in low GDP growth regimes than in high GDP growth regimes

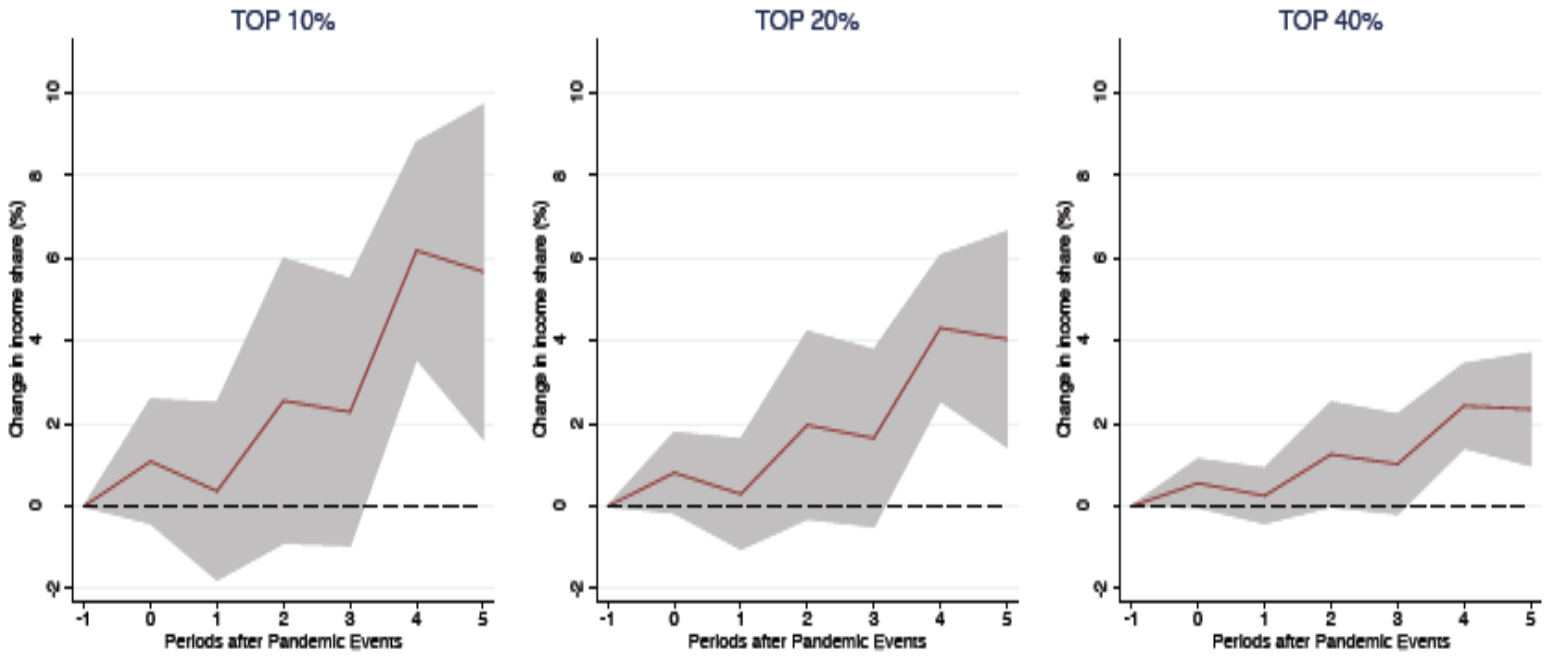
Figure 5. Impact of pandemics on net Gini coefficients (%)—The role of economic conditions associated with pandemic events



The dotted green line denotes the average (unconditional) effect reported in Figure 1. The redlines denote the estimates for pandemic events associated with very low GDP growth (left panel) and very high GDP growth (right panel).

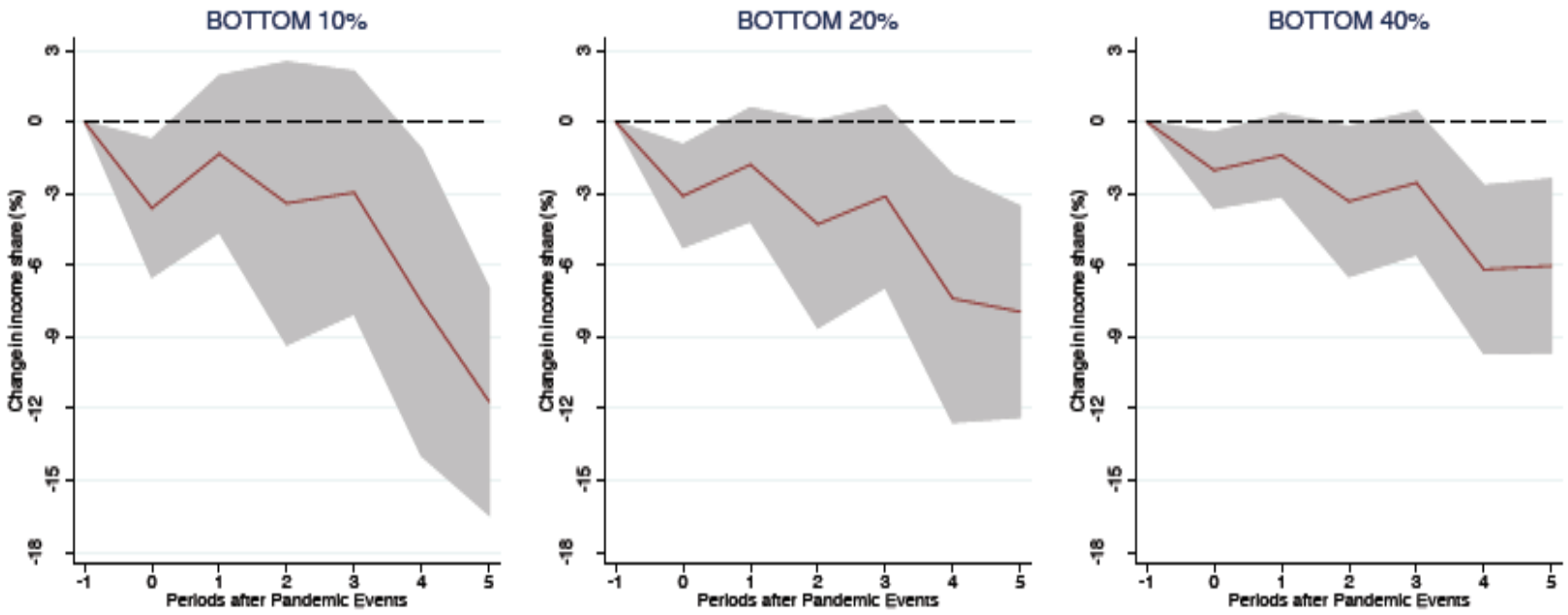
Pandemics raise the income shares of top deciles

Figure 6. Impact of pandemics on shares of income, by deciles

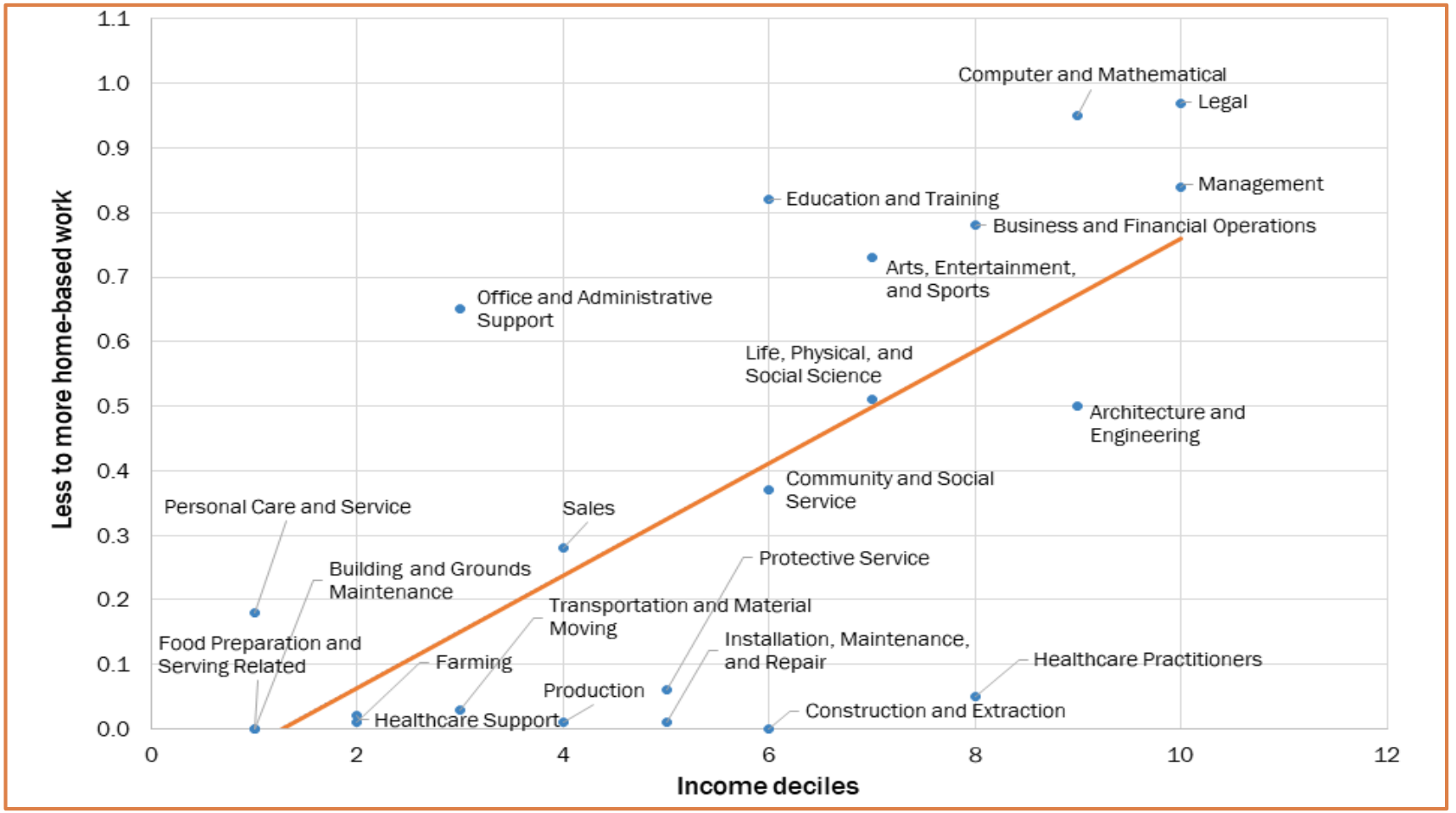


Impulse response functions are estimated using a sample of 64 countries over the period 1981-2017. The graph shows the response and 90 percent confidence bands. The dependent variable is the log of the income share held by the top deciles. Independent variables are country and time fixed effects and two lags of the dependent variable and the pandemic event dummy. Standard errors in parentheses are clustered at the country level.

Pandemics lower the income shares of bottom deciles

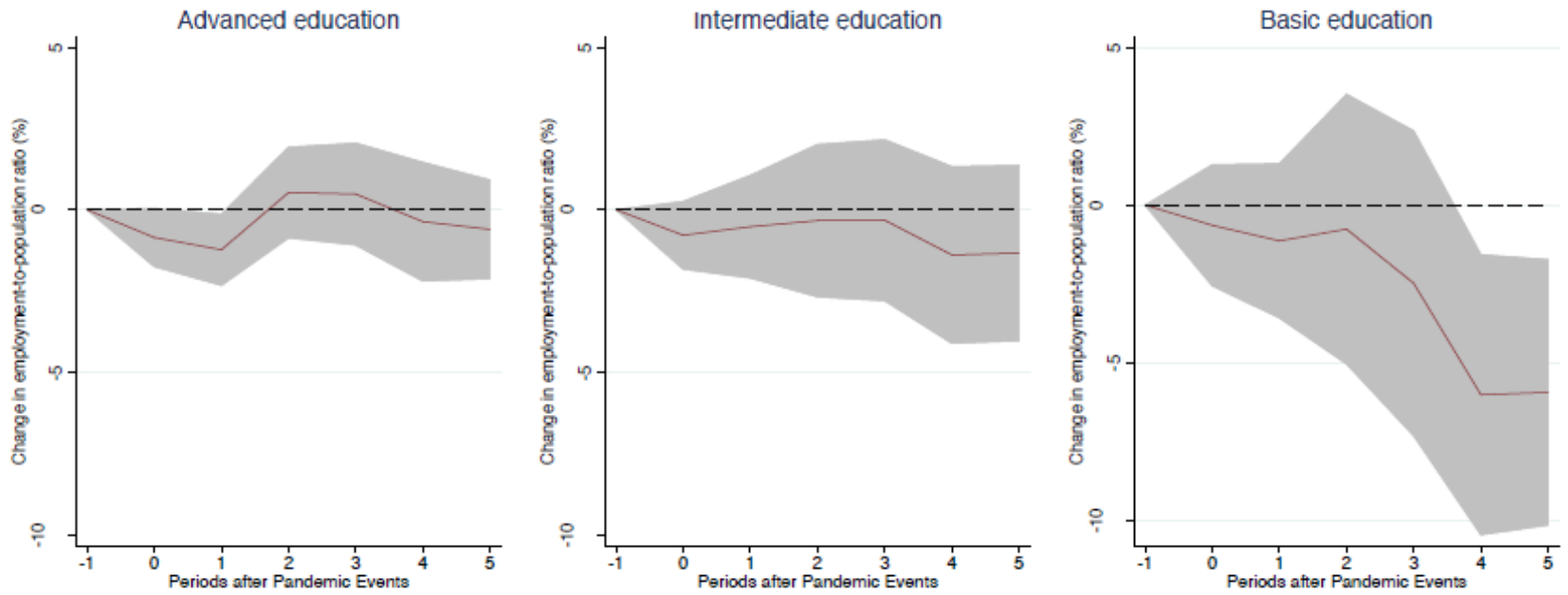


Workers in low-income deciles are less likely to be able to work from home (Avdiu and Nayyar, Brookings Review, 2020)



Pandemics lower employment/population ratio for those with basic education while not affecting the ratio for others

Figure 7. Impact of pandemics on employment-to-population ratio, by education level



Impulse response functions are estimated using a sample of 76 countries over the period 1990-2017. The graph shows the response and 90 percent confidence bands. The dependent variable is the log of employment-to-population ratio by education level. Independent variables are country and time fixed effects and two lags of the dependent variable and the pandemic event dummy. Standard errors are clustered at the industry level.

Anecdotal evidence on distributional effects of Covid-19

In the United States, people in low-income declines are:

More prone to infection

- In New York City, poor people less likely to test negative

More prone to die if infected

- Mortality rates higher among low-income people and minorities
- African-Americans: 13 percent of population, 25 percent of deaths

More prone to job loss or in essential but risky jobs

- Poor people are in jobs where working from home not is not easy
- African-Americans are quarter of NYC population but half of transit system workforce

Pandemic might leave scarring effects similar to those of recessions and other economic crises

Dao and Loungani, "The Human Cost of Recessions: Assessing It, Reducing It" and "The Tragedy of Unemployment"

Cost of unemployment:

- Loss in earnings not just today but persisting 15-20 years into the future;
- Reduced life expectancy of 1 to 1.5 years;
- Lower academic achievement and earnings for their children.
- Reduction in social cohesion, a cost that all will bear.

De Haan and Sturm, "Finance and Income Inequality: A Review and New Evidence"

- crises and recessions exacerbate inequality by depressing employment for those most vulnerable, such as less skilled and youth

Summary of Part I of the presentation

- Pandemics over the past few decades have raised inequality and diminished job prospects for low-skilled labor.
- Evidence seems to differ from experience of historical pandemics
  - Walter Scheidel called plagues "the great leveler"
- What impact will Covid-19 have on inequality?
  - Poll of top economists shows they expect increased inequality (Initiative on Global Markets, 2020)
  - Anecdotal evidence thus far not reassuring
  - Will impact end up similar to recent pandemics? Or, will this time be different?

II. Evolution of Inequality

Evolution of inequality: will past be prologue?

A) Will there be increased appetite to confront inequality?

B) Will countries move to a more inclusive globalization?

C) Will governments scale back public debt rapidly?

D) Will experience of pandemic speed up automation?

A) Increased willingness to confront inequality?

A remarkable editorial in the *Financial Times*

"Virus lays bare the frailty of the social contract" (April 3, 2020)

- recent developments "shine a glaring light on existing inequalities"
- "Radical reforms — **reversing the prevailing policy direction of the last four decades** — will need to be put on the table."
- "**Redistribution will again be on the agenda**; the privileges of the elderly and wealthy in question."
- Policies until recently considered eccentric, such as **basic income and wealth taxes**, will have to be in the mix."

Some other (unexpected) views …

- "This is our chance to **do the right thing**," by reducing income disparities,
  Mark Cuban, billionaire, sports & entertainment

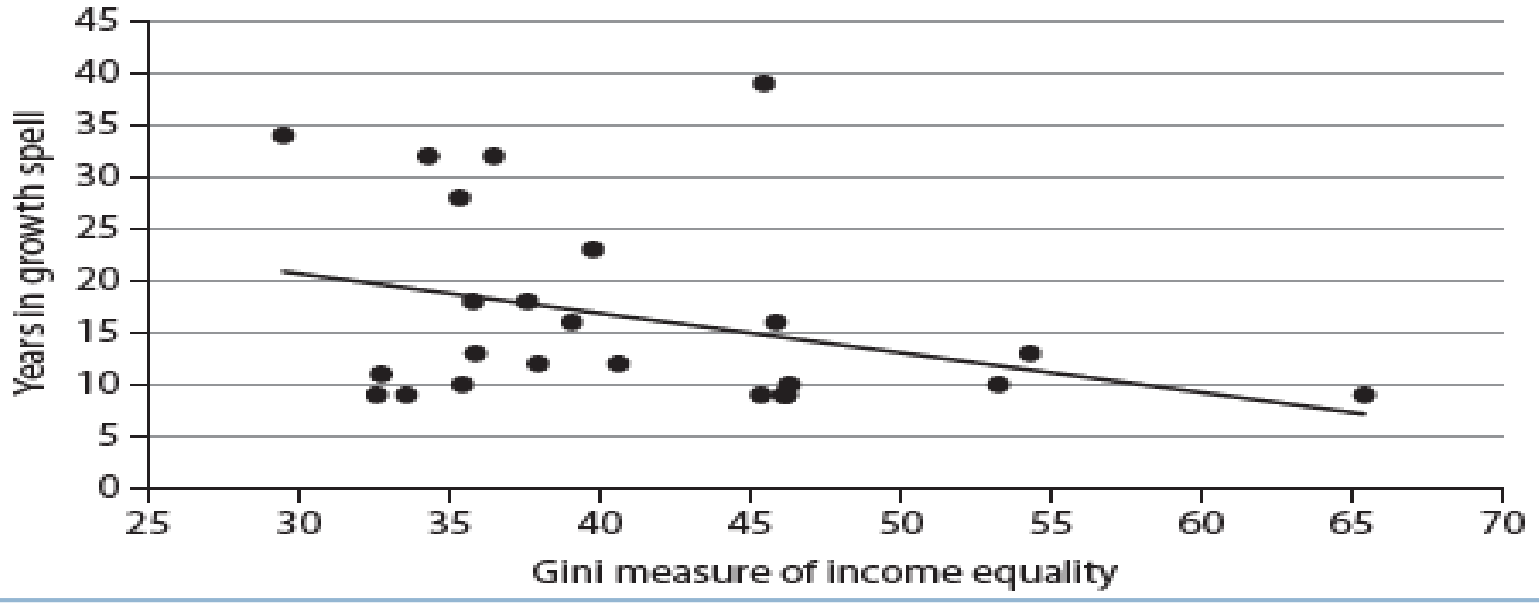
- Inequality is "a national emergency." "If you don't have **a situation where people have opportunity** … you're threatening the existence of the system,"
  Ray Dalio, hedge-fund billionaire

- The pandemic is "a wake-up call … for business and government to think, act and invest for **the common good**".
  Jamie Dimon, CEO, J.P. Morgan

Inequality leads to fragile growth

FIGURE 3.3: Duration of Growth Spells and Inequality

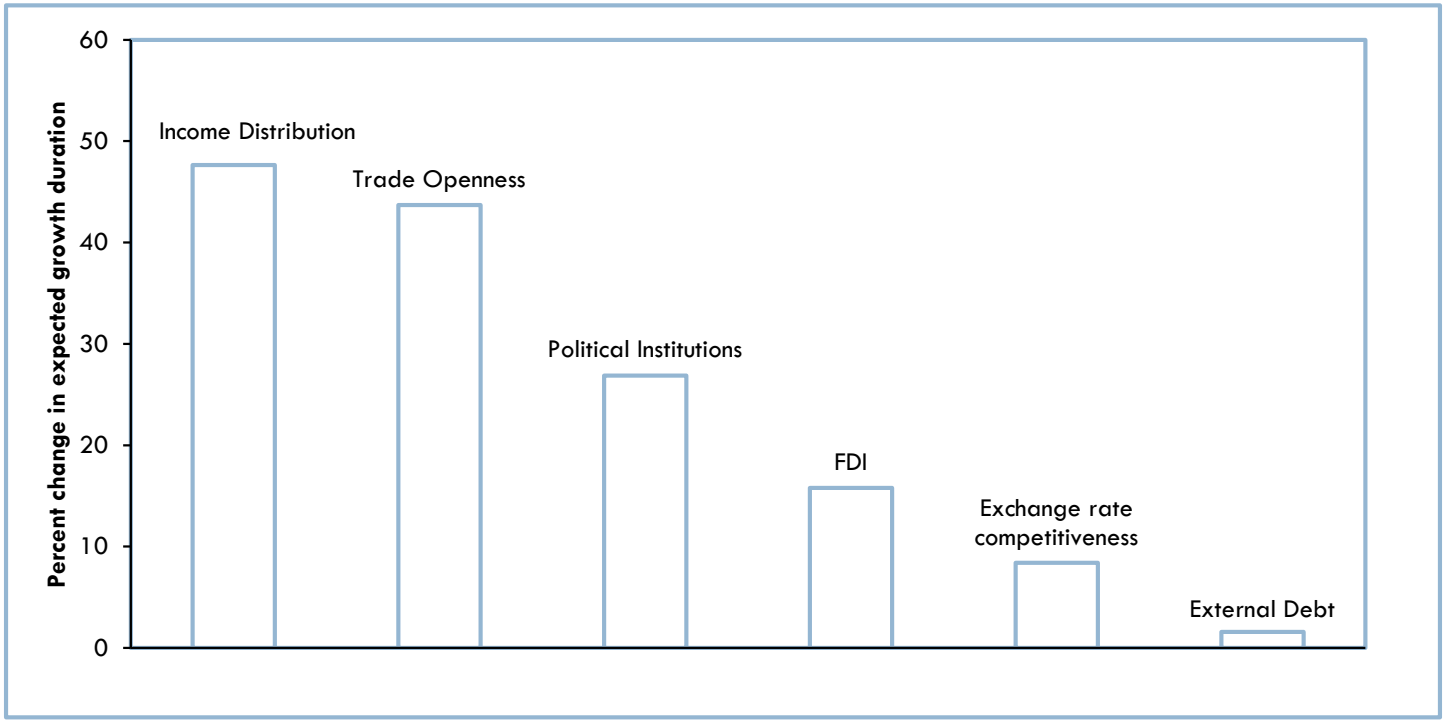
More inequality is associated with less sustained growth.



Relationship across countries between income inequality and duration of growth spell. Ostry and Berg (*IMF Economic Review* 2011); updated in Ostry, Loungani and Berg (2019, chapter 3)

A more equal income distribution sustains growth

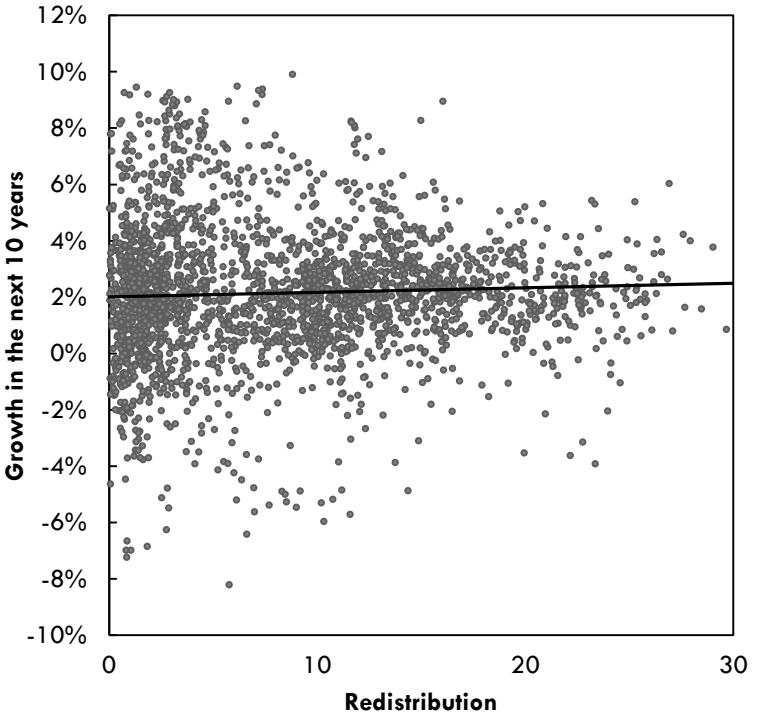
The impact of different factors on growth spell duration



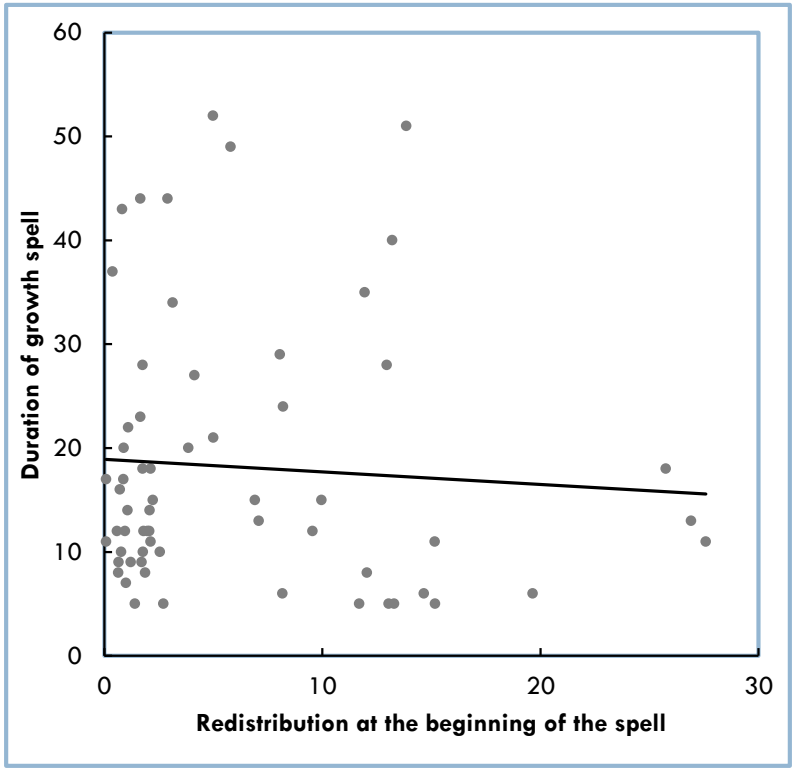
A more equal distribution increases the duration of growth spells even after controlling for the other factors shown. Berg, Ostry, Zettelmeyer (*Journal of Development Economics*, 2012); see also Ostry, Loungani and Berg (2019, chapter 3)

Weak relationship between redistribution and growth

Growth and redistribution



Redistribution & duration of growth



Berg, Ostry, Tsangarides and Yakshilikov (*Journal of Economic Growth*, 2018); see also Ostry, Loungani and Berg (2019, chapter 9)

B) Will countries work to restore globalization?

Pandemic has disrupted globalization

- Flows of goods and services
  - Disruption of global supply chains
  - Decline in tourism
- Flows of capital
  - Collapse in flows to EMs greater than during Great Recession
- Flows of labor
  - Decline in immigration

DIFFERENT ECONOMIC GLOBALIZATIONS IN HISTORY

	aspiration				
	Capital mobility	Free trade in goods	Labor mobility	Rules that reach behind borders	Multilateral governance institutions
Gold Standard	✓	✓	✓	✓	
Bretton Woods		✓			✓
Post-1990s hyper-globalization	✓	✓		✓	✓

Source: Dani Rodrik, Bendheim Center for Finance, Princeton, May 4, 2020

Dani Rodrik on restoring globalization

- "**A retreat from hyper-globalization is not necessarily bad** if we are able to construct a more sensible globalization"

- We could have "alternative globalizations" with other multilateral actors as prominent in driving agenda as Fund & Bank
  - social & labor rights (ILO)
  - LDC priorities (UNCTAD)
  - climate change (environmental agreements)
  - global health (WHO)

- Less emphasis on financial globalization

Views on Financial Globalization

- Gopinath (October 2017): "There is now a new consensus that capital account liberalizations are a mixed blessing"
- Krugman (May 2017): "financial globalization hasn't been the force for good that trade has been"
- Martin Wolf (2004): "the gains [of financial globalization] have been questionable and the costs of crises enormous."
- Arteta, Eichengreen and Wyplosz (2001): evidence that capital account liberalization is associated with growth is "decidedly fragile."
- Rodrik (1998): it makes economies "hostage to the whims and fancies of two dozen thirty-somethings in London, Frankfurt and New York."

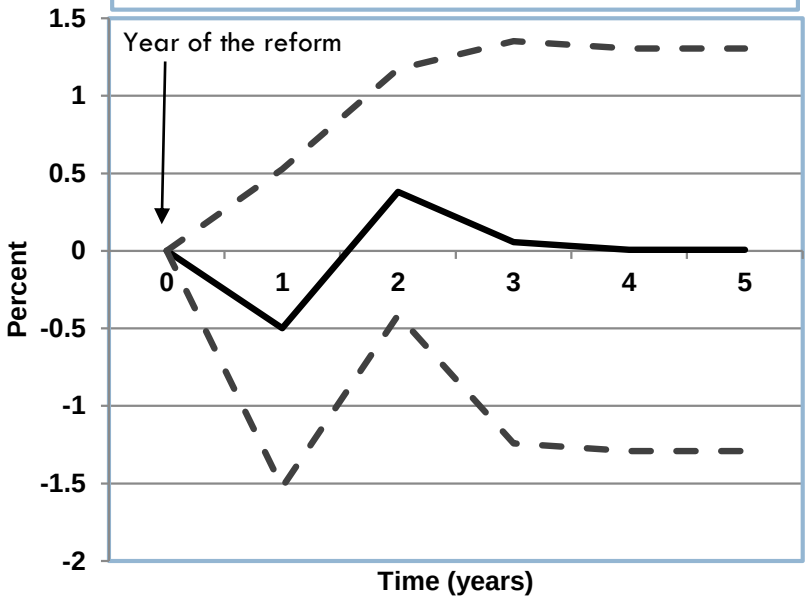
Subramanian and Rodrik on financial globalization

"The Puzzling Lure of Financial Globalization" Project Syndicate, Sep. 25, 2019

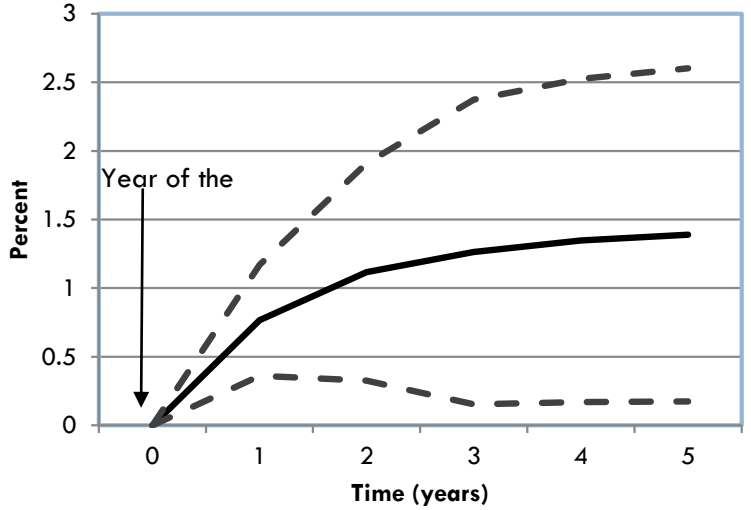
- "The preponderance of evidence suggests that financial globalization, especially unrestricted hot money," creates instability and crises and dampens growth by making the tradable sector less competitive.
- "entrenched financial interests have stood in the way of controls on cross-border capital flows"
- with low growth and interest rates in advanced economies acting as push factors, "there is a danger that developing will be tempted to pursue increased foreign borrowing"

Financial globalization has little impact on average incomes but increases income inequality

Effect of capital account liberalization on income



Effect of capital account liberalization on income inequality

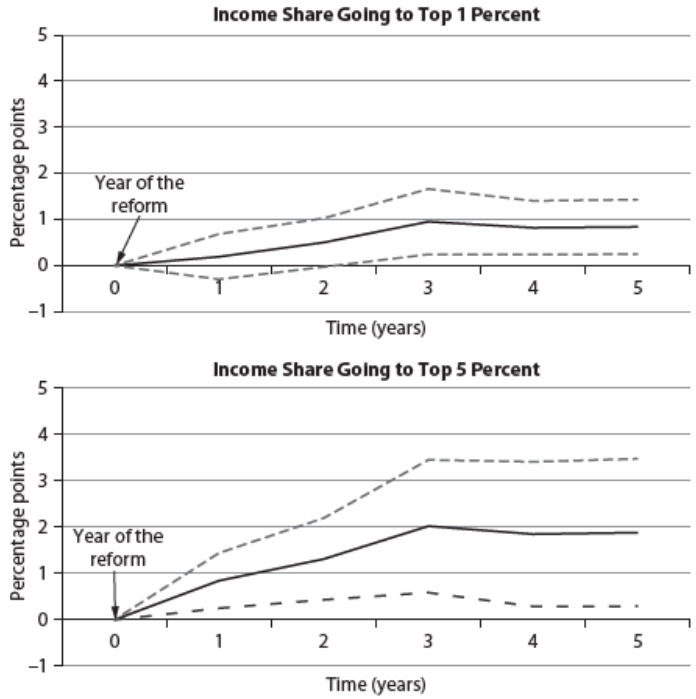


Furceri, Loungani and Ostry (*Journal of Money, Credit and Banking*, 2019); Ostry, Loungani and Berg (2019, Chapter 5)

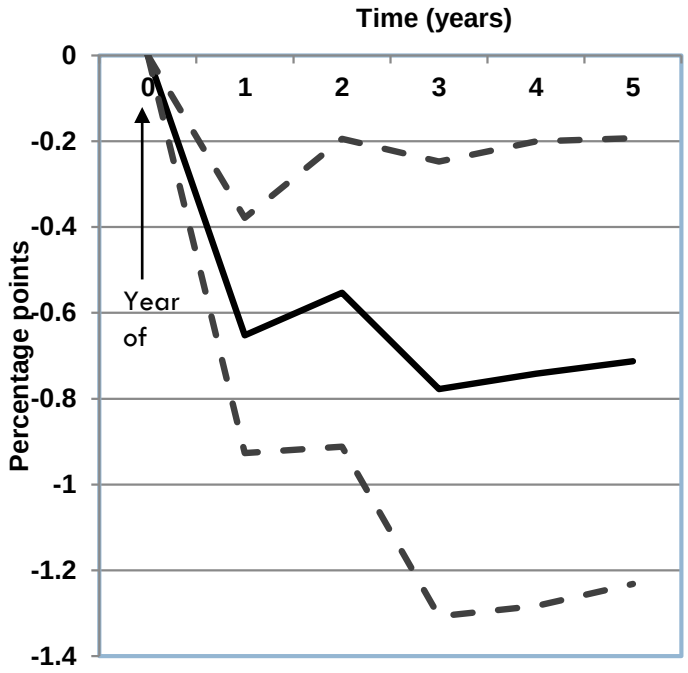
Financial globalization raises top income shares and lowers labor's share of income

FIGURE 5.4: The Effect of Capital Account Liberalization on the Top Income Shares

Capital account liberalization increases the shares of income owned by the top 1 percent, top 5 percent, and top 10 percent.



The Effect of Capital Account Liberalization on Labor Share of Income



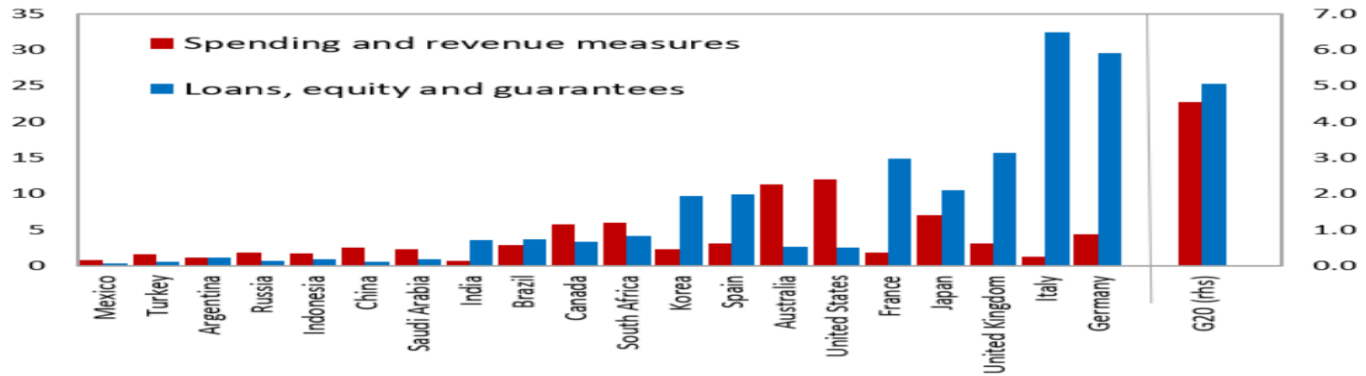
Furceri, Loungani, Ostry and Pizzuto (*Comparative Economic Studies*, forthcoming); Ostry, Loungani and Berg (2019, Chapter 5)

c) Will governments scale back public debt rapidly?

Global fiscal support totals $9 trillion (as of May 2020)

Fiscal firepower
As the pandemic and Great Lockdown continue, countries have now deployed $9 trillion to help people and firms get through the crisis, which is $1 trillion more than in April 2020.

(Announced fiscal measures in G20 economies, % of GDP)



Sources: National authorities; and IMF staff estimates as of May 13, 2020.
Note: G20 = Group of twenty. G20 aggregates are calculated using PPP-adjusted GDP weights. Estimates focus on government discretionary measures that supplement existing automatic stabilizers, which differ across countries in their breadth and scope.

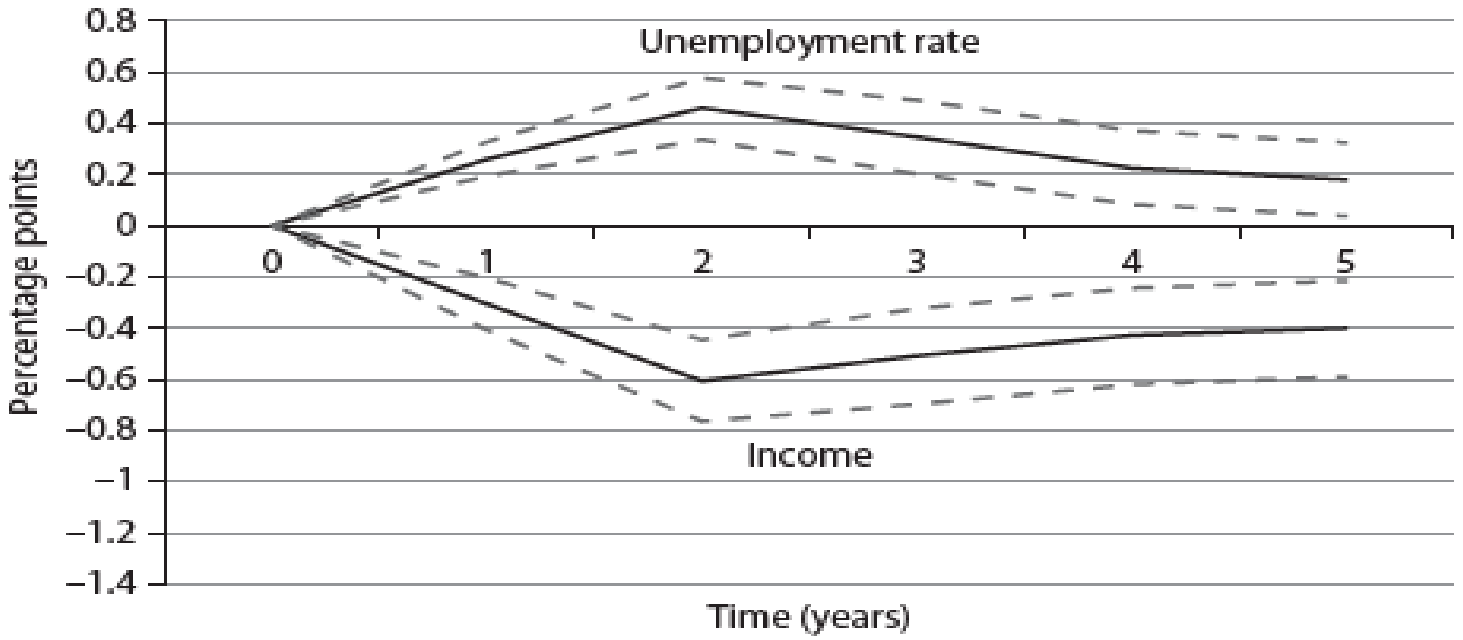
INTERNATIONAL MONETARY FUND

- Worry about public debt-to-GDP ratios
- But rapid pivot to austerity will hurt

Austerity hurts: it's followed by a decline in average incomes and an increase in unemployment

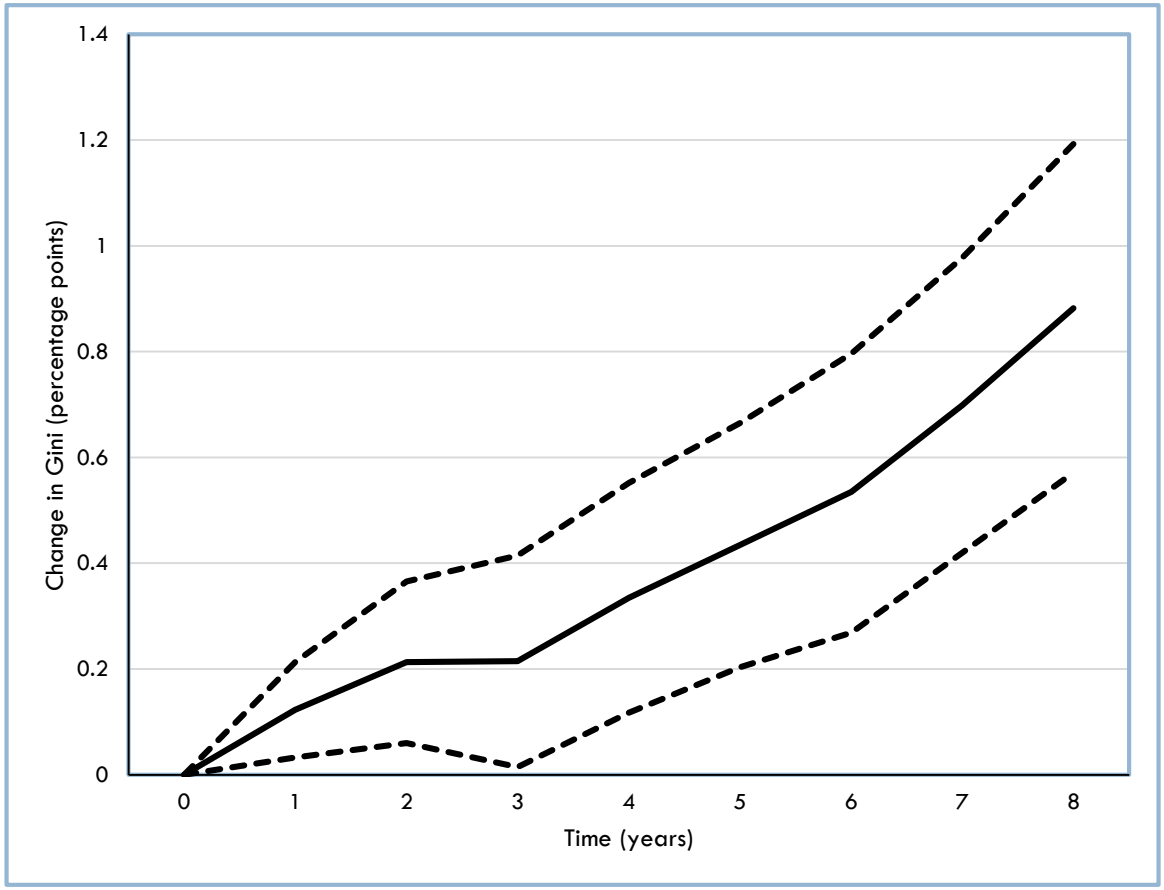
FIGURE 6.1: Effect of Fiscal Consolidation on Income and Unemployment

Fiscal consolidation reduces incomes and raises unemployment in the short run.



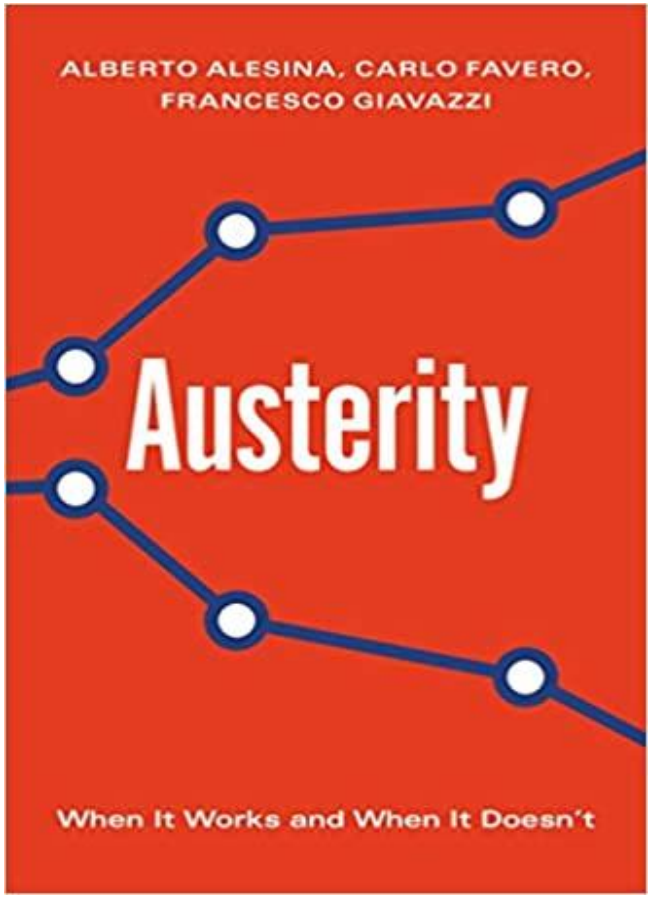
Guajardo, Leigh and Pescatori (Journal of the European Economic Association, 2014); see also Ostry, Loungani and Berg (2019, Chapter 6)

Austerity is followed by an increase in income inequality



Ball, Furceri, Leigh and Loungani (UN-DESA e-book, 2013); see also Ostry, Loungani and Berg (2019, Chapter 6)

Pace and design of austerity matter



- Austerity policies can be designed so that output losses are minimized
- Design of policies should take distributional impacts into account, not just the aggregate loss in output

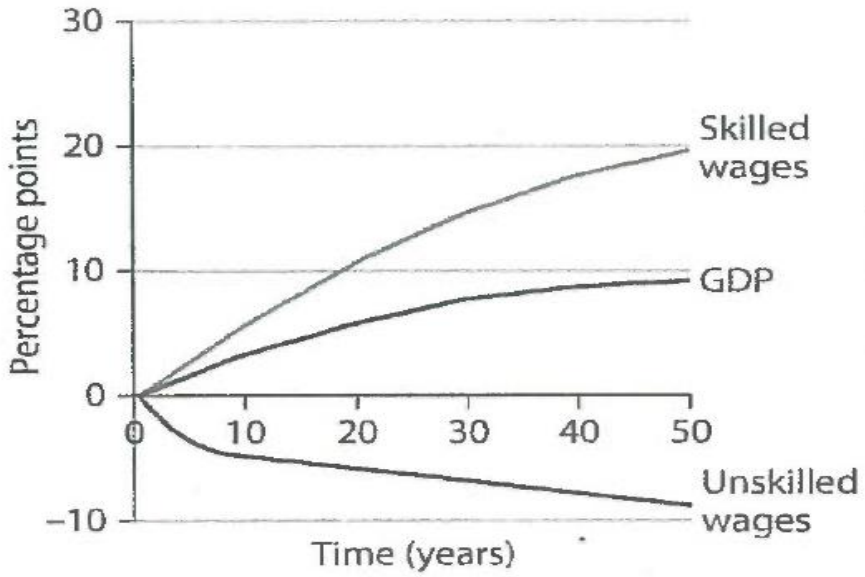
D) Will experience of pandemic speed automation?

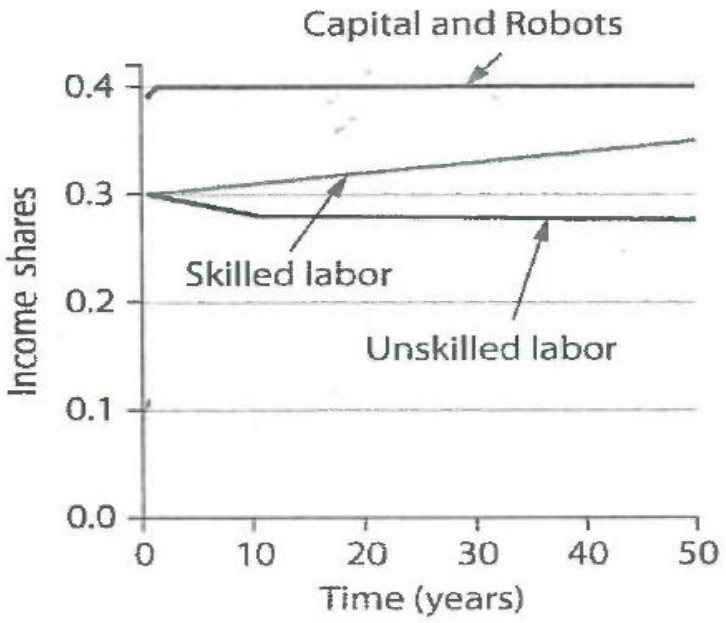
"The robots are ready as Covid-19 recession spreads" (Muro, Maxim and Whiton, Brookings, 2020)

- "Any downturn is likely to bring a new bout of structural change in the labor market and its demand for skills."
- "If it extends for a while, the downturn could induce firms in food service, retail, and administrative work to restructure their operations toward greater use of technology and higher-skilled workers."
- "For beleaguered lower-skill workers, these changes will complicate the return to normalcy."

In calibrated model, increase in robot efficiency leads to persistent gap between skilled and unskilled workers

Increased robot efficiency lowers wages of unskilled workers and their share of income





Ostry, Loungani and Berg (Chapter 8), based on Berg, Buffie and Zanna (*Journal of Monetary Economics*, 2018)

Conclusion

- Past major epidemics have raised inequality
- Question: Will this time be different?

Answer: "No, unless …"

A) Attitudes and policies really change; talk is cheap

B) globalization is restored with inclusiveness in mind

C) public debt pared back slowly rather than by knee-jerk austerity

D) gains from automation widely shared in society