BOX 3.1 How do deep recessions affect potential output in EMDEs?

The global economy is currently in the midst of one of the deepest recessions in living memory, which is hitting emerging market and developing economies (EMDEs) hard. Historically, recessions accompanied by financial crises or, in energy exporters, by oil price collapses tend to generate particularly deep and lasting damage to potential output, especially in countries that enter the recession with larger vulnerabilities. The average EMDE is now more vulnerable to financial stress than before the 2007-09 global financial crisis, and the average energy-exporting EMDE remains as dependent on energy exports as before the last oil price collapse in 2014. Under these circumstances, the recessions associated with the COVID-19 are likely to have a severely adverse and lasting impact on potential output. Pro-active monetary and fiscal policies, and structural reforms, could moderate this damage.

Introduction

A deep global recession is underway, of a severity that is unmatched in decades. The world economy is expected to start recovering once the pandemic recedes and restrictions on economic activity are lifted.

However, historically, the setbacks to investment and potential output (the level of output an economy can sustain at full capacity and employment) caused by deep recessions have been long-lasting.[1] Beyond the immediate health crisis, two key features of the current global recession increase the risk of lasting damage to potential output in EMDEs. First, even if financial markets appear

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Note: This box was prepared by Sinem Kilic Celik, Cedric Okou, and Franziska Ohnsorge, with research assistance from Hrisyana Doytchinova.

[1] Potential output is estimated using a production function approach (Kilic Celik, Kose, and Ohnsorge 2020; World Bank 2018).

to have stabilized for now, tight financial conditions and record-high debt increase the probability of prolonged balance sheet repair or even outright financial crises. Second, oil prices have suffered a record collapse. Today's average EMDE is more vulnerable to financial market stress than before the 2007-09 global financial crisis, with higher government and corporate debt, and wider fiscal deficits. And energy exporters remain as dependent on energy exports as before the last oil price plunge in 2014 (Figure 3.1.1).

Against this backdrop, this box explores the likely impact of COVID-19 on potential output by addressing the question: How do recessions, crises and oil price plunges interact to generate long-term implications for potential growth?

The box builds on earlier work that found that deep recessions lower potential output levels four to five years


FIGURE 3.1.1 EMDE vulnerabilities to financial stress and oil price plunges

Today's average EMDE is more vulnerable to financial market stress, with higher debt and wider fiscal deficits, than before the global financial crisis. Today's average energy-exporting EMDE is as dependent on commodity exports as before the last oil price plunge.
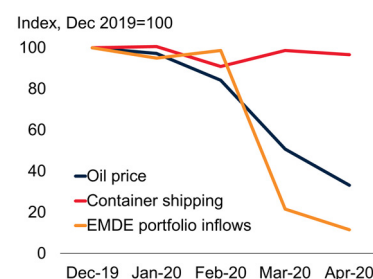

A. EMDE government and corporate debt, 2007 and 2019
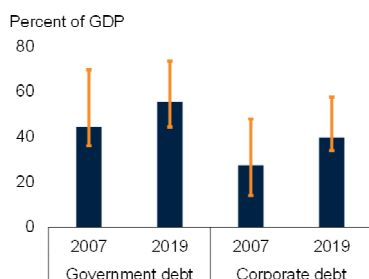
B. Commodity export share of energy exporters, 2013 and 2018
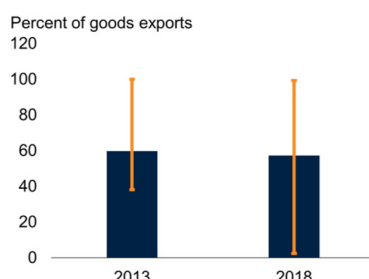
C. Economic activity indicators

Source: Institute of International Finance; Institute of Shipping Economics and Logistics; International Monetary Fund; World Bank, World Integrated Trade Solution; World Bank.
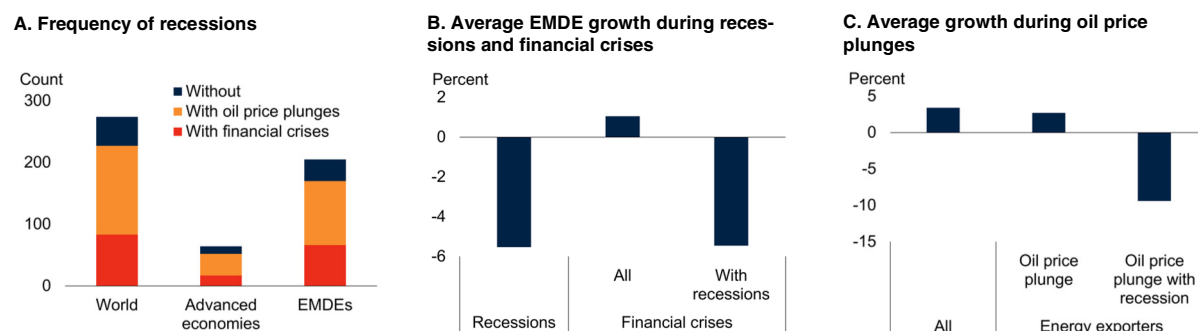A.B. Bars show unweighted averages. Whiskers show interquartile range. Based on data for up to 150 EMDEs (A) and up to 27 energy-exporting EMDEs (B).
C. Net portfolio inflows to EMDEs, based on data for 20 economies. EMDE = emerging market and developing economies.
Click here to download data and charts.

BOX 3.1 How do deep recessions affect potential output in EMDEs? *(continued)*

FIGURE 3.1.2 Growth: Recessions, crises, and oil price plunges

In EMDEs, three-quarters of recessions have been accompanied by financial crises or oil price plunges. These tend to be associated with particularly steep output contractions.

A. Frequency of recessions

B. Average EMDE growth during recessions and financial crises

C. Average growth during oil price plunges

Source: World Bank.
Note: Based on a sample of 32 advanced economies and 91 emerging market and developing economies (EMDEs) with available data for potential growth for 1982-2018 (Annex 3.4). Recessions are years with negative growth; in the case of consecutive years with negative growth, the year of output trough is selected. Financial crises are banking, currency, or debt crises, as defined as in Laeven and Valencia (2018). Oil price plunges occurred in 1986, 1990-91, 1998, 2001, 2008, and 2014-15.
B. Unweighted average for EMDE regression sample. Difference between the bars are illustrative and not statistically significant because of wide heterogeneity.
Click here to download data and charts.

after the event (World Bank 2018). It extends this work by analyzing the extent to which the long-term impact of recessions differs when they are accompanied by financial crises or oil price plunges.

Impact of recessions with crises and oil price plunges

The COVID-19 pandemic presents a public health crisis. The direct impact of sickness and mortality, and the associated restrictions to stem the pandemic, alone would constitute a major global economic shock. In addition, many EMDEs are facing exceptionally severe economic pressures from financial and oil markets. The 2020 global recession will be extraordinarily deep and prolonged (Chapter 1). To shed light on its implications over a longer time horizon, this section presents evidence on the long-term output cost of severe recessions and how they interact with financial crises and oil price plunges.

Data and methodology. The medium-term impact of recessions on potential output is estimated using a local projections model (Annex 3.4). Recessions are defined as years of negative output growth (see Huidrom, Kose, and Ohnsorge 2016). Financial crises include banking, currency, or debt crises defined as in Laeven and Valencia (2018). Years with oil price plunges are those in which the

average of the Brent, Dubai and West Texas Intermediate oil prices plunged by 30 percent or more over a six-month period (1986, 1990-91, 1998, 2001, 2008, and 2014-15).
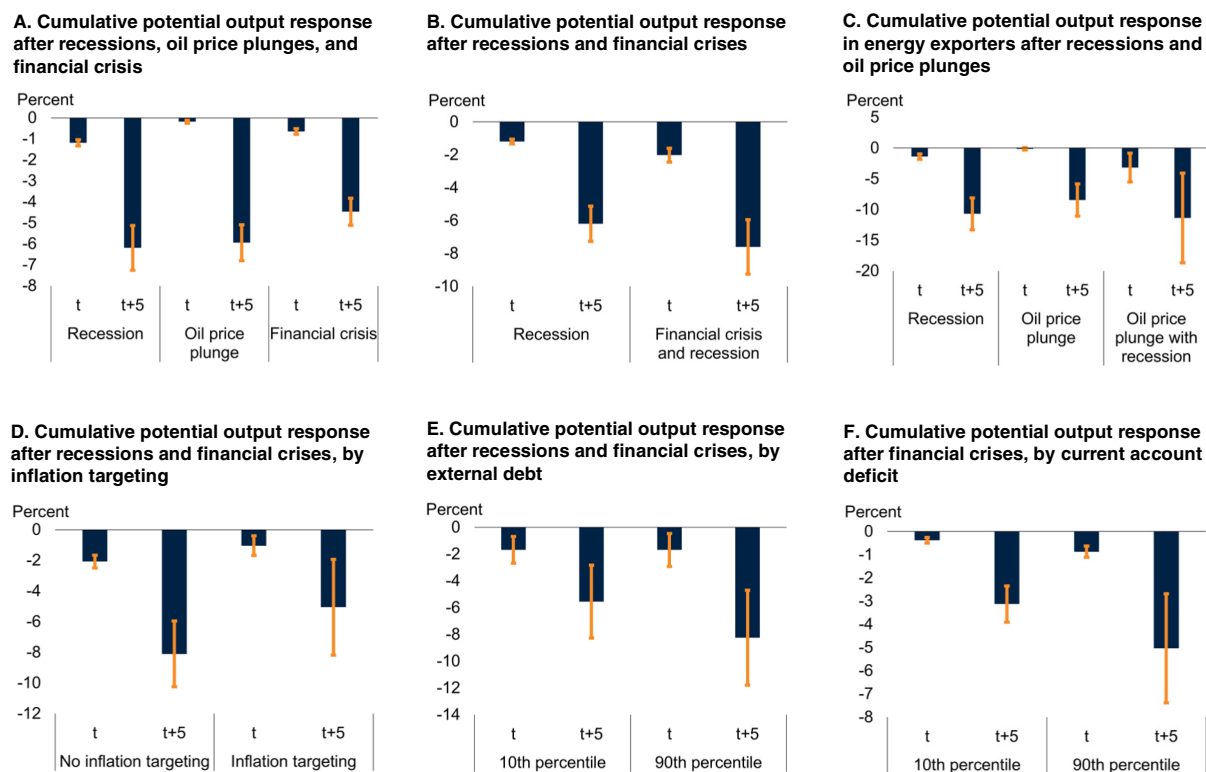
Short-term output losses. In the average year of recession, output declined by more than 3 percent in advanced economies and more than 5 percent in EMDEs. On their own, neither financial crises nor oil price plunges were associated with recessions (Figure 3.1.2). However, when they did accompany recessions, financial crises or oil price plunges were associated with steep output losses.

- *Financial crises.* On average, economies still grew by almost 1 percent in the year of financial crisis and the following year. More than one-half of these events were currency crises, which tend to be associated with milder output losses (Cerra and Saxena 2008; Candelon, Carare, and Miao 2016). Financial crises that did accompany recessions (about 24 percent of financial crises in the sample) were associated with output contractions of more than 5 percent.

- *Oil price plunges.* Oil price plunges were, on average, accompanied by more than 3 percent growth in the same year. Energy-exporting EMDEs historically have had large fiscal buffers, which have allowed them to provide substantial policy support to their domestic economies: their growth averaged more than 2

BOX 3.1 How do deep recessions affect potential output in EMDEs? *(continued)*

FIGURE 3.1.3 Potential output in EMDEs: Recessions, crises, and oil price plunges

Recessions in EMDEs, especially those associated with financial crises or (for energy exporters) oil price plunges, lowered potential output over the medium-term. Potential output losses were lower when countries entered these events with lower external debt or current account deficits, and with an inflation-targeting monetary policy framework.

A. Cumulative potential output response after recessions, oil price plunges, and financial crisis

B. Cumulative potential output response after recessions and financial crises

C. Cumulative potential output response in energy exporters after recessions and oil price plunges

D. Cumulative potential output response after recessions and financial crises, by inflation targeting

E. Cumulative potential output response after recessions and financial crises, by external debt

F. Cumulative potential output response after financial crises, by current account deficit

Source: Ha, Kose, and Ohnsorge (2019); World Bank.
Notes: Data and methodology are detailed in Annex 3.4. Charts show impulse responses for 75 EMDEs from a local projections model. Dependent variable is cumulative slowdown in potential output after a recession, financial crisis, or oil price plunge event. Year t is the year of the event. Bars show coefficient estimates; vertical lines show 90 percent confidence bands.
E. 10th percentile of external debt in EMDEs is 27 percent of GDP; 90th percentile of external debt in EMDEs in 73 percent of GDP.
F. 10th percentile of current account deficit in EMDEs is 1 percent of GDP; 90th percentile of current account deficit in EMDEs is 10 percent of GDP.
Click here to download data and charts.

percent in the year of the plunge (Stocker et al. 2018). In cases when oil price plunges were accompanied by recessions (17 percent of recessions in energy-exporting EMDEs), the output contractions in energy exporters were especially deep (about 10 percent).

Medium-term potential output losses. In line with earlier findings, recessions left a legacy of lower potential output for four to five years after their onset. Five years after the average recession, potential output were about 6 percent below baseline in EMDEs (Figure 3.1.3).

Financial crises and oil price plunges alone—including those which were not associated with outright recessions—

also tended to be associated with lower potential output over the medium term. Five years after a financial crisis, potential output in EMDEs was about 4 percent below the baseline. Five years after an oil price plunge, potential output in energy-exporting EMDEs was about 8 percent below the baseline.

Recessions that were accompanied by financial crises caused larger long-term potential output losses in EMDEs than recessions without financial crises. Five years after a recession-cum-crisis, potential output in EMDEs remained almost 8 percent below baseline—more than the 6 percent potential output loss following the average recession.

BOX 3.1 How do deep recessions affect potential output in EMDEs? *(continued)*

In energy-exporting EMDEs, oil price plunges that were accompanied by recessions were associated with particularly severe and lasting potential output losses. On average five years after such plunges-cum-recessions, potential output in energy exporting EMDEs remained 11 percent below the baseline.

Effect of policy regimes. Long-term potential output losses are somewhat more modest for countries that enter the recession with fewer vulnerabilities. For example, estimated potential output losses five years after a combined recession and financial crisis were lower in countries that entered the recession with external debt in the bottom decile of the sample than in those that entered it in the top decile of the sample. Similarly, EMDEs with inflation-targeting monetary policy regimes suffered about one-half the potential output losses in recessions and financial crises than countries with other monetary policy regimes. EMDEs that entered financial crises with narrower current account deficits witnessed lower potential output losses after five years.

Conclusions

The immediate policy priority is to address the COVID-19 health crisis. Policies also need to take into account the lasting economic damage from the deep recession triggered by the health crisis. Evidence presented in this box points

to two broad sets of priorities to improve growth prospects.

First, since financial crises cause longer-lasting and more severe output losses, EMDEs need to avoid sliding into a financial crisis. Macroprudential policies as well as monetary and fiscal policy support and international assistance are critical to ensure the maintenance of confidence, the stability of lending institutions, and normal flows of credit to households and firms.

Second, oil price plunges cause particularly lasting output losses in energy exporters when they are accompanied by outright output contractions—as will be the case for energy-exporting EMDEs in 2020 (Chapter 1). Once the current crisis subsides, efforts to diversify these economies can help reduce their vulnerability to oil price shocks (Chapter 4). Such measures include ensuring appropriate trade policies that promote diverse exports, infrastructure investment to enable private sector competition, competition regulation to avoid market concentration, and support for innovation through research and development (Ruch 2019b). They also include reforms to establish institutional frameworks for sustainable fiscal and monetary policies. These would help to buffer external shocks and macroeconomic volatility in the short run, and to provide a growth-friendly environment for the long run.

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they cause long-term unemployment that leads to human capital loss and reduced job-search activity.[9]

- *Oil price plunges and recessions.* Steep drops in the price of oil have a direct negative impact in oil-exporting economies that magnifies the depth and duration of a recession. They also weigh on global growth in the short-term (Chapter 4). Once the global economic recovery gains momentum, however, the overall effect of lower oil prices, while they are sustained, on global growth may be positive, through increased real incomes, lower

inflation and interest rates, and the expansion of energy-intensive activities.

Estimates of potential output impacts. Empirically, recessions were associated with large and lasting potential output losses in EMDEs, especially when accompanied by financial crises. Five years after a recession, EMDE potential output was about 6 percent below baseline and five years after recessions with financial crises, EMDE potential output was about 8 percent below baseline (Box 3.1; Figure 3.9). For energy-exporting EMDEs, recessions accompanied by oil price plunges were particularly damaging: on average, five years after such episodes, potential output in energy exporters was about 11 percent below baseline. These potential output losses were somewhat smaller when economies entered recessions and financial crises with lesser

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[9] For loss of access to bank lending for creative firms, see Queralto (2019); for lower labor productivity after financial crises, see Oulton and Sebastia-Barriel (2017); and for lower productivity-enhancing investment, see De Ridder (2016) or, specifically, for R&D spending, see Fatás (2000).