



Special Series on COVID-19

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Macrofinancial Considerations for Assessing the Impact of the COVID-19 Pandemic

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This note maps and discusses macrofinancial channels and spillovers that could amplify the negative economic and financial impact of the COVID-19 outbreak. In addition to macroeconomic repercussions, it covers three important macrofinancial aspects—financial market volatility and stress, impaired credit intermediation, and spillovers and amplification through structural macrofinancial linkages. It also points to some approaches and tools that country authorities can use to quantify the macrofinancial impact. The note does not provide a detailed discussion of the policy responses, but it does connect macrofinancial challenges with policy options discussed in other MCM Special Series notes.

I. INTRODUCTION

The COVID-19 pandemic is morphing from a health crisis into an economic crisis, and a complete picture of its economic impact requires a careful consideration of relevant macrofinancial channels and spillovers.

- The COVID-19 outbreak is a pure health shock, exogenous to the economy and the financial system. As the virus rapidly spreads across regions and borders, governments around the globe have implemented necessary measures—such as ‘lockdowns’, quarantines, and travel restrictions—to contain the spread of COVID-19 (red box, Figure 1).
- The pandemic, however, has triggered unprecedented repercussions for the global economy. Together with the containment measures, it has created supply-side disruptions and depressed aggregate demand (orange boxes and arrows, Figure 1).
- It has also rattled global financial markets. Countries have seen runs on risky assets, unprecedented stock market crashes, widening credit and liquidity spreads, signs of strained global liquidity, and large capital flows (blue box and arrow, Figure 1).
- The resulting economic damages have been amplified through endogenous macrofinancial feedback mechanisms. The initial adverse economic impact has been amplified by impaired credit intermediation as a result of a global liquidity crunch, strains in corporate and household cash flows and balance sheets, and

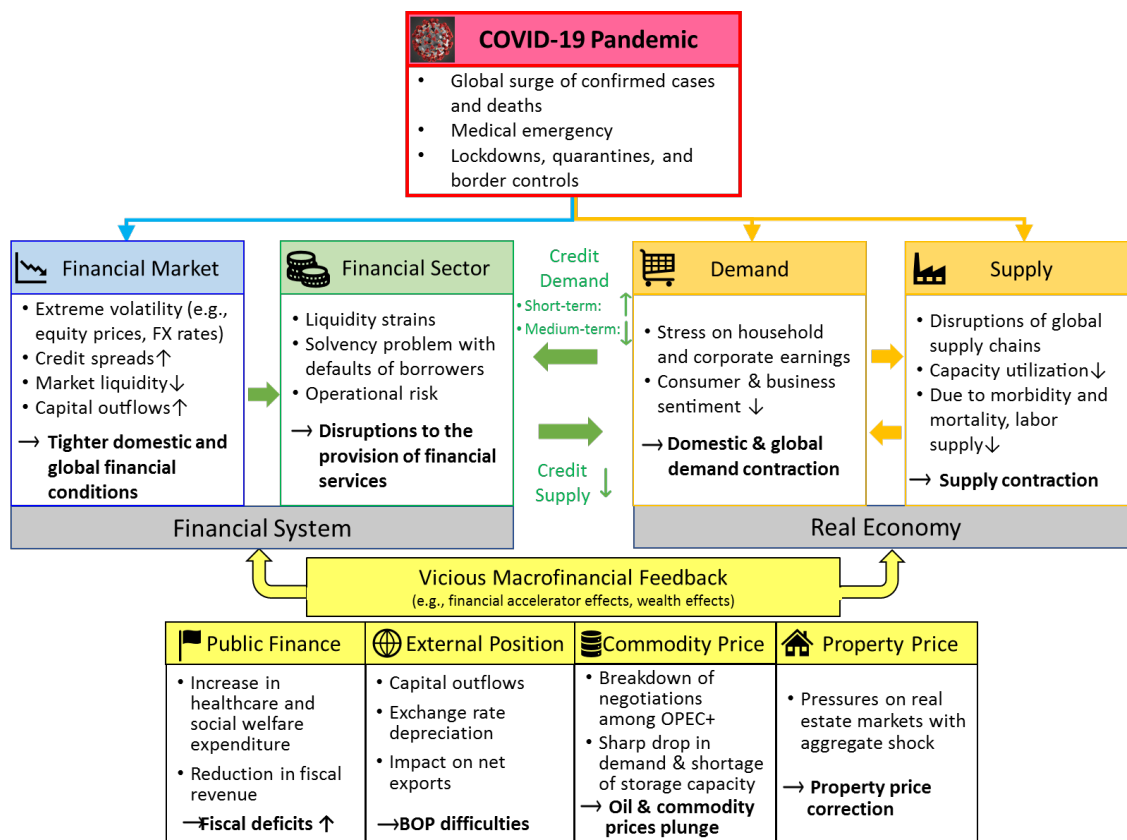
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financial institutions' weakening solvency and funding positions. The pandemic could have long-lasting effects, with lower potential output (green box and arrows, Figure 1).

- In some countries, structural macrofinancial linkages could worsen and prolong the negative impact of the pandemic, particularly in countries with (i) strong sovereign-financial nexus, (ii) reliance on external financing, (iii) dependence on commodities, and (iv) exposure to real estate markets. In short, countries are facing significant (albeit different) macrofinancial stability risks (yellow boxes and arrows, Figure 1).

This note provides an overview of the abovementioned macrofinancial transmission and spillover channels. It aims to assist country authorities in how to map countries' key macrofinancial channels and effects. The note also provides links to relevant policy discussions in other MCM special series notes. Finally, the note points to approaches and tools that country authorities can use to quantify the pandemic's macrofinancial impact. Section II explains the economic repercussions of the pandemic (orange boxes and arrows, Figure 1); Section III discusses how the pandemic has induced financial market volatility and stress (blue box and arrow, Figure 1); Section IV describes how the macrofinancial feedback between the economic contraction and a weaker financial sector could impair credit intermediation (green box and arrows, Figure 1); and Section V shows how country-specific structural weaknesses could amplify the negative impact (yellow boxes and arrows, Figure 1).

FIGURE 1. Transmission Channels of the Macrofinancial Impact of the COVID-19 Pandemic



Source: IMF staff.

II. MACROECONOMIC IMPACT

The COVID-19 pandemic has triggered unprecedented repercussions for the global economy. Together with the containment measures, it has disrupted supply-side chains and depressed aggregate demand. Firms in the retail, leisure, hospitality, and travel sectors have been severely impacted, and those in other sectors (e.g. automotive

and electronics) remain vulnerable to supply-chain disruptions. Smaller enterprises are at greater risk. Households face falling income and rising unemployment. The loss of income, fear of contagion, falling confidence, and rising precautionary savings will lead to a broad-based reduction in private investment and consumption, causing a demand-deficient economic contraction.² Lastly, the pandemic could have long-lasting effects, including a permanent potential output loss owing to impaired human capital (from mortality and sustained unemployment) and reduced productivity (from widespread bankruptcies).

Containment efforts have reduced the severity of the health crisis while causing a dramatic decline in economic activity. Measures, such as ‘lockdowns’, closures of non-essential businesses, travel restrictions, and social distancing, need to be implemented timely and forcefully to slow the spread of the COVID-19 and enable healthcare systems to lower the death toll. However, these measures would reduce the production and consumption of goods and services, with substantial macroeconomic costs (see 2020Q1 data on China’s economic activity) and make it challenging to stimulate economic activities with conventional policy tools. [Eichenbaum, Rebelo, and Trabandt \(2020\)](#) argued that containment measures can help achieve a socially optimal outcome as infected people do not fully internalize the effect of their economic decisions on the spread of the virus.³ It is important that country authorities reflect the actual and potential impact of containment efforts in the macrofinancial baseline analysis and risk assessment.

III. FINANCIAL MARKET VOLATILITY AND STRESS

Financial markets’ reactions provide a useful forward-looking “signal” for assessing the impact of the COVID-19 outbreak. The runs on risky assets—particularly, equities and corporate bonds—reflected investors’ reassessment of underlying fundamentals (e.g., reduced earnings and increased default risks) and an increase in risk aversion, resulting in rising risk premia and falling asset prices. The ensuing large-scale portfolio rebalancing raised market volatility. The rush to safe-haven assets happened within and across countries, with the latter driving large-scale capital outflows from emerging market and developing economies (EMDEs). In addition, the breakdown of the talks among OPEC+ countries amid the global pandemic triggered a sharp decline in oil prices. Assessing the development of equity prices and corporate bond spreads can help (i) understand the financial performance and credit risk of nonfinancial firms, and (ii) gauge the extent of business confidence and investment prospects ([April 2020 Global Financial Stability Report \(GFSR\)](#)).

A sharp tightening of financial conditions raises downside risk to economic growth. Before the COVID-19 outbreak, easy financial conditions had encouraged risk-taking and fueled a buildup of vulnerabilities: institutional investors had increased their holdings of riskier and more illiquid assets; corporate sector vulnerabilities had become elevated in several systemically important economies; and EMDEs had increased their reliance on external borrowing ([October 2019 GFSR](#)). The growth-at-risk framework⁴ is one method that can be used to quantify near-

² [Guerrieri, Lorenzoni, Straub, and Werning \(2020\)](#) presented a theory of Keynesian supply shocks—supply shocks in the vulnerable sectors such as business shutdowns, firm exits, and job destruction (during the COVID-19 pandemic) could reduce demand in other sectors. As a result, there would be an aggregate demand shortfall particularly in the setting with incomplete markets and liquidity constrained consumers.

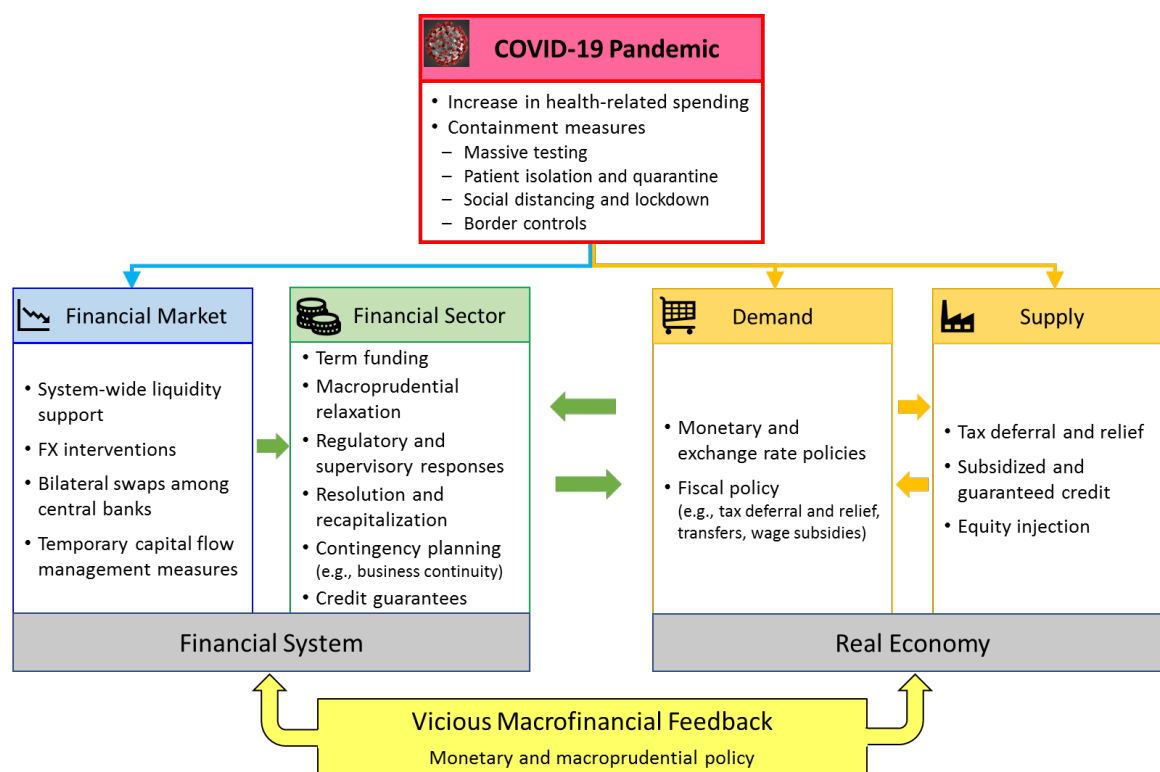
³ In the macro-contagion model, agents would reduce consumption and work to limit the likelihood of getting contracted to the disease. In a competitive equilibrium, economic activity would contract, but the death toll would still be too large.

⁴ The framework enables the derivation of the distribution of future GDP growth based on financial conditions, macrofinancial vulnerabilities, and other factors (e.g., external demand and commodity prices); see [October 2017 GFSR](#) and [IMF WP/19/36](#). Financial conditions should capture domestic long-term interest rates, bank lending conditions, and market risk-pricing conditions, as well as global financial conditions. Macrofinancial vulnerabilities should cover weaknesses in corporate and

term downside risk to economic activity (in addition to financial stability) as a result of the sharp tightening in financial conditions. The prevailing heightened macrofinancial vulnerabilities would amplify the impact of the pandemic, contributing to greater downside risk.

Understanding market liquidity pressures is the first step towards designing appropriate policy interventions to maintain well-functioning core funding markets. In the second week of March, market liquidity of safe-haven assets (e.g., U.S. treasuries) dried up and U.S. dollar funding pressures emerged, prompting interventions by major central banks.⁵ The emergence of arbitrage opportunities pointed to low market liquidity and bottlenecks of liquidity flows (possibly owing to inability to obtain funds or higher risk aversion). In each financial system, well-functioning core funding markets, such as money markets, public debt markets, and foreign-exchange markets, are fundamental to ensure efficient liquidity distribution, proper risk-pricing, and smooth credit flows. These core funding markets should be identified and monitored. If stress arises, system-wide liquidity support to core funding markets in addition to banks would become necessary, as stressed in MCM note on “[Central Bank Support to Financial Markets in the Coronavirus Pandemic \(with Q and A\)](#)” (Figure 2).⁶

FIGURE 2. Policy Measures to Address the Macrofinancial Impact of the COVID-19 Pandemic



Source: IMF staff.

household balance sheets, housing market imbalances, and credit cycles (e.g., credit-to-GDP gap). Debt sustainability and financing need of the public and external sectors, as well as financial sector vulnerabilities (e.g., unstable funding structure and nonperforming assets), could also be relevant.

⁵ The Federal Reserve extended U.S. dollar swap lines to the central banks of Australia, Brazil, Denmark, Korea, Mexico, New Zealand, Norway, Singapore, and Sweden, beyond the six central banks with the permanent lines.

⁶ Interventions have been carried out in the euro area, Japan, the U.K., and the U.S. to support market-based finance, e.g. commercial paper markets. In some EMEs (e.g., Colombia and India), central banks intervened in government bond markets to ensure adequate liquidity.

IV. CREDIT INTERMEDIATION

Monitoring the weaknesses in corporate and household balance sheets helps gauge the extent of credit risk faced by the financial system. Prior to the pandemic, corporates and households had become more leveraged on the back of low interest rates. A sharp rise in financing costs due to tightening financial conditions together with income shocks could weaken their debt-servicing capacity, leading to widespread defaults. In addition to monitoring overall balance sheets, conducting debt-at-risk analysis can give insight about the proportion of financially distressed firms and households, as well as their financial stability implications.⁷ Some authorities have provided guaranteed and subsidized credit, adopted loan repayment holidays, and employed fiscal measures (e.g., wage subsidies) to alleviate liquidity stress faced by firms and households. However, in countries where financial access is low for businesses and households, liquidity stress will likely be more severe given the more limited scope of such measures.

Forward-looking analysis of banks' solvency and funding positions is important for assessing their resilience to the pandemic.⁸ Even though the global regulatory reform after the global financial crisis has made banks more resilient to withstand solvency and liquidity pressures, they will take a big hit from the economic contraction and the financial market stress. Banks have already incurred market losses following bouts of financial market stress, and they will see a sharp increase in nonperforming assets, which should be proactively addressed through loan restructuring (and other policy approaches) while prudential standards are maintained.⁹ Together with reduced non-interest income (due to reduced financial activity), mounting credit losses from corporate and household exposures could push banks into loss-making territory (especially banks in advanced economies whose profitability was already low). Some banks could face capital shortfalls, constraining their capacity to provide credit. In addition, banks could face liquidity pressures. For instance, firms may want to draw on their credit lines with banks (reportedly, big global firms in the hard-hit sectors utilized their credit lines to build up liquidity in early March).¹⁰ Also, freezing wholesale funding markets and withdrawals of corporate deposits could affect banks' liquidity, and solvency concerns could trigger liquidity pressures in the form of higher funding costs or runs on deposits. Interconnectedness within the financial system can further transmit and amplify financial stress.

Evaluating the banking sector's capacity to meet credit demand is important for assessing the impact of impaired credit intermediation on economic activity. While some credit demand could initially increase as firms utilize credit lines, the economic contraction and weaker consumer and business confidence will depress credit demand. Credit supply could also decline as risk aversion increases, concerns about borrowers' creditworthiness grow, and banks face precarious solvency and funding conditions. As credit crunch and liquidity stress amplify the impact of the pandemic on the real economy, banks should make use of existing capital and liquidity buffers to absorb credit and market losses and withstand funding pressures. In cases where the impact is sizable or long-lasting and bank capital adequacy becomes a concern, authorities should ask banks to submit credible plans to restore their capital.

⁷ The debt-at-risk exercise first identifies financially weak firms and households based on the weak debt-servicing capacity (e.g., household debt service-to-income above 40 percent, or corporate earnings before interest, tax, depreciation, and amortization (EBITDA) less than net interest expense), and then quantifies debt-at-risk, which is debt of these financially weak borrowers. Financial stability implications should also account for existing collateral.

⁸ Inference from previous stress test results can be drawn on, but careful interpretation is required given different adverse scenarios being considered under previous exercises and/or different transmission channels of credit risk.

⁹ Also, restructured loans should be properly monitored, and credit loss should be appropriately recognized. Capital and liquidity buffers can be used; the early intervention regime (and corrective measures) could be temporarily put on hold, but credible recovery plans are needed.

¹⁰ Besides draining banks' liquidity, the drawdown of credit lines also increased banks' risk-weighted assets.

At some point, bank resolution or recapitalization could be considered as a last resort, together with clear communication, to restore confidence, as stressed in MCM note on [“Public Communication during a Financial Crisis”](#).

Market-based finance is important in many countries and should be monitored for signs of stress. In many countries, the importance of market-based finance has grown significantly after the global financial crisis.¹¹ In the low interest rate environment, many firms increased their bond issuance. Institutional investors (e.g. insurers and pension funds) and asset managers have also shifted assets towards those with lower credit ratings and/or longer maturity to obtain higher yields. Furthermore, exposures to the commercial real estate sector and market-based mortgage finance have also increased in some jurisdictions. As a result of significant financial market stress, we have seen recently, these financial institutions will incur losses, and their portfolio rebalancing (some could be driven by retail investors) could amplify market volatility and constrain credit intermediation. With growing concerns of credit risk and increased risk aversion, credit spreads have widened. Financially weak firms will find it difficult to raise additional funds in markets. Additional stress could emerge when many issuers get downgraded to a non-investment rating, which has already started to take place, as investment policies may prevent investment funds to hold such bonds.

Ensuring the continuity of critical financial services is key to maintaining financial stability. In addition to credit intermediation, the financial system provides insurance contracts, facilitates asset management, trades financial transactions, and settles payments. Beside banks, nonbank financial institutions could be significantly affected during the unfolding crisis, thus warranting close monitoring especially in a case that they are systemic. In particular, life insurers and pension funds could see substantial investment loss due to falling asset prices and would face significant challenges to generate sufficient investment returns in the low interest rate environment.¹² It is also important to ensure operational continuity of the central bank (including cash management), financial institutions and financial market infrastructures, and to review and update contingency planning to enhance preparedness and minimize potential business disruptions during the pandemic, as advocated in MCM notes on [“Central Bank Operational Risk Considerations for COVID-19”](#), [“Pandemic Preparedness for Financial Institutions”](#), and [“Regulatory and Supervisory Response to Deal with Coronavirus Impact—Securities Markets”](#).

V. SPILLOVERS AND AMPLIFICATION THROUGH STRUCTURAL MACROFINANCIAL LINKAGES

For some countries, structural macrofinancial linkages could amplify the negative macrofinancial impact of the pandemic beyond economic slowdown and reduced credit. Four linkages are prominent in many countries: (i) sovereign-financial nexus where weakening public finances can threaten debt sustainability and/or market access; (ii) reliance on external financing that could become more challenging; (iii) dependence on commodity exports amid falling commodity prices; and (iv) exposure to real estate markets especially in countries with high household debt and housing market imbalances. It is important that the macrofinancial baseline analysis and risk assessment account for such linkages. Policy discussion should call for timely and aggressive responses in order to minimize the adverse spillovers and amplifications, and to prevent a full-blown financial crisis wherein macrofinancial consequences would be disorderly and nonlinear.

¹¹ See [October 2019 GFSR](#) and [the FSB’s Global Monitoring of Nonbank Credit Intermediation](#).

¹² Even prior to the pandemic, life insurers struggled with sustained low interest rates and were vulnerable to market volatility, and pension funds with defined benefits faced funding gaps. Life insurers may not immediately see capital shortfalls given the regulatory framework that tends to treat widening bond spreads as a liquidity risk, not credit risk.

Public finances will deteriorate, and concerns about debt sustainability and financing ability could undermine macrofinancial stability.¹³ Public debt was already high in many countries before the pandemic occurred, and the health crisis and the economic slowdown will result in larger fiscal deficits. Financing could become challenging, especially for EMDEs that rely on external funding or for countries where debt sustainability becomes in doubt. Signs of stress have emerged—for instance, widening sovereign spreads within the euro area. In many countries, financial institutions’ large holding of public debt and fiscal contingent liabilities to support banks could strengthen the sovereign-financial nexus. Concerns about a weak public finance situation, including possible downgrades of sovereign credit ratings, would exacerbate funding costs and financing availability of financial institutions and nonfinancial entities. Coherent, forward-looking analysis that captures the sovereign-financial interaction is essential to understand a full picture of macrofinancial stability risks. In addition, sovereign debt managers may need to take appropriate actions to respond to the sharply increased government financing needs and borrowing costs, as described in MCM note on [“Debt Management Responses During the Pandemic”](#).

The balance of payments could deteriorate sharply in many countries on the back of external financing difficulties and widening current account balances. EMDEs have already seen large capital outflows as international investors have fled to safe-haven destinations. Portfolio investment outflows could create stress in domestic bond and equity markets. Countries with large current account deficits will find it increasingly difficult to finance them. Exports will fall in most countries but so will imports due to the domestic demand compression; the net effect on the trade balance is uncertain. Commodity-exporting countries could face a larger trade deficit (or a smaller surplus) owing to falling commodity prices. These forces will put pressures on the exchange rate in many countries. In turn, a large depreciation in countries where foreign-currency external debt is substantial could create concerns about external debt sustainability. Large depreciation in the presence of dollarization would also weaken banks’ solvency due to credit losses from their lending to unhedged foreign-currency borrowers. The macrofinancial implications of large exchange rate depreciation (e.g. losses on foreign-currency exposures) and large capital outflows (e.g., system-wide liquidity conditions) should be accounted for. In certain circumstances, capital flow management measures (CFMs) can be used.

Commodity-exporting countries are likely to face stress through multiple channels as a result of falling commodity prices. Commodity prices have fallen on the back of the global economic slowdown, and oil prices have taken an additional beating from the ongoing price war. The macrofinancial impact of declining commodity prices work through multiple channels, as explained in MCM note on [“Assessing Stress from Oil Price Shocks on Oil Exporters”](#). First, firms in the commodities sector will face reduced earnings and potentially become financially distressed; they might postpone their investment projects. Second, fiscal revenues would fall due to the decline in commodities-related revenues and the broad-based economic slowdown. Third, system-wide liquidity pressures could emerge because of capital outflows and deposit withdrawals (from the government and firms particularly in the commodities sector). Fourth, the banking sector would face increased credit loss from commodities-related exposures and on the back of the broad-based economic slowdown. Where market-based finance plays an important role in financing commodities-related activity, pressures in those markets could also emerge. Fifth, pressures on the currency could emerge, and a devaluation or exchange rate depreciation (in the case of a floating exchange rate regime) would further amplify credit risk in the presence of substantial dollarization.

The real estate market is important for the macrofinancial dynamics in many countries, with housing market imbalances presenting a key macrofinancial stability risk. Depending on current valuations relative to fundamentals (e.g. income or rent), house prices could be at significant risk of declining in the face of rising unemployment and

¹³ While employing well-identified measures to address the crisis, countries should develop a credible medium-term fiscal strategy. For more detailed discussion on fiscal policy, see [FAD Special Series on fiscal issues in response to COVID-19](#).

tightening financial conditions.¹⁴ Following the COVID-19 shock, a sharp economic contraction could trigger a feedback mechanism of falling house prices, deteriorating balance sheets, dampening private consumption, and further exacerbating economic activity.¹⁵ This risk could be amplified where housing prices had been driven by foreign demand, as foreign investment retracts. A sharp decline in house prices, coupled with rising unemployment, could lead to widespread mortgage defaults especially if households are highly indebted. This will affect banks' solvency and put strains on market-based mortgage finance (e.g., mortgage-backed securities). The commercial real estate sector would see similar adverse effects albeit through different channels (e.g., the decline in occupancy and rental rate), and real estate funds could be subject to runs. Real estate transactions and construction activity would be sharply slowed during 'lockdowns' and quarantines. Firms in the construction and real estate sectors could become financially distressed.

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¹⁴ The house price-at-risk framework can be used to assess the potential decline in house prices. See [April 2019 GFSR](#).

¹⁵ [Caballero and Simsek \(2020\)](#) explained an endogenous spiral of falling asset prices and contracting aggregate demand, following a large supply shock like the COVID-19 pandemic. The main mechanism works through a drop in the wealth of risk tolerant agents and their sales of risky assets.