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What comes next? Recovery from an uneven recession

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What comes next? Aggregate implications of an uneven recovery

Key takeaways

- *The effects of the Covid crisis have been felt unevenly across sectors, and the output of customer service industries could remain well below its pre-Covid trend for some time.*
- *Economies with large customer service industries could grow more slowly in the near term, even after accounting for the stringency of containment measures and the severity of virus outbreaks.*
- *Model projections suggest that large advanced economies could face a "98% economy" until constraints on customer service industries ease. The outlook for some economies, such as China, is more positive.*
- *While demand stimulus remains necessary in the near term, it will not be sufficient to return economic activity to its pre-Covid trend. That will require public health measures to control the spread of the virus and steps to ease resource reallocation to industries less affected by the pandemic.*

An uneven recession and partial recovery

A striking feature of the Covid crisis has been its uneven impact across sectors (Graph 1, left-hand and centre panels). Dispersion in industry-level GDP growth often widens in downturns, with industries that supply investment goods or discretionary household items experiencing the steepest contractions. This pattern is clearest in recessions that trigger a large reallocation of economic activity, such as the Great Financial Crisis of 2007–09. But even compared with that episode, the dispersion of industry growth rates in the first half of 2020 was unusually large and uncommonly synchronised across economies.

The recovery has also been uneven. Activity in some industries rebounded quickly after lockdowns eased. But in others, such as hospitality and tourism, it has recovered more slowly. Firms in these industries face ongoing constraints, reflecting regulatory restrictions and behavioural changes by consumers. These constraints could persist until a vaccine or a more effective treatment for the virus becomes widely available.

A key unknown is the extent to which industry-level unevenness will weigh on the aggregate recovery. One view is that depressed conditions in customer service industries, which account for around 10% of GDP in many economies, will gouge a persistent hole in economic activity, leaving countries with a "90% economy".¹ Others argue that the impact may not be so large if resources can be reallocated efficiently, so that less demand for customer services can be made up for by more demand for other goods or services without raising inflationary pressures.²

Market economist forecasts suggest that ongoing weakness in customer service industries will act as a drag on GDP, albeit by less than the "90% economy" view would suggest.³ The right-hand panel of Graph 1 shows that the stringency of containment measures, the severity of virus outbreaks and the share

¹ See *The Economist* (2020). Theoretical explorations of the aggregate implications of an uneven recovery include Guerrieri et al (2020) and Woodford (2020).

² For example, if reduced retail spending in department stores was offset by increased purchases online.

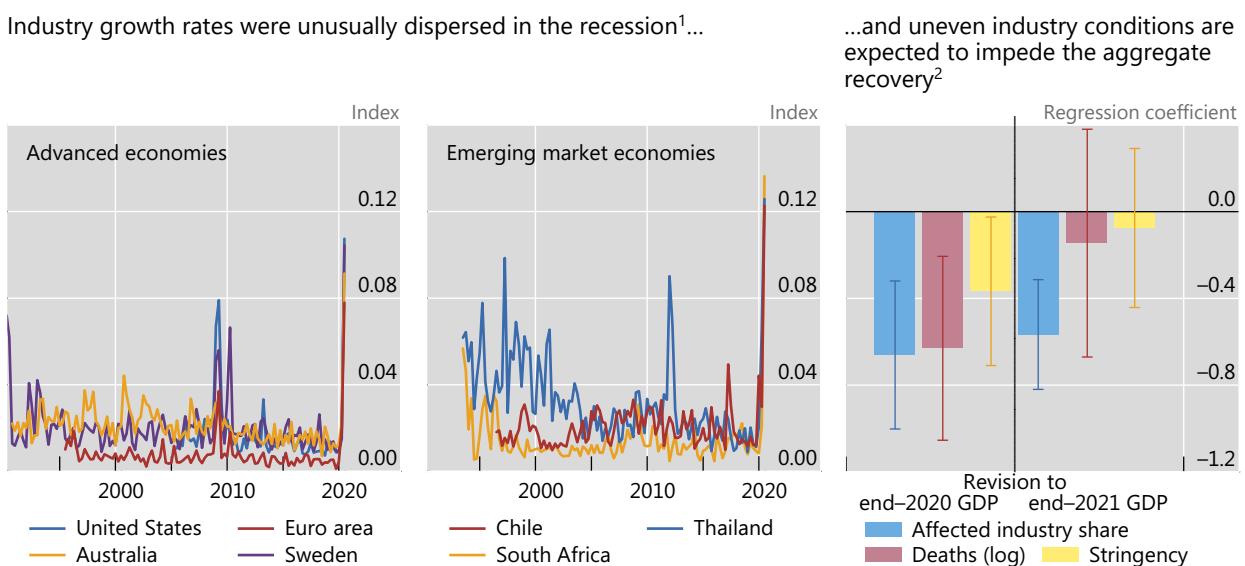
³ The Consensus Economics forecasts used in this exercise are quantitatively similar to those published by the IMF and the OECD.

of customer service industries in GDP each explain some of the decline in GDP in 2020 at a country level, relative to what was expected at the start of the year. Market economists expect the effects of containment measures and outbreak severity to be temporary – these variables do not affect forecasts of the level of GDP at the end of 2021. However, the contractionary effect of exposure to customer service industries is expected to persist. Each additional 1 percentage point of exposure to customer service industries lowers GDP forecasts at the end of 2021 by 0.6%.

However, to fully understand the aggregate implications of an uneven industry-level recovery, we need to look beyond headline GDP forecasts. The Covid recession is so unusual that historical economic relationships, which underpin most economic forecasts, may provide an unreliable guide to the recovery. Moreover, headline forecasts do not identify the mechanisms through which industry-level unevenness affects aggregate outcomes. This matters because an uneven recovery driven by constraints on supply has different aggregate implications from one that reflects shifts in demand. The pattern of supply- and demand-side disturbances could vary between economies, driving differences in aggregate outcomes even after controlling for industry composition.

An uneven recession and recovery

Graph 1



¹ Industry growth dispersion index, constructed using the method described in Section 4.3 of Rees (2020). ² Revisions to Consensus Economics forecasts.

Sources: IMF, *World Economic Outlook*; OECD; United Nations Statistics Division; Oxford University, Blavatnik School of Government; Consensus Economics; national data; author's calculations.

The aggregate implications of industry disturbances depend on their source

To explore the aggregate economic implications of an uneven industry-level recovery in more depth, I simulate the effects of the Covid crisis in a macroeconomic model. The model explicitly accounts for the behavioural choices of households and firms. As a result, its projections are less reliant on historical relationships than those from a purely empirical model based solely on correlations observed in the data. In addition, the model features a rich industry structure on both its demand side (through industry-specific patterns of consumption and investment) and its supply side (through input-output linkages in production). This makes it well equipped to analyse how changes in industry conditions affect aggregate economic outcomes, taking account of spillovers between industries and shifts in expenditure patterns.⁴

⁴ Like many macroeconomic models, the one used in this Bulletin features a relatively sparse financial sector. As a result, it does not account for how factors like a rise in public or private sector debt levels, or in corporate bankruptcies, could impede the recovery. This represents a downside risk to the projections presented here. For details of the model, see Rees (2020).

A key lesson of the model is that the aggregate implications of industry-level disturbances depend upon their source. To understand why, consider the effects of two types of industry-level disturbance that could explain the large decline in customer service activity during the Covid crisis:

- The first type of disturbance, which I will refer to as a supply disturbance, lowers the amount of output that firms can produce with the labour and capital at their disposal. An example of this could be a limit on customer numbers in hotels or on airlines.
- The second type of disturbance, which I will refer to as a demand disturbance, reflects a shift in customer preferences between industries. For example, a fear of infection could lead households to eat and socialise at home instead of in restaurants and bars.

Adverse supply- and demand-side disturbances both cause customer service output to decline. But the implications for other industries, and aggregate GDP, differ greatly.

Supply disturbances to customer service industries make the economy as a whole less efficient. Even if the total amount of capital and labour employed remains the same, the total volume of output declines. This, in turn, leads to lower wage and profit income for at least some households. In aggregate, consumers and firms have less income to spend on the output of all industries, including those unaffected by the supply disturbances. Some shifts in spending patterns across industries may occur, because the prices of customer services are likely to rise relative to those of other goods and services. But these shifts are largely zero sum – more demand for the output of one industry is offset by less demand for the output of another industry – and so cannot make up for the reduction in efficiency. As a result, aggregate GDP will decline.

The aggregate implications of a shift in demand away from customer services are likely to be much smaller in scale. Less income for firms and workers in customer service industries will be largely offset by more income for firms and workers in other industries. These changes in consumption patterns will of course affect income and employment in individual industries, which may warrant a policy response. However, at an aggregate level, GDP will decline by much less than after a supply disturbance, and could even increase.

In reality, a combination of industry-level supply- and demand-side disturbances, as well as economy-wide aggregate disturbances, is necessary to explain declines in output that occurred in the first half of 2020. The size and composition of these disturbances is likely to have differed between economies, reflecting the responses of households and firms to the pandemic, as well as policy choices. In the next section, I explain how I estimate these industry and aggregate disturbances and discuss what they imply for the recovery.

Recovery from the Covid crisis at an industry level

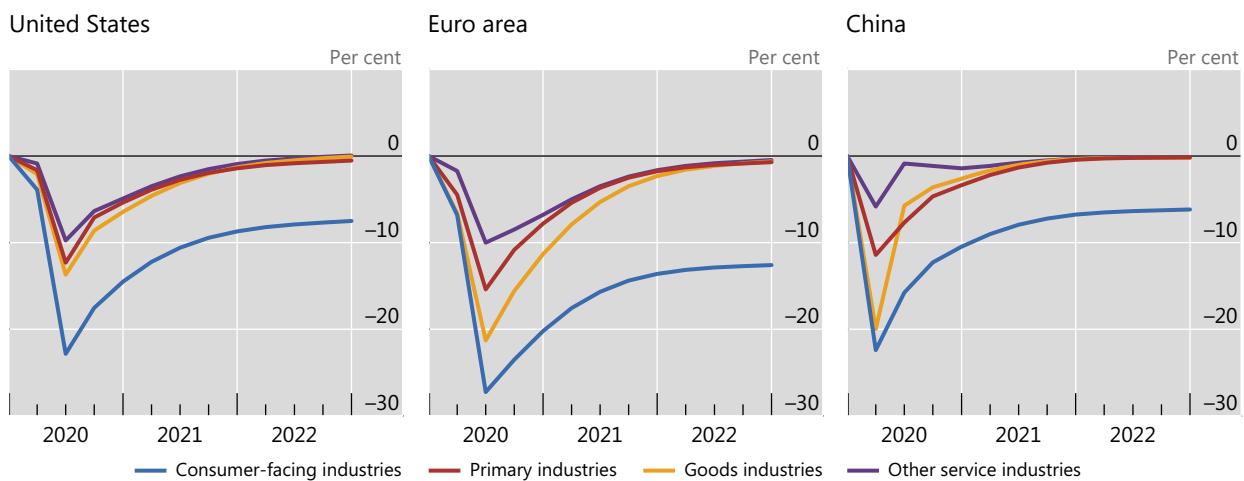
I model the industry-level recovery from the Covid crisis in three steps. First, I calibrate the model to match the industrial structure of a number of advanced economies (AEs) and emerging market economies (EMEs) prior to the Covid crisis.⁵ Second, for each economy, I estimate the aggregate- and industry-specific demand and supply disturbances that can explain economic outcomes in the first half of 2020. Third, I project the model forwards making two assumptions:

1. The aggregate disturbances diminish over the second half of 2020.
2. The industry-specific disturbances affecting customer-facing services continue, albeit at a lower intensity, for some time.

⁵ Specifically, I adjust the model parameters governing household preferences and industry production functions so that the pattern of consumption, investment and employment in the model matches that seen in the data. For this Bulletin, I focus on the United States, the euro area and China.

Lower output in customer service industries but limited spillovers¹

Graph 2



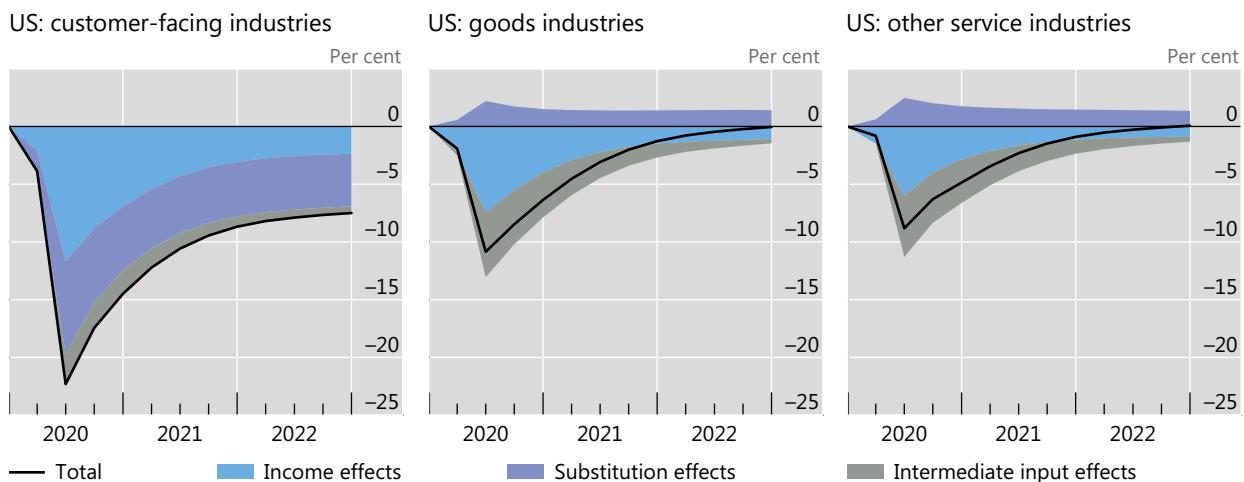
¹ Deviation from pre-Covid trend.

Source: Author's calculations.

The projections indicate that ongoing constraints are likely to weigh on customer service industries.⁶ Graph 2 gives a sense of the magnitudes, assuming that 50% of the disturbances specific to the customer service industries remain in place until mid-2023. In the large AEs, output in customer service industries is projected to remain around 10% below its pre-Covid trend until constraints on these industries ease.⁷ The results for China are qualitatively similar, with customer service output projected to remain about 5% below its pre-Covid trend.

Outside customer services, income and substitution effects offset¹

Graph 3



¹ Deviation from pre-Covid trend.

Source: Author's calculations.

⁶ These are the constraints imposed by the virus, which could reflect behavioural changes as well as regulatory restrictions.

⁷ The model features approximately 15 industries for each economy, which I combine into four broad groups for presentational ease. The output projections differ across customer service industries, with recreation and hospitality services generally projected to experience a larger deviation from their pre-Covid trend and retail trade to recover more quickly.

At first glance, the spillovers of lower customer service output to other industries look to be small. The projections suggest that the output of most industries outside customer services could return close to its pre-Covid trend by the end of 2021. To help understand this result, Graph 3 decomposes changes in industry GDP for the United States into three factors: income effects – due to changes in aggregate expenditure on goods and services; substitution effects – due to shifts in the composition of demand across industries; and intermediate input effects – due to changes in the demand for goods and services as an input into production (the decomposition is quantitatively similar for other economies).

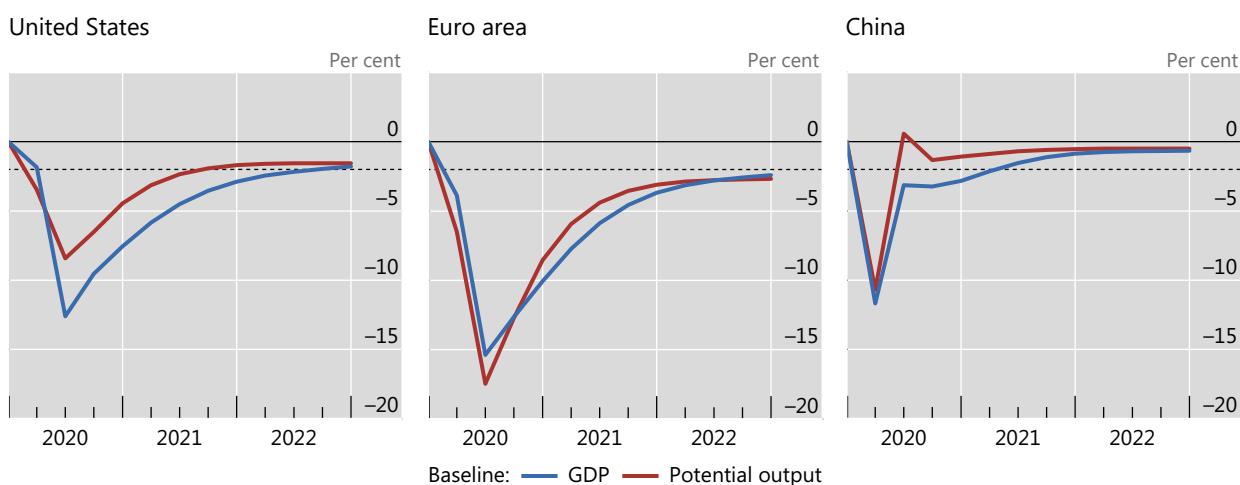
For customer service industries, all three factors contribute to lower output. For other industries, the decline in aggregate economic activity exerts a negative income effect that lowers output. These industries also experience less demand for their products as an intermediate input into customer service production. But in many industries, the negative income and intermediate input effects are offset by a shift in consumer preferences away from customer services. This substitution away from customer services allows activity in the rest of the economy to recover despite the lower level of aggregate economic activity.

Aggregate implications of the uneven recovery

Aggregating the industry-level projections suggests that large AEs could face a “98% economy” in the years ahead, with GDP recovering to at best 2% below its pre-crisis trend (Graph 4, left-hand and centre panels). The persistent slump in GDP does not reflect a lack of policy stimulus, but rather a lower level of potential output.⁸ Constraints, both regulatory and behavioural, limit customer service industries’ output. And, even after accounting for shifts in spending patterns and plausible reallocation of labour and capital, this cannot be made up for by higher output in other industries.

Advanced economies face a “98% economy” due to lower potential output¹

Graph 4



¹ Deviation from pre-Covid trend.

Source: Author’s calculations.

The message is more positive for China, however, with output expected to return close to its pre-crisis trend by late 2021 (Graph 4, right-hand panel). This faster return to trend reflects two factors. The first is the structure of China’s economy, which is less oriented towards customer services than that of many AEs. The second is the nature of the estimated aggregate- and industry-specific disturbances affecting the Chinese economy. Quantitatively, the latter plays the larger role in explaining the differences in GDP projections between China and the large AEs.⁹

⁸ The concept of potential output here includes constraints on production imposed by the need to contain the virus.

⁹ See Section 3.4 of Rees (2020) for a comparison of aggregate- and industry-level disturbances across countries.

The outlook for some AEs is also more positive than that for the United States and the euro area. For example, projections for Australia suggest that it could face a "99% economy" in the years ahead, largely due to a smaller projected decline in customer service output relative to the large AEs. At the same time, the fairly rapid projected recovery in China is not replicated in all EMEs. Projections for Thailand, which has a large tourism industry, suggest it could face a "95% economy" in the years ahead.

The results in Graphs 2–4 rely on assumptions about the persistence and severity of constraints on customer service industries, which are subject to enormous uncertainty. Positive news about the effectiveness of newly developed vaccines raises the possibility that constraints could ease from the middle of 2021. In this case, the model would project a much faster recovery, with aggregate economic activity returning to its pre-Covid trend by late 2021 in most economies. If this positive news proves to be premature so that constraints on customer service industries bind more tightly and remain in place until mid-2025, large AEs could face a "96% economy" over the next few years.

Rising infection rates in many parts of the world mean that some economies could face a "second wave" of recession in the coming months. If we assume that the constraints on activity are two thirds as large in the "first wave" in the second quarter of 2020, the model's projections for GDP growth in the first half of 2021 would be lower by 2 percentage points. If the second wave leads, in addition, to more precautionary saving by consumers and delayed investment projects by firms concerned at the prospect of subsequent waves, a full recovery does not occur until the middle of the decade.

Conclusion

The simulations presented here suggest that unevenness of the recovery at an industry level could weigh on aggregate economic outcomes. While demand stimulus is likely to remain necessary in the near term, because the "98% economy" reflects a decline in potential output it is not a panacea to an uneven recovery. Instead, what is required is for public health measures to control the virus so that customer service activities can resume, and for policies to ease the reallocation of resources to industries and firms that face fewer constraints.

An uneven recovery also has implications for financial stability that the model described in this Bulletin does not explicitly take into account.¹⁰ An ongoing slump that is concentrated in a small number of industries could be associated with more corporate bankruptcies, and associated financial disturbances, than one where the weakness is more evenly spread. Resolving these issues in a way that leaves financial firms adequately capitalised and the corporate sector with enough financial room to invest as the recovery gathers steam will be a key challenge in the years ahead.

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¹⁰ For more discussion of these issues, see Banerjee, Cornelli and Zakrajšek (2020) and Gourinchas et al (2020).

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