



Evaluating the initial impact of COVID-19 containment measures on economic activity

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Introduction and key messages

The increasing spread of the coronavirus across countries has prompted many governments to introduce unprecedented measures to contain the epidemic. These are priority measures that are imposed by a sanitary situation, which leave little room for other options as health should remain the primary concern. These measures have led to many businesses being shut down temporarily, widespread restrictions on travel and mobility, financial market turmoil, an erosion of confidence and heightened uncertainty.

In a rapidly changing environment, it is extremely difficult to quantify the exact magnitude of the impact of these measures on GDP growth, but it is clear that they imply sharp contractions in the level of output, household spending, corporate investment and international trade. This note provides illustrative estimates of the initial direct impact of shutdowns, based on an analysis of sectoral output and consumption patterns across countries and an assumption of common effects within each sector and spending category in all countries.

- This approach suggests that the initial direct impact of the shutdowns could be a decline in the level of output of between one-fifth to one-quarter in many economies, with consumers' expenditure potentially dropping by around one-third. Changes of this magnitude would far outweigh anything experienced during the global financial crisis in 2008-09. This broad estimate only covers the initial direct impact in the sectors involved and does not take into account any additional indirect impacts that may arise.

¹ This document is an update of the 14 April 2020 version available on the OECD dedicated COVID-19 digital hub: <http://www.oecd.org/coronavirus/>.



These are only the initial impacts on the level of output. The implications for annual GDP growth will depend on many factors, including the magnitude and duration of national shutdowns, the extent of reduced demand for goods and services in other parts of the economy, and the speed at which significant fiscal and monetary policy support takes effect. Nonetheless, it is clear that the impact of the shutdowns will weaken short-term growth prospects substantially.

- The scale of the estimated decline in the level of output is such that it is equivalent to a decline in annual GDP growth of up to 2 percentage points for each month that strict containment measures continue. If the shutdown continued for three months, with no offsetting factors, annual GDP growth could be between 4-6 percentage points lower than it otherwise might have been.

These estimates are one approach to quantifying the initial impact of containment measures on activity, and do not utilise the full range of data that inform the projections of economic growth in the OECD Economic Outlook. However, their message of sharp initial declines in activity across countries following shutdowns and restrictions on mobility is very similar to that emerging from business surveys, high-frequency daily indicators, and the sharp output contraction observed already in China this year.

Considerable uncertainty remains about the duration and magnitude of confinement measures and the extent to which they may be implemented in a similar manner across countries. Even once they begin to be eased, the extent of any subsequent recovery in output will depend on the effectiveness of the policy actions taken to support workers and companies through the downturn and the extent to which confidence returns.

Evaluating the potential direct impact effects of widespread shutdowns: The output approach

One approach to identifying the potential immediate impact of widespread shutdowns is to look at detailed categories of output and identify the sectors most directly affected by containment measures. For each of these activities, illustrative assumptions can be made about the extent to which the activity is likely to be reduced, with output declines ranging from 50-100%.

- Within service sectors, activities involving travel, including tourism, and direct contact between consumers and service providers, such as hairdressers or house purchases, are clearly adversely affected by restrictions on movement and social distancing.
- Most retailers, restaurants and cinemas have also closed, although takeaway sales and on-line sales may prevent a full cessation of activity in some businesses.
- Non-essential construction work is also being adversely affected, either because of containment policies affecting labour availability or because of temporary reductions in investment.
- The direct impact of lockdown measures is smaller in manufacturing sectors, some of which are less employment intensive. Complete shutdowns are occurring though in producers of transport equipment, often because of difficulties in obtaining necessary inputs from suppliers in other countries.

Taken together, the affected sectors account for between 30-40 per cent of total output in most economies. Allowing for only partial shutdowns in some sectors, and assuming a similar extent of shutdowns in all countries, the overall direct initial hit to the level of GDP is typically between 20-25% in many major advanced economies (Figure 1). The impact on annual GDP growth would depend on how long these measures remain in place.

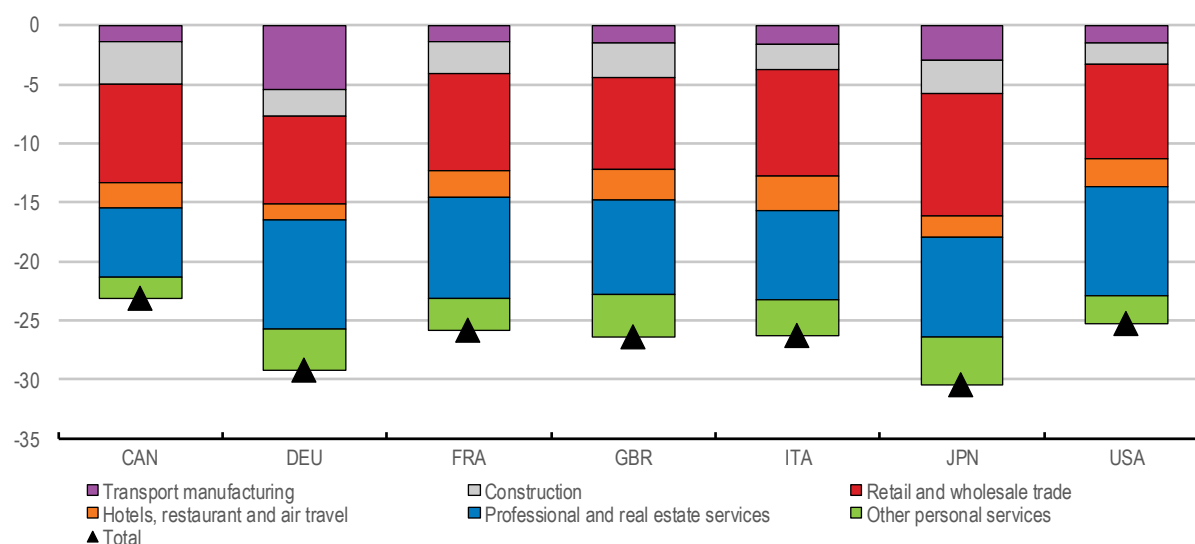
The calculations are based on an assumption of an economy-wide shutdown, rather than a shutdown confined to particular regions only. In all countries, full shutdowns are assumed in transport manufacturing and other personal services; declines of one-half are assumed for output in construction and professional



service activities; and declines of three-quarters are assumed in all the other output categories directly affected by shutdowns. These are assumptions and the actual situation may vary from one country to the next, depending on the containment measures adopted.

Figure 1. The potential initial impact of partial or complete shutdowns on activity in the G7 economies

Per cent of GDP at constant prices



Note: The sectoral data are on an ISIC rev. 4 basis in all countries. The sectors included are manufacturing of transport equipment (ISIC V29-30), construction (VF), wholesale and retail trade (VG), air transport (V51), accommodation and food services (VI), real estate services excluding imputed rent (VL-V68A), professional service activities (VM), arts, entertainment and recreation (VR), and other service activities (VS). The latter two are grouped together as other personal services in the figure. Real estate services excluding imputed rent are assumed to be 40% of total real estate services in countries in which separate data are not available. Full shutdowns are assumed in transport manufacturing and other personal services; declines of one-half are assumed for output in construction and professional service activities; and declines of three-quarters are assumed in all the other output categories directly affected by shutdowns. The calculations are based on an assumption of an economy-wide shutdown, rather than a shutdown confined to particular regions only.

Source: OECD Annual National Accounts; and OECD calculations.

In all economies, the majority of the impact on output comes from the hit to output in retail and wholesale trade, and in professional and real estate services. There are also notable cross-country differences in some sectors, with closures of transport manufacturing being relatively important in Germany, and the decline in tourist and leisure activities being relatively important in Italy.

Extending the same approach to other economies suggests that the impact effect of business closures could result in reductions of 15% or more in the level of output throughout the advanced economies and major emerging-market economies after the full implementation of confinement measures.² In the median economy, output would decline by one-quarter.

The calculations are based on an assumption of an economy-wide shutdown, rather than a shutdown confined to particular regions only. In all countries, full shutdowns are assumed in transport manufacturing and other personal services; declines of one-half are assumed for output in construction and professional

² The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.



service activities; and declines of three-quarters are assumed in all the other output categories directly affected by shutdowns. These are assumptions and the actual situation may vary from one country to the next, depending on the containment measures adopted.

Variations in the impact effect across economies reflect differences in the composition of output. Many countries in which tourism is relatively important could potentially be affected more severely by shutdowns and limitations on travel. At the other extreme, countries with relatively sizeable agricultural and mining sectors, including oil production, may experience smaller initial effects from containment measures, although output will be subsequently hit by reduced global commodity demand.

There will also be some variation in the timing of the initial impact on output across economies, reflecting differences in the timing and degree of containment measures. In China, the peak adverse impact on output is already past, with some shutdown measures now being eased.

Evaluating the potential impact effects of widespread shutdowns: The spending approach

An alternative way of estimating the potential direct impact of widespread shutdowns is to look at detailed categories of consumer spending, again identifying ones most directly affected by containment measures. For each of these types of spending, illustrative assumptions can be made about the extent to which spending is reduced, with cutbacks ranging from 50-100%.

- Shop closures and travel restrictions are likely to result in some categories of spending being cut back completely, such as spending on clothing, footwear, household furnishings and package holidays. Spending involving direct contact between consumers and businesses, such as car purchases and hairdressing, is also likely to be postponed completely.
- Sharp declines are likely in spending on local travel, restaurants, hotels and recreational services, although these still continue to some extent.
- Other categories of spending, including spending on essential items, are assumed to remain unchanged.

Allowing for only partial reductions in some affected spending categories, and assuming similar reductions in all countries, the overall direct initial hit to the level of consumer spending could be around one-third in many major advanced economies after the full implementation of confinement measures (Figure 2).³

The calculations are based on an assumption of an economy-wide reduction in spending, rather than a reduction confined to particular regions. All expenditure on clothing and footwear, furnishings and household equipment, vehicle purchases, package holidays and personal care services is assumed to stop completely; spending on recreation and culture, and hotels and restaurants is assumed to decline by three-quarters; and spending on transport services and the operation of private vehicles to decline by one-half. These are assumptions and the actual situation may vary from one country to the next, depending on the containment measures adopted.

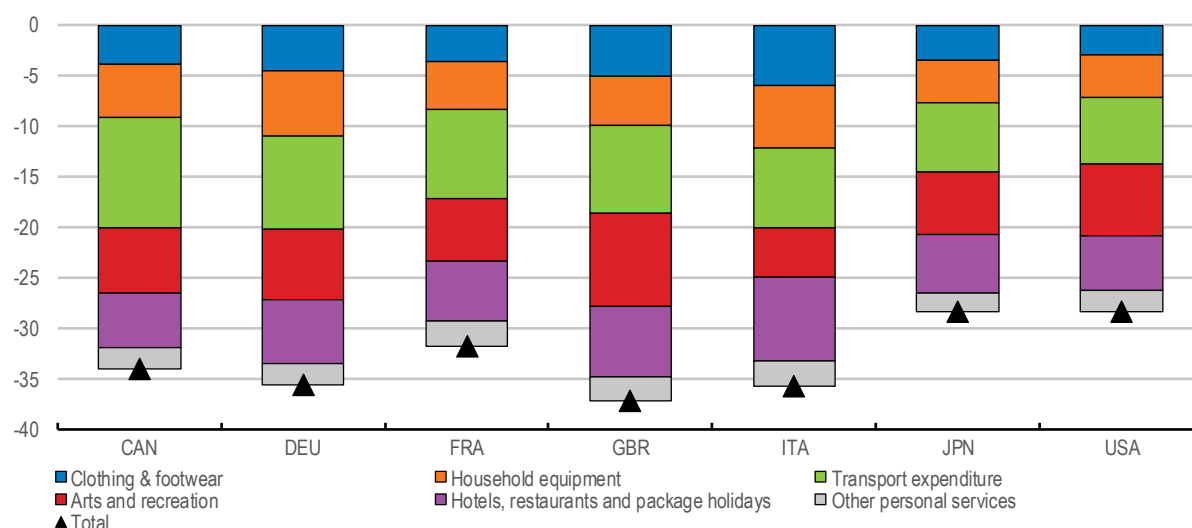
The potential impact on consumers' expenditure is larger than on total GDP, as lower spending is partially offset by reduced import demand and because consumers' expenditure accounts for only around three-fifths of GDP in the typical G7 economy. Taking these factors into account, the illustrative declines in consumers' expenditure also imply a reduction of around one-fifth in the level of domestic output.

³ Detailed information on the spending categories included and the illustrative declines in spending assumed are provided in the note to Figure 2.



Figure 2. The potential initial impact of partial or complete shutdowns on private consumption in the G7 economies

Per cent of total consumers' expenditure



Note: The spending data are based on a COICOP classification in all countries. The categories included are clothing and footwear (COICOP 3); furnishings and household equipment (5); vehicle purchases (7.1); operation of private vehicles (7.2); transport services (7.3); recreation and culture excluding package holidays (9.1-9.5); package holidays (9.6); hotels and restaurants (11); and personal care services (12.1). All expenditure on clothing and footwear, furnishings and household equipment, vehicle purchases, package holidays and personal care services is assumed to stop completely; spending on recreation and culture, and hotels and restaurants is assumed to decline by three-quarters; and spending on transport services and the operation of private vehicles to decline by one-half. The calculations are based on an assumption of an economy-wide reduction in spending, rather than a reduction confined to particular regions.

Source: OECD Annual National Accounts; Statistics Bureau, Japan; and OECD calculations.

This note is produced by the OECD Economics Department. It provides illustrative estimates of the initial direct impact on output and spending from the widespread measures taken by governments to contain the current coronavirus epidemic shutdowns, based on an analysis of sectoral output and consumption patterns across countries.

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