CHAPTER 20

Growth and Development Implications of Covid-19

20.1 Introduction

The chapter identifies the new issues raised in the global economy by the emergence of Covid-19 and its impact on economic development and growth.

The Covid-19 crisis started from China (Hubei, 59 million inhabitants) at the end of 2019 and beginning of 2020. When Covid-19 extended to the West, it raised issues on supply and demand, and increased uncertainty.

The epidemiological crisis has brought a rapid sudden stop to the world economy for the main economies that is comparable to the crisis of 1929 and 2008. The recession was characterized as short term (2020 and 2021) but is estimated to have medium-long-term effects.

This chapter, after presenting a small history of the pandemics over the last two centuries (Sect. 20.2), analyzes the economic effects of Covid-19 (Sect. 20.3) with an emphasis on the effects on growth rates. A number of changes expected to take place in the world after the 2020 crisis (Sect. 20.4) and the impact on the financial sector (Sect. 20.5) are highlighted below. The Sect. 20.6 presents the parts of the economic theory triggered by the advent of Covid-19. Finally, Sect. 20.7 presents the most significant impacts of Covid-19 on the most important areas of economic policy, while Sect. 20.8 lists the long-term economic effects of the Covid-19 crisis.
20.2 Pandemics and Economy in the Human History

Since the early days of humanity, diseases have been in line with human nature and evolve along with it. However, the creation of organized societies and the rise in trade has favored both communication and interaction between people and animals, which in turn has encouraged the creation of diseases. It is typical that diseases such as malaria, tuberculosis, leprosy, influenza, and smallpox started to emerge at that time. So as the communication between individuals, organizations and thus ecosystems increases, with particular emphasis on disrupting the natural life of different societies, the more likely was that epidemics would develop that would be turned into pandemics. These diseases are a vulnerability of people, but scientific progress has achieved remarkable successes against their spread.

The main reason we are interested in the history of pandemics is because we are interested in identifying similar cases of the Covid-19 crisis and learn from past experience. The most important epidemiological and pandemic crises of the last two centuries are shown in Table 20.1.

It is clear that the most important recorded historical pandemics and epidemics that affected and still affect the twentieth and twenty-first centuries show that such phenomena pre-existed and will continue to exist and form part of the history of mankind. In fact, pandemics appear to have a number of identical characteristics (Davies, 2020): (a) they

Table 20.1 The main epidemics and pandemics that have occurred in the period 1918–2020

| Pandemic name            | Period           | Deaths (million) |
|--------------------------|------------------|------------------|
| Spanish flu              | 1918–1919        | 100              |
| Asian flu                | 1957–1958        | 2                |
| Hong Kong influenza      | 1968–1970        | 1                |
| HIV/AIDS                 | 1981–present     | 25–35            |
| Swine flu\(^a\)          | 2009–2010        | 0.2              |
| SARS                     | 2002–2003        | 0.00,077         |
| Ebola                    | 2014–2016        | 0.011            |
| MERS                     | 2015–present     | 0.00,085         |
| Covid-19 (until 5/3/2020)| 2019–present     | 0.244            |

Note \(^a\)The numbers of the dead from swine flu are subject to discussion on the basis of new data

Source Jorda et al. (2020), LePan (2020), Johns Hopkins University (2020) and author’s own creation
occur after prolonged periods of increasing economic prosperity; (b) first outbreaks are found at centers of trade and/or governance; (c) they break out in waves where the second wave is usually stronger; and (d) they appear in natural or social places where people come in close and continuous contact with nature. However, despite their common features, significant changes in the world economy over the last 50–60 years (changes in international interactions, speed of travel and supply chain dynamics) and in the structure of societies (women entering the labour market coupled with a change in the way they care for the elderly) have strengthened the likelihood and dynamics of pandemics (Davies, 2020).

The rapidly evolving Covid-19 pandemic makes this situation historically difficult to compare. The parallels of the Covid-19 pandemic with world wars are limited, but it has been observed that over the past 200 years, when major disasters occur, countries have decided to generate substantial amounts of money through loans as economic support. And it is a matter of time to see whether this time the situation will be different or not (Horn, Reinhart, & Trebesch, 2020).

The precise impact of the Covid-19 pandemic is currently unknown, but the experience of the Spanish flu of 1918–1919 has shown that important economic policies should be adopted to address it. This opens a major debate on the trade-off between mortality and economic recession (Barro, Ursúa, & Weng, 2020). The matter from the part of the economic policy is the impact these have on the economy as such major events lead to large macroeconomic policies that need to be studied.

### 20.3 Covid-19 Infects the Economy

The Covid-19 crisis has a number of features that allow us to separate it from previous financial crises and approach the elements that affect the economic impact of this phenomenon.

It is a health crisis which initially broke out in China but has spread so fast to the G7 countries that it is considered to have burst almost simultaneously in some parts of the world. The Covid-19 crisis did not start in the economic field; it turned out unexpectedly, depriving economists of any predictive capacity, while it does not show any typical signs of concentric circular effects like in earlier crises but seems more like “entangled websites” (Baldwin & Weder di Mauro, 2020).

The characteristic of all the major financial crises of the past is that they are strengthened by the movements of the “players” of the system
itself and “as a tropical storm on a hot sea, they gain more energy as they develop” (Danielsson, Shin, & Zigrand, 2009; Danielsson, Macrae, Vavanos, & Zigrand, 2020). The 2008 crisis, like the crises of 1866, 1766, and 1914, was an intrinsic risk crisis, as it essentially began due to interactions between market participants who, through synchronized decisions, sold assets causing a large liquidity reduction. But the Covid-19 shock is an exogenous impact on the economic system. But because, as previous experience shows, in any systemic crisis (even if caused by an external shock), the risk to the economy is being intrinsically re-created (as it was the case in the 1914 crisis for example), we should expect this shock to be absorbed by the financial system as is the case with other exogenous shocks. But there is a possibility that the shock created by the coronavirus exposed the weaknesses of economies and markets, thus leading to a systemic financial crisis. However, the indications (May 2020) are reassuring—in part—about the long-term impact of this phenomenon as the shock from Covid-19 is extrinsic in nature since it is not caused by the weaknesses of the system, the banking sector and supervisory authorities are better organized and informed after the recent financial crisis of 2008 and high-risk lending is now also provided by non-banking institutions (Danielsson et al., 2020).

There are therefore inevitable similarities between the 2008 crisis and the Covid-19 crisis, such as the business failures that are unfortunately expected to occur, the liquidity shortages and the great challenge for financial institutions where some may cease to operate. But in general terms, and with the main point of reference that the coronavirus is extrinsic and not intrinsic to the financial system, the problem arises in the real economy and outside the financial sector. The big issue, however, is that all this storm that break up over the real economy will require support from the financial system, which should be very stable so that it does not collapse in turn (see Sect. 20.5).

Thus, the Covid-19 crisis is quite complex because it is essentially a simultaneous shock to supply and demand, while it increases uncertainty. One way in which the coronavirus damages the economy and productivity is the cessation in the supply of labor, goods, and services. People are sick, schools are closed and parents stop working and stay at home to take care of their children. Thus, quarantine can force workers to work from their home or even entire factories to suspend their operations. The strict restrictive measures introduced in China and Italy have aggravated this effect through the channel of supply.
The restrictions on people’s movement create a negative shock to labor supply (in fact they create an increase in unemployment). It is assumed that these conditions will last for at least one or two quarters in China and in other countries with large outbreaks (Italy, Germany, France and Spain) depending always on the situations observed.

At the same time, as China—which is one of the world’s largest interconnected hubs—faces problems with the inflow of manufacturing products because its suppliers (Korea, Japan and Taipei), which serve as the centers of the global supply chain in this sector have also been affected by the virus; the supply and supply chain problem is becoming a major problem for Asia in particular. However, a similar picture can be found at Europe’s biggest hub, Germany (ranked 6th globally in terms of cases, as on 29 April 2020), which is the link with the other European countries. A similar picture is drawn in the USA, the third largest node, concerning manufacturing products (WTO, 2019).

In addition, on the demand side, people buy less goods from shops than usual, travel transports are decreasing while they are not visiting food stores thus reducing food consumption from outside. Public health measures also limit economic activity. The impact on travel receipts is expected to be grave, given the imposed travel restrictions and the generally vulnerable climate in this sector. In addition to external demand, the spread of the coronavirus is expected to affect domestic demand as well. Private consumption is expected to decrease in the countries due to a deterioration in consumer confidence, preventive measures to prevent the dissemination of the coronavirus and the squeeze of household disposable income as a result of the decline in economic activity in general. Also, the increase in uncertainty and the deterioration of the investment environment should have a deterrent effect on new investment projects and risk-taking.

Companies are subject to increased risk due to weak aggregate demand, while the pandemic is causing adverse effects. Uncertainty is likely to remain and feed the slowdown in productivity growth with delayed investment decisions by companies.

Another important channel for transmission is the deterioration in international and domestic financial conditions. The increase in uncertainty is fuelling major turbulence in international financial markets, leading to a deterioration in the conditions for financing economies and a reconsideration of investment positions globally.
The simplified form of the circular money flow figure of the economy (see Chapter 4) shows the channel through which the health crisis is impacting the economic system. To be brief, in the flow of money graph, households sell their work to businesses which in turn sell the products/services to households. Also, households buy products/services from businesses and businesses pay wages and profits to households.

The circular flow of money of the economy and the channels through which the circular flow of money is disrupted and thus the economic system, due to Covid-19, are described below (Baldwin & Weder di Mauro, 2020).

Starting from the households, it is clear that if household wages are reduced or even worse, then this will lead to economic hardship and/or bankruptcy while reducing their consumption expenditure on business and also the flow of money to the government (taxes). But domestic demand problems will then also affect import payments, creating a shock to international demand. In a similar way, the decline in domestic demand in the rest of the world is affecting export payments.

The fall in demand and supply disruptions can lead to disruption of the domestic supply chain, leading to further output reductions - especially in the manufacturing sector (Baldwin & Weder di Mauro, 2020).

Unemployment is on the rise (Covid-19 “kills” jobs); as a result, the now unemployed consumers even when they continue to receive unemployment benefit or have another source of income, tend to reduce their expenditures.

The first economic impact is determined by the scale of the restrictive measures imposed on each country, which have become increasingly pronounced in recent days. The subsequent impacts will be determined by the structural economic vulnerability of each country to Covid-19, which vary widely.

By assessing (Oxford Economics, 2020a) a range of structural factors, including sectoral structure, business sizes, demographics, and health sector skills, it appears that the countries of northern Europe, as well as the German and French economies, have a better perspective to cope with the economic shock.

The countries of the periphery of the Eurozone are considered to be more vulnerable. The southern economies of the Eurozone also tend to have the least fiscal space to respond and are in weaker cyclical positions. This reinforces the need for a coordinated European fiscal policy.
Based on the global economic model of Oxford Economics (May 2020), two scenarios are created: The current baseline and the downside baseline, i.e., a scenario in which all countries have severe lockdowns, where these extend to the third quarter (possibly due to a second wave of the virus) and domestic activity is even more difficult to recover than as shown in China’s case, which is exacerbated by a weak global environment (Fig. 20.1). The analysis then focuses on the current baseline scenario.

The magnitude of the shock in demand is dominated by any upward pressure on prices due to the supply chain being cut to such an extent that inflation is becoming negative for 2020. Only due to the aggressive policy is it expected to be positive in most economies, including China, Eurozone, US, in early 2022 (Continuum Economics, 2020). In labor markets, although wages and working hours are part of the adjustment, the rise in unemployment is widespread and rapid, with global unemployment reaching 10% at the end of 2020 from 5.2% in 2019.

Thus, on the one hand, there are some people who expect that factors such as lower commodity prices, low oil prices, and labor market pressures will lead to a reduced rate of inflation. As Blanchard notes (2020), looking at the expected level of inflation through developments in the labor market, inflation expectations, shocks in commodity and food prices, as it has been the case in recent years, confirming the inflation rates actually achieved, no inflation growth is expected in the global economy as a result of the Covid-19 pandemic crisis. In fact, Krugman (2020) says that under
low interest rates and at the same time under the need for better living conditions (infrastructure, health, etc.) it is considered that stimulating economies takes the form of public investment. He therefore suggests that economies rather than using non-conventional monetary policy, and perhaps fiscal stimulus, should use large-scale public investment financed by deficits on an ongoing basis.

On the other hand, there are those who argue that the very large increases in the budget deficits of the economies (at war levels) and in the balance sheets of the central banks, the massive expansions of currency reserves and long-term supply reductions and the sharp recovery of demand, may lead to high inflation levels (Miles & Scott, 2020). In fact, Goodhart and Pradhan (2020) note that the Covid-19 pandemic crisis is expected to mark the dividing line between the deflationary forces of the last 30–40 years, and of the emerging inflation rate of the next two decades, as this is the case after war periods. They also note that the significant increase in inflation will end when the economies’ debt returns to sustainable levels (see the issue of high debt, Chapter 19). Bruegel (2020) notes that if the overall supply side effects outweigh the demand-side effects, this will lead to a reduction in the product that is being produced, combined with an increase in prices, leading to stagflation conditions.

The high cost of the Covid-19 pandemic to economies should also be expected to be linked to an increase in preventive savings as balance sheets are rebuilt. The early stage of recovery will be reinforced by political responses. In the medium-term, we see the global economy suffering from a loss of output of 4 percentage points. However, there are still risks as to whether this figure will be confirmed.

An obvious risk of such a massive downturn is that it causes a financial crisis, with all the medium-term effects that a prolonged period of reduced credit supply would have. This scenario requires that policymakers be able to effectively protect the global economy and the financial system.

The bad scenario assumes a much higher output depression in line with the forecasts for the three scenarios (pre-Covid-19 scenario, baseline scenario after Covid-19 and downside scenario after Covid-19) according to Fig. 20.2 (the indicator where the pre-crisis quarter is \( t = 100 \)).

With regard to the main causes of the global slowdown, it is noted (FitchSolutions, 2020) that the pressure points are as follows:
The delay in the growth of the Chinese economy, which is expected to lead to weaker demand for goods and commodities, supply chain problems and reduced tourism expenditures around the world.

- The shock of supplies and demands in the global economy due to the large number of lockdowns. The effects of this phenomenon are job breaks, travel and transport restrictions, lower consumption, and lower profits.

- The large and sharp increase in the stress on financial markets is expected to lead to a negative path to the global economy as the negative effects on wealth have started (sales of equity and negative effects on wealth, credit conditions are becoming more tight at a global level and currency values are undervalued).

- Governments’ responses to economic policy that are uncoordinated are expected to lead to a prolonged period of uncertainty and are expected to affect consumption and the business climate.
20.4 Pandemic and Economic Recession Interactions

The targeting of the epidemiological/preventive measures imposed around the world is aimed at smoothing the outbreak curve and allow as little recession as possible, mainly related to lockdown measures.

Figure 20.3 shows the relationship between these two policy objectives: the flattening of the epidemiological curve and the flattening of the recession curve (Baldwin & Weder di Mauro, 2020; Gourinchas, 2020).

At the top of the diagram is the evolution of the new cases without the imposition of restrictive measures and with the imposition of measures. Correspondingly, at the bottom of the figure, there is the depth of the recession without the imposition of restrictive measures and with the imposition of measures. The curve of the lower figure showing the recession with the existence of restrictive measures is sharper and deeper than the curve showing the recession without the existence of restrictive measures, i.e., the exact opposite is observed in relation to the upper part of the diagram.

Fig. 20.3 The pandemic and recessionary curve (Source Baldwin and Weder di Mauro [2020], Gourinchas [2020] and author’s own creation)
It is obvious that—at least in the short term—the attempt to flatten the
curve of the cases is hurting the economy. Restrictive measures, although
necessary for the survival of society, cause a sharp economic pause. It is
important to note, however, that even if the restrictive measures were
not imposed, the recession would occur because it would be self-fed by
the preventive measures and panic behaviors of households and busi-
nesses that would experience uncertainty and would have to deal with
the pandemic without having a corresponding adequate response from
the public health system (Gourinchas, 2020).

In the modern and complex world, a state of economic pause, which
stems from the rational behavior of individuals in an effort to protect
and comply with restrictive measures, may cause chain interactions that
negatively affect the economy. Even if science manages to reduce or even
eliminate the virus, the impact on the economy as well as on the way
economic decisions are made will be felt.

So the point is to find the right mix of economic policy that works
effectively to prevent significant economic effects while at the same time
flattening the pandemic curve (see Sect. 20.7).

20.5 Finances of Covid-19

Dealing with the effects of the pandemic requires action from govern-
ments, which, however, can be characterized by significant challenges
as they require an increase in government spending and a reduction in
government revenue. These actions, due to their size but also the sudden
need to implement them—where it is not possible to have a proper
strategic plan ready from the previous years—reduce the fiscal space or
make it negative, require help from central banks and from international
and domestic organizations.

This section presents the pressures on the state of the economy, the
economic situation of businesses and the international economic situation
due to the outbreak of the Covid-19 pandemic.

20.5.1 The Economic Situation Under Pressure

State interventions to prevent the spread of the virus but also to reduce
its effects on people, businesses and the economy as a whole, is something
that has been a priority not only during the Covid-19 pandemic as it is
something that has taken place in similar cases of pandemics or epidemics
in the past (Hughes, 2020). However, in order for governments to be effective under these conditions, they must be able to sustain their finances despite their interventions, regardless of the intense pressures. Thus, in addition to the effects of the recession on the real economy, serious financial effects may also arise; if this is not taken into account, it may lead to a deepening of the risk and an expansion of the negative effects of the pandemic on the product produced (Oxford Economics, 2020b).

Hughes (2020) presents—on the basis of experience with the management of previous pandemics in the last century—a series of lessons that we have learned. He notes the following:

- Governments should expect a significant (even two-digit) reduction in the annual rate of GDP change. According to Brahmbhatt and Dutta (2008), previous influenza pandemics have shown that 60% of the economic loss is due to efforts to avoid transmission of the virus, while only 28% of the economic loss is due to sickness and absence and 12% to mortality.
- Economic impacts could last for many months, if not years, if social distancing policies are to be maintained for extended periods. Past experience suggests that on average economies have not been able to return to a pre-crisis level until after 3 years.
- Government deficits are expected to fall even in two-digit figures as a percentage of GDP, as economic shocks reduce revenues and tax compliance, healthcare costs are rising, while businesses and individuals benefit from tax relief, and the provision and support of salaries and loans.
- Governments should aim at economic support and avoid universal or open offers to society and avoid fiscal policies that seek—without being necessary—to halt supply. One-off universal payments to all ("helicopter money") are administratively time-consuming, inefficient and unlikely to quickly stimulate the consumption, especially when most retail outlets are closed, and global supply chains are disrupted. On the contrary, budget support should focus on filling gaps in social security, ensuring that everyone has a minimum level of support and helping businesses to hold people and capital.
- The priorities should consist of the expenditures in support of the health system and support for individuals and businesses, while
governments should look at how they themselves can succeed in self-financing for extended periods, when spending is likely to exceed revenues by a large amount.

- Central banks may need to provide temporary liquidity directly to governments to finance their deficits, especially as sovereign bond markets are temporarily disrupted.
- Governments should resist the application of capital controls to protect their sources of funding, as this would further aggravate the global liquidity crisis, and further disrupt cross-border investment; trade and supply chains thereby putting the recovery of economies at risk.
- Regional and international financial institutions (such as the IMF and the World Bank) must play a vital role in ensuring that governments are able to finance themselves through the pandemic. In this way economies will be able to cope more effectively with a pandemic even in its next wave, as there may be—as in the case of the Spanish flu—a second up to a fourth wave of the pandemic.

20.5.2 State Finances

As the global economy has been hit hard by the Covid-19 pandemic, governments are offering significant help to households and businesses to help them survive the lockdowns. At the same time, with lockdowns tax revenues are falling. Governments may therefore act directly to limit the effects of the pandemic today, but this should lead to major problems in their future economies (Boot et al., 2020). Of course, this does not mean that governments are mismanaging the response to the pandemic, as limiting aid to households and businesses would be disastrous (Economist, 2020). Moreover, the main objective of governments should be to provide maximum certainty and inspire confidence (Beck, 2020). But they must go on a difficult path between stimulating the economy today and showing prudence for the future, while success is not guaranteed.

The consequences of a large increase in expenditures and a large reduction in public revenue have already started to emerge and are expected to remain in the economies for a long time. Debt in the rich world is expected to increase by $6 trillion (Economist, 2020). This is an increase from 105% of the GDP to 122% of the GDP, i.e., more than the increase
in debt in any year during the 2008 global financial crisis. In fact, the longer the lockdowns remain, the higher this increase is expected.

Although markets expect low interest rates to remain at these levels in the long term, and central banks have recently reduced inflation targets, this is something that should be treated with caution since the precise economic impact of the pandemic is not yet known. Indeed, some estimate that as soon as the effects of the virus are reduced, then a spiral effect on prices and interest rates may break out toward the supply chains destroyed by the pandemic (Economist, 2020). In fact, higher inflation levels increase nominal growth and when this rate is higher than the borrowing rate this leads to debt reduction as a percentage of the GDP.

Some economies have introduced tax systems that allow them to receive the bulk of income from high-income taxpayers, which in circumstances where capital gains (the main source of income of these taxpayers) have been particularly affected, makes tax revenues collapse. At the same time, economies that rely heavily on the tourism sector or energy are expected to bear a major impact as the pandemic accompanies large reductions in travel (either business or leisure) and large reductions in oil prices. In addition, the impact on the sustainability of the insurance system is high, as in many economies the insurance system was already underfunded as a result of the 2008 financial crisis (as it had not had the chance of recovering) and post-pandemic pressures are expected to exacerbate the problem.

Especially in the case of Europe, as claimed by Boot et al., (2020) measures taken by governments to provide liquidity for businesses and banks are essential, but there should be a coordinated fiscal plan at a European level to directly support weaker economies. Finally, this plan (750 billion euros) was announced on May 27, 2020.

20.5.3 Corporate Finances

Sharp decreases in the product produced usually lead to an increase in delays and business loan failures, but this relationship cannot be fully predictable. There are several reasons why delays and business loan failures may increase more than expected as a result of the recession associated with the Covid-19 pandemic (Oxford Economics, 2020b):
- As interest rates are already exceptionally low, the margin for policymakers to reduce corporate debt through interest rate cuts is much lower than ten years ago.
- The net debt-to-equity ratios are now at the level before the crisis and interest coverage has fallen despite low interest rates.
- There is a deterioration in the quality of credit in the business sector, which is evident from the emergence of a large number of low-grade and leveraged bonds and from the decline of large numbers of companies at very low rating grades by rating agencies; something that will probably disrupt credit markets.
- There is also deterioration in the liquidity of firms (cash-to-debt ratio) and especially in smaller firms.
- In addition to the above effects, there are also sectoral challenges affecting businesses, as there are several sectors of the economies which have been affected by the pandemic. The sectors with a continuous consumer interaction are the most vulnerable financial sectors with lower cash ratios and higher debt than average.

For reasons such as these, the outbreak of the Covid-19 pandemic could reveal financial weaknesses and create a large number of companies facing severe cash flow problems as revenue reductions and liquidity reserves are rapidly decreasing for businesses.

It is also true that low interest rates and low credit spreads have led to complacency about debt levels following the global financial crisis of 2008 and so there has been no significant deleveraging (Becker, Hege, & Mella-Barral, 2020). Thus, the Covid-19 pandemic crisis finds the balance sheets of businesses and households enlarged and bank lending at an all-time high (IIF, 2020; Graham, Leary, & Roberts, 2015).

In addition, it should be noted that the Covid-19 pandemic affected not only small and medium-sized enterprises but also large enterprises (De Vito & Gomez, 2020). De Vito and Gomez (2020) point out that while small and medium-sized enterprises and micro-enterprises are likely to have much lower liquidity reserves and less access to credit, it is also important to analyze the readiness of listed companies to address this crisis. In fact, as the Bank of International Settlements (BIS, 2019) notes, large public companies have to deal with a huge amount of corporate debt leading to the need for discussions on debt restructuring plans (Becker et al., 2020).
International markets are particularly affected by the emergence of the Covid-19 pandemic. The Covid-19 pandemic has a very strong impact on international financial markets, as the value of the shares has fallen, and market volatility has been global (Baker et al., 2020).

As in this pandemic, during crises, wars, or other external shocks, it has been observed that governments are transferring very large amounts of borrowing and subsidies to allies and others in need (Horn et al., 2020). Thus, economic crises have always been cases of state funding, including at international level (Kindleberger, 1984; Bordo & Schwartz, 1998; Eichengreen, 1995). Official creditors have played a particularly important role in international finance over the past two centuries (Horn et al., 2020). Horn et al. (2020) conclude that official lending by governments, central banks and multilateral institutions is much higher than we think and believe that this will probably also be the situation in the Covid-19 pandemic, significantly increasing the debt of economies. As economies are essentially suffering from a sudden stop of capital flows and extreme exchange rate volatility, the access to foreign currency liquidity (SWAPS) is necessary to prevent a health crisis in an economic downturn.

As Yeyati notes (2020) the economies that may need more support from international organizations are emerging markets, especially after considering voices that “this time it is really different” (Reinhart, 2020) and that in order to avoid a debt crisis in emerging markets, a “whatever-it-takes” approach (Ghosh, 2020) should be followed, including exceptional liquidity facilities in dollars (Lowery, 2020). As he notes, the reason for this is that emerging markets are losing quality by facing issues such as sudden disruptions in capital flows, currency pressures, credit spreads and reduced global demand. In fact, the Institute for International Finance notes that by March 2020 investors had already “drawn” $42 billion from emerging markets, a decrease that is the largest outflow ever seen.

Although the management of the 2008 financial crisis now provides some experience for economic policymakers, there are still no clear answers to address all issues. The FED activated the dollar-swap lines with central banks of a few economies, similar to 2009 (Bahaj & Reis, 2018). Also, bringing these practices to emerging markets facing issues could be a success if the IMF managed the existing swap agreements on a large, strong currency liquidity network (Bahaj & Reis, 2018).
20.6 The Covid Moment, Monetization of Debt, Helicopter Money and Modern Money Theory

Minsky (1986) took the view that three types of financing were found in the economies (see Chapter 16, Sect. 16.6): (A) compensatory financing, that is to say, when businesses rely on their future cash flows in order to repay the amounts borrowed; (b) speculative financing, where companies rely on their current cash flows to repay interest on their loans but should pass on their debt to pay the initial capital; (c) the most risk-prone case is the one called ponzi-type financing; where the cash flows are insufficient to finance either interest or loan capital. The “Minsky moment” in which a ponzi-style funding bubble breaks down results in a reduction in the value of assets and credits.

There are not few people who consider that the Covid-19 pandemic crisis could be a case of a Minsky moment, even though it has not been characterized yet as such (May 2020). Such a possible development, which gives rise to considerable concern to economic policymakers and to the market, is causing budgetary and monetary policy to intervene in the foreseeable future in order to prevent it from happening. UNCTAD (2020) points out that a combination of deflation in asset prices, weaker aggregate demand, increased debt pressures and deterioration in income distribution could lead to a further downward trend. A case of widespread insolvency and possibly a “Minsky moment,” a massive collapse of asset values that would mark the end of the development phase, cannot be ruled out.

In response to the effects of the Covid-19 pandemic, most governments around the world have started to implement various emergency actions (Baldwin & Weder di Mauro, 2020). As a result, probabilities of large-scale currency monetizations of the deficits created have increased, which is expected to result in a major high inflation episode (Blanchard & Pisani-Ferry, 2020). As pointed out by Blanchard and Pisani-Ferry (2020) the problem of large-scale currency-monetisation is caused by the tendency of central banks to trade in government bonds aiming to the sustainability of public economics rather than macroeconomic stability objectives. If interest rates are zero then there is no problem, but if there is in future an increase in monetary policy rates then the central banks will have to make incredible high interest payments.

Of course, despite the fear that government practices will lead to large-scale monetisation and thus to large-scale inflation incidents, there are
some who propose that Central Banks should “helicopter money” to their economies (Galí 2020). In fact, there are some who have been characterizing “helicopter money” as a monetary policy tool well before the onset of the Covid-19 crisis (Grenville, 2013; Reichlin, Turner, & Woodford, 2019). Of course, what is happening under the conditions of the Covid-19 pandemic is that governments should provide capital to households and businesses and in a sense they do what is called “helicopter money,” although in a much more targeted way than that the central banks would do (Blanchard & Pisani-Ferry, 2020). Galí (2020) argues that “helicopter money” as fiscal interventions are particularly powerful tools, as they have a significant positive impact on the production and sales of businesses or even sectors facing supply or demand issues. However, there are reservations about their use as a policy tool and therefore they should only be used if they are very necessary and the other economic policy options are expected to have effects either on the short or on the long term. For this reason, Galí (2020) concludes that Covid-19 is perhaps the time to use them.

The slowdown in developed economies in recent years has stimulated the so-called Modern Monetary Theory (MMT), which challenges conventional economic thinking on debt management, deficits, and other economic issues. Of course, this is a vision that began to draw the attention at the beginning of the 1990s, but the decade of fiscal adjustment following the 2008 global financial crisis and the depletion of formal monetary policy strategies and the increasing income inequality have salvaged it at a great extent recently (Fullbrook & Morgan, 2019). In fact, the recent large QE program from the FED that aimed at stimulating recovery and financing deficits for the US due to the existence of Covid-19 and its economic impact such as ECB and BoJ, essentially imitates actions on which MTT is concentrated but not actually embracing them (Oxford Economics, 2020b).

MMT focuses on countries with their own currency (Wray, 2019). It argues that a country with the possibility of printing its own currency can create and spend money freely as long as inflation remains under control. This does not force the country to stop paying its debts, since it can always print money to pay its creditors. It essentially requires a drastic increase in public spending to fight unemployment and promote social policy programs, but it also wants to see ECB support in this direction. It supports the printing of money for the financing of public programs, which will be directed directly to the real economy and not for money,
designed to stimulate liquidity in the financial markets, in the hope that this will then pass on to economic growth (Fullbrook & Morgan, 2019).

Nersisyan and Wray (2020) note that MMT provides an analysis of fiscal and monetary policy that can be applied in countries with their own non-convertible currencies. Based on MMT, the sovereign currency issuer: (i) does not have an income restriction; (ii) cannot be left without money; (iii) fulfills its obligations by paying in its own currency; and (iv) can set the interest rate for any obligations it issues.

However, the MMT also finds solutions for countries where the currency in circulation is issued by an institution outside the country, as is the case in the countries of the euro area. As Andresen notes (2019) this can be resolved by the introduction of a parallel national currency (Andresen, 2012, 2018; Andresen & Parenteau, 2015).

### 20.7 Economic Policies in the Time of Covid-19

World-wide management of the Covid-19 crisis has been built up on the trade-off between the functionality of the economy and the value of human life. Other leaderships favored the first against the second option more. In countries where the political leadership has chosen to safeguard society immediately, this has proved to be an excellent policy. The opposite option in favor of the functioning of the economy has had serious effects which quickly caused the collapse of economies with serious social hardship.

A wait-and-see behavior which involved the development of economic policy in waves and the gradual development of the “defence” of the economic policy was preferable, for a number of reasons:

(a) By early April 2020, in the majority of countries, there was a low epidemiological and economic load of information, making it difficult to shape the image of the immediate future. So we knew too little about the epidemiological characteristics (behaviours, drugs, tests, etc.). As time passes, information completeness improves and allows the formulation of a roadmap to exit restrictive social policies.

(b) There was not enough analysis of the cost of the sudden stop of capital flows of economies since it was almost unannounced for epidemiological reasons.
(c) There was no image of the international and, in particular, of the European economic response to the crisis, but only national efforts.

However, as time progresses in all three of the above, information has accumulated, and the availability of options is more visible. It is therefore advisable to replace the waiting period with an approach that uses concrete future scenarios, one of which is the dominant one and at least one will be the worst.

If conditions change for any reason (extension of closed businesses, discovery of tests, medicines, vaccines, etc.), the prevailing scenario will be replaced by a better/worse scenario.

An important issue that arises in relation to the economic policy to be followed is whether the primary issue of the economy is a fall in overall demand or a disruption in product supply.

It is clear that supply problems are the first to emerge in the economic system and then the problems of overall demand were added (see Sect. 20.3). In this way, policies should initially be put in place to flatten the economic curve. As a result of such policies, they extend the length of time in which the phenomenon is still taking place, but reduce its intensity, thereby giving time to the state organization to proceed with strategic planning and implementation. Thus, appropriate time can be provided for the development of drugs and vaccines to deal with the virus or to prepare the health system and to produce medical masks, gloves, and other species for the protection of the population (Budish, Kashyap, Koijen, & Neiman, 2020). Policies to flatten the economic curve should therefore aim at the following (IMF 2020; Baldwin & Weder di Mauro 2020):

(A) Ensuring the functioning of the main sectors of the economy. It should be ensured that companies—and especially those in sectors of the economy that have been hit more by the effects of Covid-19—continue to be viable. They may be strengthened by borrowing on favorable terms, with suspensions or even by discounts on tax payments, suspension of loan payments or even direct economic assistance.

(B) Securing the livelihoods of the people affected by the crisis. It is important to ensure employment and pay for workers even if they should remain quarantined at home or stay at home to care for
family members. Households should be able to cover basic costs such as rent, utilities, insurance, etc.

(C) Avoidance of widespread economic disruption. It is important that the financial system is also strengthened because, due to the economic difficulties of households and businesses, non-performing loans are expected to increase. It must be ensured that the crisis does not turn into a long-term economic crisis. Central banks can provide emergency liquidity to the financial sector (e.g. the ECB has moved on among other actions to the TLTRO-III, the Pandemic Emergency Purchase Programme (PEPP), and the Corporate Sector Purchase Programme (CSPP). Their amount is estimated at around 1.3 trillion euros). Fiscal stabilizers (reduction of fiscal revenues and increase of transfer payments) also contribute to the bankruptcy of households and businesses.

(D) Effective and transparent information for all members of society. During the onset of the phenomenon and after the emergence of most of the social consequences of the pandemic, governments should provide a framework to shape smooth living under social distancing measures. Thus, all critical information should be made known to the members of society by all means, and good practices and the functioning of institutions should be disseminated to provide for the lowest possible degree of the spread of the disease, while ensuring safety and the productivity of individuals.

The policy mix needed to stimulate households, businesses and the financial sector includes both liquidity and solvency measures. Table 20.2 presents a number of policy proposals by the IMF (2020).

The main objectives of policies should be to halt negative feedback and channels of transmission of the crisis since the recession is already in place. In the short term they will be monetary and budgetary, and in the medium- and long-term restructuring. The difference with the policies of the 2008 crisis lies in the fact that fiscal policy is now playing a more serious role because, firstly, monetary policy is almost exhausted (except for the extent of the debt monetisation) due to a zero-lower-bound approach, and secondly, because fiscal policy can better address supply distortions. The overriding objective of fiscal policy should be to improve the health system as this also means increasing the availability of intensive care units. Such a strategy plays a dual role as the system
Table 20.2 Policy measures to stimulate households, businesses, and the financial sector

| Liquidity                                      | Solvency                                      |
|------------------------------------------------|-----------------------------------------------|
| Households                                    |                                               |
| Suspension of mortgage payments, student loans| Transferring cash                              |
| Deferrals of tax liabilities and social       | Unemployment insurance                         |
| insurance contributions                       |                                               |
| Undertakings                                  |                                               |
| Extension of the maturity of loans            | Capital injection                              |
| Deferrals of tax liabilities and social       | Subsidies to maintain employability            |
| insurance contributions                       |                                               |
| Purchase of commercial securities and bonds   | Direct subsidies based on past sales (based on taxation) |
| Direct provision of credit by the central     |                                               |
| bank                                          |                                               |
| Credit guarantees                             |                                               |
| Financial sector                              |                                               |
| Liquidity provision for financial intermediaries | Capital injection                         |
| Actions to maintain market liquidity          | State guarantees                               |

Note  Liquidity measures include borrowing or deferrals of payments. Solvency measures include transfers, waivers from payments and non-refundable goods or services
Source IMF (2020) and author’s own creation

has the potential to treat more patients at the same time, while the lockdown measures are being reduced. Let us not forget that one of the main reasons for restricting individuals and lockdowns is to enable the health system to respond to all incidents as required by medical rules and not in order of age priority. Of course, such support to the health system brings high budgetary costs.

In addition, it is particularly important for markets and their functioning to make it clear to all that governments and supranational organizations (e.g. the European Commission) will be able to significantly support efforts to tackle pandemic phenomena. This can be done by sending strong signals in all directions, which may smooth the reactions of the markets. Also, as Gourinchas notes (2020), international organizations (such as the IMF, the World Bank, etc.) should be involved, with the help of developed economies offering necessary support to economies in need, and in particular to emerging economies.
An important issue remains the time to implement appropriate economic support policy. It is important that economic support packages are targeted, especially at the time of lockdowns and be extended to the period after, if the devastating consequences of the health crisis are not reduced. It is important that they act as a deterrent to the collapse of the economy (Baldwin & Weder di Mauro, 2020).

20.8 The Long-Term Effects of Covid-19

In addition to short- and medium-term effects, pandemics appear to have long-term effects which are significant. Major efforts to mitigate and contain the immediate effects of pandemics by governments lead to future uncertainty in economies.

In an attempt to calculate these long-term effects, Jorda, Singh, and Taylor (2020) use data on long-term government debt yields from the fourteenth century (Black Death) onwards (Schmelzing, 2020) and estimate the effects of fifteen large pandemics on the European balance rate. They use the balance rate as it is an important variable for central banks and serves as a barometer for economies (Eggertsson, Mehrotra, Singh, & Summers, 2016). They conclude that pandemics have effects that can last for several decades: (A) after a pandemic, the natural interest rate falls by about 1.5 percentage points about 20 years later and returns to a pre-pandemic level about 40 years later. (B) Unlike pandemics, in the case of wars, the relative deterioration in capital relative to labor increases interest rates for about 30–40 years. (C) In addition, in line with the neoclassical growth model, the impact of pandemics on wages is contrary to the one on interest rates. As opposed to the Black Death, Mukherjee (2020) draws relevant conclusions on the real interest rate trend, noting that the Covid-19 pandemic could affect economic life for much longer than we expect.

In fact, markets may well underestimate the long-term effects of the Covid-19 pandemic. The impact on the labor market of even entire sectors can be devastating for a huge number of employees, while at the same time, despite the fact that the pandemic may subside, markets may fail to assign proper prices with the expectation of a more slow long-term growth that can be the legacy of the Covid-19 pandemic (Oxford Economics, 2020b).

In fact, the state of an economy and the level of the GDP depend significantly on the prior experience of the effects of external shocks, as is
the case with Covid-19. This is essentially the concept of hysteresis (Cerra, Fatas, & Saxena, 2020). There appears to be clear empirical evidence that fluctuations in GDP have a long-term impact on the future GDP trend (Cerra et al., 2020). The reason is that the cyclical shocks do not concern movements on the GDP trend but changes in this trend. Thus, the persistence of cyclical fluctuations can be seen as the trauma of an external shock in economies.

These conclusions feed into the thought of low interest rates in the long term, strengthening the case of a secular stagnation hypothesis (Hansen, 1939; Summers, 2014) for at least two decades to come (see Chapter 18). A prolonged period of low real interest rates will probably provide fiscal space for governments to mitigate the consequences of interventions to combat the pandemic. In fact, secure government debt issues can help prevent a further downward trend in real interest rates (Jorda et al., 2020).

**Notes**

1. I would like to thank Dr. Kyriaki I. Kafka for her valuable contribution in the development of this chapter.
2. This book is authored in May 2020.
3. A number of recent health findings questions the start (spatial and temporal) of the pandemic.
4. In fact, this happened for the first time in 2001, when US money markets unexpectedly closed down and foreign banks with significant investments in dollars were in crisis. At that time, the FED created an emergency liquidity facility, lending the Bank of Canada, the Bank of England and the ECB up to USD 90 billion via a swap line to the domestic currency, and then these central banks lent their domestic banks. The consequences of this action were rapid, since after the opening of markets the swap line closed and the liquidity crisis was averted (Bahaj & Reis, 2018).
5. The purchase of bonds by the central bank in exchange for money—which is essentially the extent to which public debt is monetized—does not affect the dynamics of public debt (Blanchard & Pisani-Ferry, 2020).

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