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Shevchenko V. Yu.
Candidate of Economic Sciences, Associate Professor
Taras Shevchenko National University of Kyiv

PANDEMIC GLOBAL SHOCKS AND NATIONAL ECONOMIES

Summary

Global pandemic of COVID-19 coronavirus since beginning of 2020 has caused quick and deep changes in the world economic and social environment. The unexpected nature and high speed of such changes could be considered several respects: public health shock due to rapid spread on new coronavirus COVID-19; economic shocks as pandemic impact on business freezing and GDP contraction; financial shock as quick overrun of budget spending for virus resilience and economy protection; social shock due to lockdowns and job losses.

The nature of such shocks should be discovered in order to consider their impact, short-term and future implications. The cumulative outcome of such shocks is ignition and deepening of world economic depression, uncertainty with recovery and returning to the normal economic growth. The possibilities and type of recovery would be also linked to structural changes in the national and world economies.

World trade, market trends and globalization should be re-thought in a view of a new normal since pandemic shocks. The shocks consequences should be managed on the national and international levels.

Introduction

At the end of 2019, the forecasts of the IMF and other international organizations have predicted moderate world economic growth. As it have been discovered later, similarly at that time the hidden traces of coronavirus named COVID-19 have been allocated in different places: in China with several cases of ill people, in sewage water samples collected at that time in Italy and Spain.

The threat of coronavirus COVID-19 have appeared in January 2020 in China, infection clusters emerged in February 2020 in few European and Asian countries and, since March 2010, a virus cases have been rapidly spillover to different countries. COVID-19 has been considered as extremely dangerous due to transfer between people, not studied nature, unknown treatment protocols, no targeted medications and vaccines. Virus consequences in many cases were life-threatened: rapid pneumonia, impact on the cardiovascular system and internal organs, worsening of other illnesses. Virus cases and deaths tolls increased in cases of large groups of people, especially seniors – sport events, hospitals, care homes. Therefore, WHO and governments considered virus as pandemic extremely dangerous for the world population.

Pandemic has generated rapid and wide challenges, which has become, in fact, as a cluster of public health, economic, financial and social shocks affecting the virus cases countries and the global environment.

Globalization has enforced interconnectedness of countries by intensive international trade, cross-border value chains, flow of capital and information, people travel and migration. Therefore, globalization has made the ways of coronavirus spillover between nations. The pandemic resilience was based on the breach of connection to stop spillovers.

The nature of the pandemic generated shocks should be discovered in order to assess their current and potential impact on the economies and financial systems. Major cumulative shocks outcome are enforcing the world economy into depression.

Therefore, a cycle «shocks-depression-recovery» should be studied in order to foresee a character and deepness of recession, its major implications specific in different countries. The recovery types and time frame also should be considered in line with policy recommendations.

Part 1. Pandemic related global shocks

Rapid spread of the dangerous COVID-19 generated a shock for public health systems – uncertainty with virus spread, extreme demand for medical services, lack of medical supplies. Many of country's public health systems capacity to withstand virus spread and provide treatment have been considered as inadequate. Emergency measured by governments have been introduced from country to country. Those policies were to get emergent medical supplies (face masks, protection for medical staff, special equipment such as lung ventilation equipment), extension of specialized infections hospitals capacity by re-profiling of existing hospitals, construction of new buildings and conversion of large spaces (like sport and exhibition halls) into equipped bedded facilities.

Public health shocks and urgent need to improve hospitals capacity to withstand virus have generated extreme demand for additional funding, which could not be met within allocated budget provisions. Countries have to rise urgent funding from domestic and international sources, including emergency financing from the IMF and other international organizations.

To downsize the virus impact, many countries imposed lockdowns, most businesses have been shot down, cities, domestic and international transport has been terminated, economic and social life has been mostly frozen. Communication within and between countries have been disrupted, foreign trade has been eliminated, international supply chains and services have been interrupted.

Pandemic has generated very quickly the shocks to markets and economic connections. By expression of Professor Roubini, a well-known futurist, who predicted global financial crisis of 2008, «The shock to the global economy from COVID-19 has been both faster and more severe than the 2008 global financial crisis (GFC) and even the Great Depression. In those two previous episodes, stock markets collapsed by 50% or more, credit markets froze up, massive bankruptcies followed, unemployment rates soared above 10%, and GDP contracted at an annualized rate of 10% or more. But all of this took around three years to play out. In the current crisis, similarly dire macroeconomic and financial outcomes have materialized in three weeks» [12].

Pandemic following the health shock, have generated a number of other shocks for the world. It takes to clarify in general the nature of shocks and how they are influencing the economy and society. Pandemic generated shocks cluster could be designated such as:

– psychological shock as reaction on the unexpected event of unknown and deadly dangerous virus in the conditions of no proven medicine and vaccine, this put strong stress and fear of uncertainty on population and decision-makers;

– public health shock have emerged due to rapid spread on coronavirus COVID-19 with dangerous impact on human life, lack of effective medications and medical supplies, challenge to the hospitals capacity;

– economic shocks resulting of public policies to eliminate virus spread by freezing business and social activities, which led to contraction of the economies and markets;

– financial shocks ignited by extraordinary expenses for virus localization and treatment, business and social losses resilience;

– social shocks originated in changes of social imperatives of life such as lockdowns and remote work, social consequences of public health shocks and economic shocks such as unemployment, lockdown and switch to remote activities.

The broad range of actual shocks is raising an issue of general understanding of shocks nature. In researches two major types of shocks of different origin are mostly considering – psychological and economic shocks.

Psychological shock is generally emerging in result of strong emotions and individual (or group) reaction to unexpected stressful event. It results as inadequate emotional reactions, uncertainty, public speculations, and decisions in conditions of unproven information, time limits and probabilities. Psychological shock in the time of pandemic was initial public reaction on the information about new unknown and deadly dangerous virus. Psychological shock follows the virus cross-border spillover and should be taken into account while imposing social and economic measures such as lockdowns and businesses terminations.

General look at psychological shocks helps to formulate understanding of shocks to be applicable to different areas.

Shock can be considered as unexpected rapid event and substantial change in the conditions and factors of various activities, which disrupt their normal course and cause systemic negative reaction, leading to accumulation of risks and negative consequences. Shock cannot be treated such as probability of some events – in case of probability measurement it provides an option to assess risk and manage it. Risks are also attributed to some possible events, in contrast, shocks are exactly unexpected event-linked, but have some systemic impact influencing some specific areas of life and activities.

Some authors are designating systemic features of economic shocks: they are generated by singular event, large scale effect, unexpected, exogenous (not generated inside the economy) [4]. All such features have appeared in cases of pandemic related shocks. At conditions of globalization, the pandemic shocks quickly became cross-border and systemic, affecting major areas of social and economic life.

Pandemic related shocks are different from economic and financial crisis. The latter are caused by imbalances accumulated within economy and financial sector. Therefore crisis is a way of rebalancing of the economy and financial sector with combination of market forces and governmental regulation.

Pandemic of coronavirus COVID-19 is of natural origin (like natural disasters), which has generated global shocks due to dangerous virus cross-border spread, which is affecting population and causing overflow of patients to the health systems.

Defensive measures to eliminate such health shock are targeted to block virus cross-infection from one to another individual, from one to another country. Shock effect prevention is the lockdown for population at home, freezing of local and international transportation, shutting down of economic activities especially services, which involve groups of employees or customers. Such lockdown has economic and social implications: drop of companies output, turn nations into economic depression, which lead to increase of real or covered unemployment, loss of businesses financial liquidity, falling personal incomes. Respectively, the social implications of lockdowns are closing of borders and international passenger transportation, breaking of family and social communications, downsizing of various activities, abolition of mass events and public services.

Lockdowns and other preventive governmental actions have triggered the next wave of economic shocks. Therefore pandemic economic shocks are inspired by the governmental decisions, but not by market imbalances such as economic and financial crisis.

The pandemic economic shocks could be specified by the major economic functions (or sectors) respectively with a view to their role in the functioning of the economy.

Demand shocks is mainly result of fast freezing business activities causing respective decrease of demand for supplies, commodities (except agricultural), fuels, electricity, transportation and business services. The key outcome of demand shocks is rapid fall down of oil prices, which, in turn, put many oil companies into financial illiquidity.

Demand for oil decrease mainly from big consumers such as China and Europe.

Such surge drive an agreement known as OPEC+ came into effect since May 2020 to decrease oil supply from major oil producing countries such as Saudi Arabia, Russia, Nigeria and others in order to keep market balanced and reasonable prices.

A systemic indicator of the demand shock is electricity consumption decrease during pandemic due to businesses closures or moving online, people lockdowns at homes, railways transportation freezing etc. Electricity industry has a strong condition that demand and supply should be balanced at any time, so production was put into situation to keep extreme efforts for balancing.

Supply shocks are due to frozen businesses, broken international and domestic value chains, cancelled international passenger services etc. Special case of it is cancellation of international air services, which drives this sector into deep crisis. The volume of international air services has drop down for 82 % in second quarter of 2020, the estimated loss of revenues is accounting in 314 billion USD this year [5, p. 3, 5].

Supply shock affected a number of services like accommodation, cafes and restaurants, fitness and beauty, etc. Many affected services were traditional areas of small and medium size businesses, which, in fact, became under major pressure and put into survival during pandemic.

Structural changes of supply have been mostly related to lockdowns and are primarily focused on two major switches: 1) rapid development of the distance food supply and electronic trading; 2) keeping going supermarkets instead of small food shops have been mostly closed. Respectively, in the recovery period, many small shops may not be reopened or will not be competitive and supermarkets position may be increasing.

Employment and social shock is due to full or partial loss of jobs, switch from traditional to distance organization of different jobs, outplacement of migrant workers and their relocation back to home countries, drop of job vacancies, increase of jobs related risks.

Full or partial lockdown have affected 2.7 billion workers or 81 % of the world workforce at the beginning of 2020. 1.25 billion workers or 38 % of the world workforce are in sectors of severe decline of output and therefore at risk of deplacement [6, p. 1-3]. World trade seriously disrupted and contracted on all markets and regions.

Financial shocks are due to the emergent expenses to support health care systems, lost revenues and liquidity of businesses, reduced taxes to support companies and social protection expenses, fiscal deficits and debt servicing cost, frozen access to international financial markets, outflow of capital from emerging and developing countries.

Financial shocks responses in different countries have been on the use of combination of monetary and fiscal measures to overcome pandemic challenges.

Typical monetary instruments have been: downsizing of the central banks rates in order to support lending activity, quantitative easing of money supply, emergency asset-backed lending facilities of central banks for commercial banks.

Emergency, additional and flexible financial facilities have been provided by international organizations – the International Monetary Fund, the World Bank Group, the European Union, and the European Central Bank – in order to feed additional resources to countries to overcome pandemic related financial shocks.

One of financial shocks consequences is accumulation of increased domestic and international debts by institutional sectors of national economies – governments, financial and non-financial corporations. This will influence on the post-pandemic recovery to be carried in conditions of increased cost of debt servicing.

Part 2. Shocks and economic recession factors in different countries

Globalization influences on interdependence of countries via production linkages, foreign markets free access, financial flows, and international communication. At such global environment shock in one country propagates similar in others and international implications.

The nature and extent of global shocks and economic downturn are considering as most serious after the Great Depression of 1929-1933 and more loss-making then the 2008 financial crisis.

The new extreme virus and absence of vaccine make the future post pandemic rebound and recovery very unclear. Therefore, the economic and financial prospects are looking instable and volatile in a short and medium term period.

Shocks related economic situation has been differentiated in countries under influence of international and country specific factors. The international factors are: transport and export restrictions, international trade disruptions, global production chains gaps, international financial flows instability. The country specific factors are: COVID-19 cases and health system capacity, economy structure, financial and fiscal cost of virus resilience, expenses for keeping businesses and employment, debt increase.

The industrialized EU countries, which been largely affected with COVID-19 cases (Italy, Spain, France, Sweden), have higher GDP contraction in comparison with the EU average. Emerging countries of the EU (Hungary, Poland, Latvia, Lithuania and others) have lower level of cases and comparatively better GDP rates as to average. Structural factors like larger share of services, international transport and trade in industrialized countries, also would influence on relative GDP results. Relatively lover virus cases, policy responses and fiscal stability in the emerging EU countries have also influenced on relatively lesser GDP contraction and therefore better prospects for rebound.

Table 1

GDP change in the selected industrialized and emerging countries of the EU, first quarter of 2020, %.

Country	GDP change in 1/quarter 2020, %	Country GDP change to EU GDP change
EU 27	-3.2	-
Euro area	-3.5	-
Selected industrialized / Europe		
Austria	-2.6	+0.6
Belgium	-3.6	-0.4
Germany	-2.2	+1.0
France	-5.3	-2.1
Italy	-5.3	-2.1
Netherlands	-1.7	+1.5
Portugal	-3.5	-0.3
Spain	-5.2	-2.0
Sweden	+0.4	+3.6
Selected emerging / Europe		
Estonia	-3.7	-0.5
Czechia	-3.3	-0.1
Hungary	-0.4	+2.8
Poland	-0.4	+2.8
Latvia	-2.9	+0.3
Lithuania	-0.3	+2.9

Calculated by using data: Eurostat. Economic Indicators. 2020.

Structural factors of the shocks impact could be assessed with the relative data of national economies sectors. Some industrialized countries have statistically reliable data on pandemic related implications for economic sectors. For example, data for United Kingdom are reflecting implications of initial stage of shocks in February-April 2020.

The data show that the most contracted sectors are those more affected by lockdowns and transportation restrictions. Agriculture looks less affected in conditions of more flexible balance of work and life during pandemic in the rural areas. Sectors differences are also reflecting possibilities of adaptation in lockdown condition. Such adaptation would be carried such turn to remote working or rolling shifts or the Internet trading and delivery to customer.

The economic sectors could be differentiated depending on extent of downturn due to production and structural conditions into the following groups:

1) Less affected sectors are those with no or minimum loss of output due to specific of production and demand: agriculture, continuing manufacturing

industries (steel, chemical, food production and distribution), food retail trade (supermarkets), municipal services (water, sewage, heating, waste management, etc)).

2) Moderate affected economic sectors with output drop ranged in 10-20 % caused by demand and supply shocks: retail sales, administrative services, education, electricity, car and machinery manufacturing.

3) Substantially affected sectors: oil and gas industry, tourist industry, international transportation, airlines, leisure services.

Table 2

GDP subsectors change rates in the United Kingdom during initial three months of COVID-19 pandemic, February-April 2020

	February-April 2020, change rate	**Difference with whole economy**
Accommodation and food services	-40.9	-31.4
Education	-18.8	-9.3
Transport and storage	-18.3	-8.8
Construction	-18.2	-8.7
Administrative and support services	-15.7	-6.2
Wholesale, retail and motor trade	-14.5	-5.0
Manufacturing	-10.3	-0.8
Agriculture	-2.1	+7.4
Whole economy	-9.5	-

Calculated by author based on the source: Office for National Statistics. United Kingdom. 2020.

Table 3

Business turnover change in the UK in June 2020 in comparison with the normal business practice of the same period of the year, business impact of coronavirus survey June 01-14, 2020.

Change in turnover	**% of businesses affected**
Turnover has increased by more than 50%	1
Turnover has increased by more than 50%	3
Turnover has increased by up to 20%	5
Turnover has not been affected	22
Turnover has decreased by up to 20%	20
Turnover has decreased between 20% and 50%	22
Turnover has decreased by more than 50%	22
Not sure	6

Source: Business Impact of Coronavirus Survey. Office for National Statistics. United Kingdom

Small and medium sized enterprises have been affected by lockdowns due to their role in services, they also are usually less financially stable and more reliable on market changes.

Overall 64% of businesses have had decreased turnover and respectively unbalanced or distorted financial situation. Post-shock depression will put stress on the businesses balance sheets and further recovery would require a set of measure to restore financial stability.

Different rates of GDP contraction during pandemic also would be influencing on the recovery mode. Usually, the following major economy recovery models are considering:

1) V-model: quick drop during not a long time and relatively soon rebound;

2) U-model: quick drop, longer time of low point of contraction and slower rebound;

3) L-model: quick drop, long contraction and depression.

It looks that mist of industrialized countries and China now moving based on the V-model. As for emerging economies, the prospect would be differentiated primarily due to the quality of institutions and policies effectiveness.

Global and regional economic prospect are assessing by international organizations, major world banks and governments, the band of forecast looks variable.

The International Monetary Fund expectations are usually considered as conservative and assessed first of all on macroeconomic and external balances, budgetary and fiscal policies.

Positive forecast for 2021 will born the effect of low base in 2020, so, in fact, the most economies are expected to recover to the 2019 level and up only after 2022. The data also shows a continuation of the economic growth differentiation with a lead of emerging and developing economies. The short term economic prospects for Ukraine depend on the movements of world commodities markets and fiscal cost of pandemic. The IMF urgent crisis funding would be essential for resolving severe of international debt servicing in 2020.

Table 4

GDP growth in 2019 and forecast in the times of global coronavirus COVID-19 pandemic for 2020-2021, % year to year.

	2019	**2020 Forecast**	**2021 Forecast**
World	2.4	-3.0	5.8
Advanced economies	1.7	-6.1	4.5
USA	2.3	-5.9	4.7
Euro area	1.2	-7.5	4.7
Emerging and developing economies	3.7	-1.0	6.6
Emerging and developing Europe	2.1	-5.2	4.2
Ukraine	3.2	-7.7	3.6

Calculated based on source: [14, p. 19, 31]

Unpredictability of the economic recovery is a systemic result of set of shocks impacts on national and international economies. It requires to develop and implement variable complex economic and social policies domestically and internationally, to strengthen cross-border cooperation and solidarity.

Ukraine as the small open economy is experiencing similar pandemic shocks such as the European countries and resilience policies: lockdowns, business activities freezing, demand and supply shocks, financial distress. Macroeconomic situation looks stable with inflation at 1.7% (year-to-year basis) still below of the year target at 5%. In March 2020, major contraction indicators were (year-to-year basis): industry – 12.2%, agriculture – 4.0%, transport – 26%, electricity – 8.2%. [16].

Global conditions for the Ukrainian exports were controversial, prices for the major export goods – ferrous metals and agricultural commodities – fluctuated with downsize trend due to global supply and demand shocks. Simultaneously same shocks have drive down prices for oil products and natural gas, push down demand for imported goods that drives current account in positive numbers at 1.4 billion USD [16]. Capital outflow have been mainly with repayment of governmental bonds. So, balance of payments stays in stable position.

Conclusions

Global pandemic shocks have appeared in several directions: health care shocks, economic shocks, financial shocks, social shocks. They have driven economies contraction and social stress.

Global pandemic shocks have created a situation of uncertainty with respect of daily COVID-19 situation in every country as well as to possibilities of gradual rebound and effective governmental regulations. Uncertainty remains fundamental systemic feature of current situation.

In order to withstand global pandemic shocks it could be reasonable to recommend the time-fashioned economic policies for many governments and Ukrainian authorities in the first instance.

Current policies should be focused on prevention of current virus situation, medical supplies and gradual softening of restrictions for businesses and people.

Keeping budget, inflation and employment under control are essential.

Short-term policies (1-2 years) should be focused on restoration of business and consumers confidence, aggregate demand in order to assure stable rebound.

Medium-term policies should be concentrated on macroeconomic stability, external balances and sustainable economic growth. Structural reforms and innovations would become essential for stable growth.

To improve readiness for future shocks and risks, it takes to concentrate on development of biotechnologies, big data and artificial intelligence, communication networks and inclusive society.

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