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Using Economic Barometers to Analyze the Impact of the COVID-19 Pandemic on the National Economies

Bearing in mind a number of factors, well-known analytical companies and individual economists have been warning over a long time about the impending recession of the global economy. But the unexpected powerful impact on it from the pandemic can aggravate even the worst projections. Analysts are attempting to predict the economy development at global, regional and country level, in order to grasp and prevent future negative effects of the pandemic in all the spheres of human life.

Now there exists a variety of qualitative indicators based on information from Business Tendency Survey and Consumer Sentiment Survey. Respectable international and national institutions use these indicators to quickly assess the current economic situation and predict its change for the several forthcoming quarters. These indicators are considered as very sensitive to any kind of events taking place in the economic and social life, because they are capable to provide the earliest signals of future change in the economy.

The article contains a review of the dynamics of changes in the Global Economic Barometers computed and analyzed by well-known analytical institutions, and the barometers' capacity to reflect the new pandemic's impact on the global economy. The barometers provide up-to-date information about changes in the economy in the current month, with a strong lead over the official quantitative information.

To estimate the pandemic's impact on the development of Ukrainian economy, the author proposes to use Economic Sentiment Indicator and Business Confidence Indicators in the industry and the retail trade (for investigating the supply and demand), which are computed by the official statistics on the basis of qualitative information obtained from the surveys. These indicators are harmonized from the analogous European indicators, but issued with the quarter periodicity now. The conclusion is made about the urgent need to adopt the monthly periodicity for these and other barometers, created according to the European methodology, to enable for quick demonstration of the pandemic's impact on the development of the Ukrainian economy. Also, it is proposed to search for new barometers that would be capable of providing for a more accurate reflection of change in the Ukrainian economy.

Key words: *economic barometers, Economic Sentiment Indicator, Business Confidence Indicators by economic activity, Business Tendency Survey of enterprises, Coincident Indicator and Leading Indicator, GDP, pandemic of SARS-COV-19.*

Introduction. It was repeatedly stressed in research works (see e. g. [1; 2]) that economists had been expecting a new global crisis that would precede the unfolding of the sixth great cycle of Kondratiev. But the pandemic announced by the World Health Organization will considerably accelerate and deepen the crisis manifestations, affecting not only financial markets but all the spheres of human life, not excluding economic and social ones.

As follows from a projection of rating agency S&P Global, a sudden failure in the economy, caused by measures aiming to curb the pandemic of coronavirus, will provoke the global recession later this year. S&P Global says that the pandemic of coronavirus is being intensified, with growth rates rapidly declining amidst instability on the markets and the growing

loan stress. The agency's analysts predict the global recession in the current year, with the global GDP increasing by as low as 1.0–1.5% [3]. Relying on the preliminary data, they say that the Chinese economy had been hit stronger than expected, but the situation has already begun to stabilize and will develop quite similarly in Europe and the U.S. Limitations on personal contacts have collapsed the demand, which is supposed to heavily decline the economic activity in II quarter. The global economy will start to recover later this year.

Economists from investment banks Goldman Sachs i Morgan Stanley also say that the pandemic of coronavirus has provoked the global recession. The former predict that the growth will make 1.25%. The latter regard a recession in the global economy as the basic scenario and expect that its growth in this year will slow down to 0.9% [4].

According to outstanding Swedish economist A. Aslund, at the end of February the world suddenly began to plunge into crisis provoked by the pandemic of Covid-19, although the day before stock markets had closed at nearly the record high level. Since then, global leaders have only aggravated the already bad situation. At the beginning of March, Russia and Saudi Arabia broke up a price war on the oil market, to shake global markets even stronger. Given the worldwide financial panic combined with the declining rates of economic growth due to coronavirus, the global recession in this year is actually guaranteed [5].

To predict economic and financial crises and fluctuations of business cycles, many economists analyze not only quantitative statistical data but producer and consumer sentiments and market behavior as a supplementary piece of information for quick monitoring of the situation and short-term forecasting. More often these behavioral sentiments are accounted for in various indicators (barometers) that are widely used to produce up-to-date (flexible) estimates of economic performance at global and country level, which rises in importance given the force-majeure circumstances born by the pandemic of SARS-COV-19.

Research methods. Currently the State Statistics Service of Ukraine computes and publishes several indicators that use information from Business Tendency Survey (BTS) of enterprises and Consumer Sentiment Survey (CSS) (more details about these surveys see e. g. [6; 7]). They are Economic Sentiment Indicator (ESI), Business Climate Indicator (BCI) and Confidence Indicators (COFs), by economic activity (more details about these indicators see e. g. [6; 8; 9]). Also, this information can be used to compute coincident indicators and leading indicators. While the former provide for quick estimates of the current economic situation well before the official quantitative information about macro-indicators is released, the latter give projections of change expected in the several forthcoming quarters. The methodologies for computation of these two types of indicators are well elaborated and used by international organizations like OECD and European Commission, and by some research institutes (KOF in Switzerland, IFO in Germany, FGV in Brazil, CBI in the U.K., INSEE and OFCE in France). The method for computation of coincident and leading indicators for the Ukrainian economy was proposed by us in [10].

As an example of the computation, it is worth to consider the coincident and leading indicators estimated as part of the collaborative project of the Swiss Economic Institute (KOF of the ETH Zurich) and the Brazilian Getulio Vargas Foundation (FGV, Rio de Janeiro). These indicators signified as the Global Economic Barometers constitute a system

of indicators for timely analyses of global economic events. They are Coincident Barometer and Leading Barometer, sending, as mentioned before, quick cyclic signals. The Global Economic Barometers are estimated on the basis of BTS and CSS in more than 50 countries. The Coincident Barometer covers 1000 various time series, whereas the Leading Barometer – more than 600. The cross-correlation analysis, i. e. a comparison of selected time series with benchmark ones, is used to determine the time series to be included to the barometers. The time series of annual growth rate of the global GDP, aggregated from national GDPs by Purchasing Power Parity, is commonly used as the benchmark. Selected time series are included in the barometers only when they demonstrate a sufficiently high correlation and good synchronization or lead compared with the benchmark series. Both barometers are estimated monthly and published on the tenth day of each calendar month. The algorithm of the two barometers is launched anew each time, to ensure the system's flexibility. When a new estimate of the barometer is published, the previous ones can be revised. This, however, does not entail an essential change in the economic signal [11; 12].

Results and discussion. As follows from the press release published on March 10, 2020 by the two above mentioned organizations, the Global Economic Barometers show the extent of the pandemic impact on the development of the global economy. Both barometers demonstrated a sharp decline to the lowest levels of 2009. According to the authors, the significant spread of the pandemic beyond the boundaries of the Asian region has not been accounted for in the most part of the used variables. But the barometers show that the pandemic has already caused a shock for the global economy [13].

The objective of the article is to investigate using certain economic barometers to analyze the impact of the unfolding new pandemic SARS-COV-19 on the global and Ukrainian economies.

So, according to the information in the press release, the Coincident Barometer fell in February by 14.4 points and made 78.0 points, which is far lower than the average medium-term figure, i. e. 100 points (Figure 1, constructed by the author using data from [12]). The authors attribute this decline to the contribution of the variables related with the region "Asia, Pacific Ocean and Africa". The contribution of the variables related to the regions "Europe" and "Western Hemisphere" (North and Latin America, and the Caribbean Basin) is less negative than in the previous month. It should be noted that in time of the analysis most part of the input variables was not under pressure of the pandemic spread beyond the Asian region. Already, however, the barometer's decline gives evidence of the great losses suffered by

the global economy. As emphasized by the authors, the negative impact on the barometer's change caused by the continuous decline in manufacturing, retail

and wholesale trade, essentially increased in March, with quite insignificant impact of construction and services.

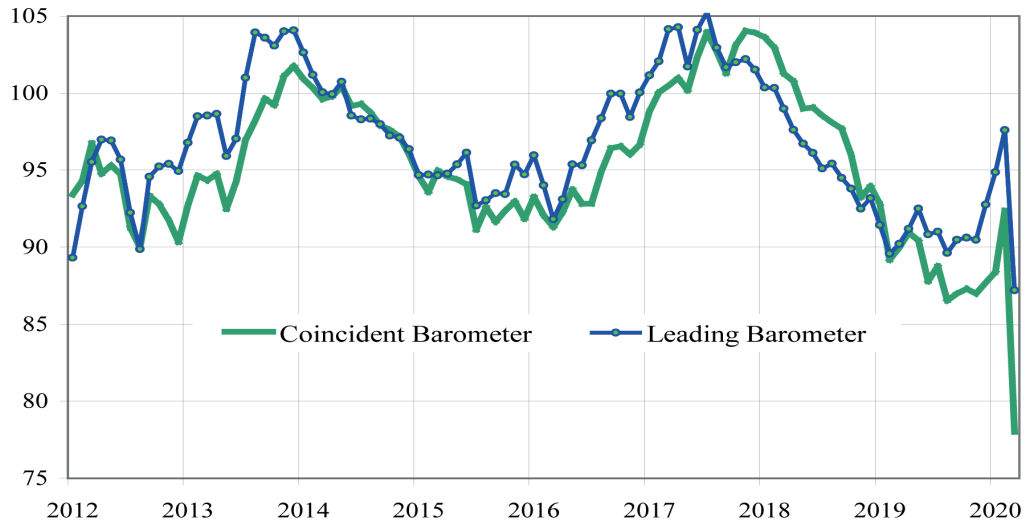


Figure 1. The Global Economic Barometers

The Leading Barometer of the global economic development fell by 10.4 points to make 87.2 index points. The economic outlook worsened considerably after the expectation of the continuing upward tendency recorded in the earliest two months of this year. The authors believe that, like with Coincident Barometer, this may be caused by the contribution from the variables of the geographic group “Asia, Pacific Ocean and Africa”. The contribution of the regions “Europe” and “Western Hemisphere” in the monthly change of the Leading Barometer is insignificantly positive. As shown in Figure 1, the Leading Barometer declined to a far lesser extent than the Coincident Barometer. As in the Coincident Barometer, the variables of the manufacturing sector had the largest impact on the decline of the Leading Barometer. And the negative contribution from the variables of retail and wholesale trade as of 10 March is higher than in February. The impact of construction and services is, by large, unchanged.

Considering the information on the barometer change provided by foreign researchers, it can be concluded that the Coincident Barometer shows a worsened situation in the manufacturing, whereas the Leading Barometers indicates that the economy's decline will be attributed to the plummeted demand (which is evidenced by a more significant negative impact of retail and wholesale trade) caused by the rapidly unfolding pandemic on the European and American continents and quarantine measures imposed in a large number of countries. It means that a production decline in the manufacturing and other sectors will make salaries fall and result in the reduced final demand. The spreading of coronavirus in Europe may cause an immediate negative impact on the private

consumption in our region as well. So, a recession can be expected in services (tourism, entertainments etc.) and retail trade. A fall in prices and demand for the export-oriented Ukrainian products (steel, crops, sunflower oil, flour etc.) on global markets will only worsen the economic situation in the country. On all accounts, the issue of investment is left open.

Besides that, as emphasized in [8], global economists had expected the unfolding financial and economic crisis well before the pandemic. So, the pandemic will likely to deepen the global crisis, with obvious implications for the performance of the open Ukrainian economy. Moreover, considering an array of internal factors of the warfare in the country's East, the slowing of growth rates of the domestic GDP (from 4.1% to 1.5%) had already been recorded at the end of 2019. As can be seen from graphs in Figure 2 (constructed by the author using data from [14]), the integral indicator built on BTS of industrial enterprises, or Business Confidence Indicator, COF_{ind} , gave a pessimistic projections for I quarter of the current year with a negative estimate: -6.4 indicator point. Although, as can be seen from Figure 2, throughout the period of the study COF_{ind} had never rose even to the zero point. The Business Confidence Indicator for retail trade (COF_{rt}) also demonstrated a heavy decline, but remained relatively optimistic (with the estimate of 3.7).

Unfortunately, respectable global institutions do not compute indicators based on BTS for the Ukrainian economy, and do not include Ukrainian estimates in any of the regional indicators. Therefore, only the indicators published by the State Statistics Service of Ukraine and having short time series can be currently used.

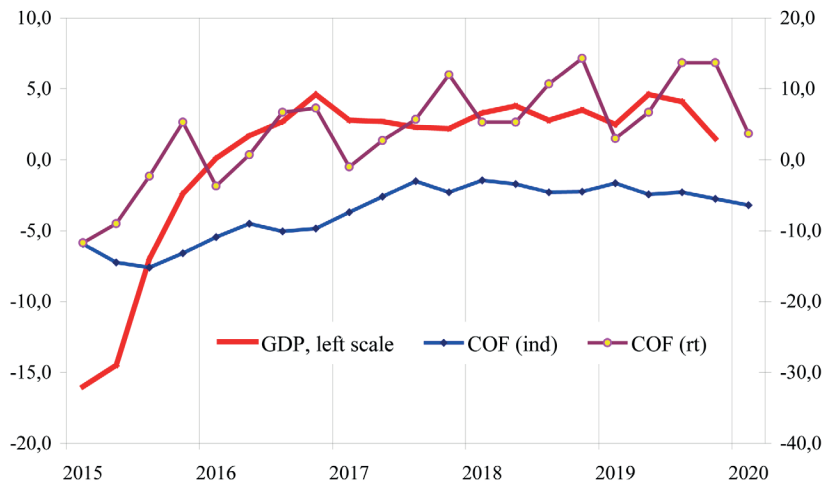


Figure 2. The Business Confidence Indicators for manufacturing and services, and change in the real GDP

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Change in the economic performance can be analyzed using the overall integrated indicator, the Economic Sentiment Indicator (ESI), computed on the basis of the indicators from the Ukrainian BTS of enterprises by economic activity and the Consumer Sentiment Indicator. ESI has been published quarterly by the State Statistics Service of Ukraine since 2017 and on. As can be seen in Figure 3 (constructed by

the author using data from [14]), this indicator demonstrates the slowing growth rates of GDP in I quarter of the current year: its estimate fell from 113.4 to 103.0 index points. But actually it is unknown what this indicator would have demonstrated had it been computed monthly, because it was in March that the pandemic took over our country! It should be noted, however, that the quarterly changes in ESI lead the changes in GDP, i. e. they give lead signals in some periods. Thus, ESI decline in II quarter 2018 led the slowing of GDP growth rate in III quarter, and its decline in IV quarter led this slowing at the beginning of 2019. Unfortunately, the slowed growth rates of GDP in IV quarter 2019 failed to be predicted by ESI change.

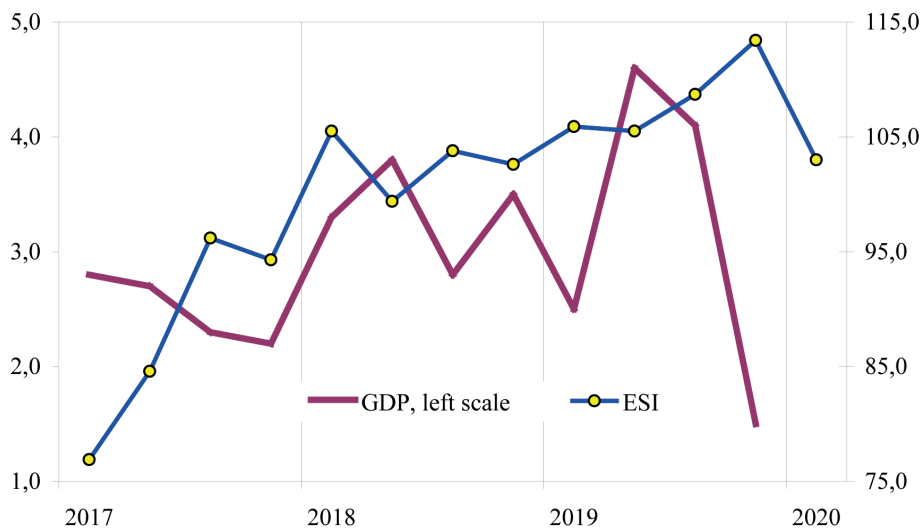


Figure 3. The Economic Sentiments Indicator and change in GDP

It is obvious that statistical data on change in GDP and many macro-indicators in I quarter 2020 are not available now, and a monthly change is not

estimated (although projected estimates for January and February, provided by other executive power bodies, do exist). Therefore, for the quick assessment

of the current economic performance of Ukraine, we can rely only on projected estimates of the abovementioned indicators.

The pandemic's impact on the Ukrainian economy in March this year would have been effectively estimated if information about monthly change in the indicators (by main activity) provided by BTS performed by the official statistics quarterly could have been used. Unfortunately, monthly data of BTS in the industry started to be produced only this year, but they are released with a considerable delay, with the information provided on the sixth day of the next month. This does not comply with the European harmonized methodology, which requires that the information for the current month has to be published in the third decade of this month. It means that only the change occurring in February against January can be estimated now. For the industry this change shows the continuing aggravation of the performance, occurring well before the coming of coronavirus to Ukraine. The balance of change in the overall industrial output fell from -8% to -21% , in mining and quarrying it fell from -42% до -46% , in manufacturing it fell from -12% до -25% . Change in the estimates of the current orders (demand) in the industry, determining the sufficiency or insufficiency of orders, worsened in February even more: from -37% to -38% . Although producers expected a better situation in February: the expected change in foreign orders (export demand) in the industry in the following three months improved in February compared with January, with the overall industry balance growing from 2% до 6% and the balance for manufacturing increasing from 4% to 7% . It implies that the respondents did not expect negative influences of various origins (global events, pandemics, start of a financial crisis etc.). If we have got by now their estimates reported by them in March, they, we believe, could have changed the picture considerably, being useful indeed for a quick analysis.

Conclusions and recommendations. The pandemic of coronavirus has a significant impact on the global economy performance, as it added its negative effects to the expected overall recession provoked by the panic on financial markets, the plummeting oil price and an array of political factors. Many respectable international organizations and research institutions have published their outlooks of the further development of the global economy and

selected domestic economies. A part of these forecasts is built on integral indicators computed on the basis of indicators from BTS of enterprises and CSS. Exactly these indicators are capable to quickly estimate sudden or force-majeure changes, they are issued well ahead of the official quantitative statistics, and, what is extremely valuable, they are built on monthly data. This was clearly demonstrated by the collaboration of specialists from the two above mentioned institutions: KOF Swiss Economic Institute of the ETH, Zurich and the Brazilian Getulio Vargas Foundation. Their Coincident Indicators and Leading Indicators published on March 10 of the current year explicitly showed change in the economy of regions (see analyses by region in [12; 13]) and the world, caused by the pandemic of SARS-COV-19.

Unfortunately, estimates of the Ukrainian integral indicators are published only with the quarterly periodicity. The information from BTS of industrial enterprises, started to be published by the official statistics monthly, is released only in the next month, i. e. with a time lag. But it has also shown a strong decline in the industry over the two months of the current year.

This study should be subsequently followed by the one investigating the possibility of computing the existing integral indicators, in order to produce quick estimates for the respective macro-economic indicators on the basis of monthly information. To this end, the latter has to be collected and submitted quicker than before, as otherwise it makes a little sense as information for projection purposes or for a up-to-date (flexible) assessment of the current economic performance. Besides that, as we repeatedly stressed, according to the European harmonized methodology, BTS of enterprises and CSS need to be performed monthly for all the economic activities outlined in this methodology (and not only for the industry), and unless the requirement is met, this information will not be actually quick or more applicable for the analysis.

Also, we believe that the scientific search for new integral indicators built on the data from the above surveys should be continued, to find the indicators most appropriate for analyses and projections of the economic performance at national and sectoral level, which calls for a sufficient number of high quality data. This objective can be effectively achieved using the practices of the abovementioned organizations and other researchers with the worldwide recognition.

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Використання економічних барометрів для аналізу впливу на національні економіки пандемії COVID-19

Відомі аналітичні компанії та окремі економісти вже протягом значного часу попереджають, з огляду на ряд причин, про наближення економічного спаду (рецесії) світової економіки. Проте неочікуваний потужний вплив, який почала здійснювати на неї пандемія, схоже, може перевершити найгірші прогнози. Для того, щоб усвідомити та попередити майбутні негативні наслідки пандемії в усіх сферах людської діяльності, аналітики намагаються спрогнозувати розвиток світової економіки, окремих регіонів і країн.

Наразі існує різноманіття індикаторів якісного характеру, що ґрунтуються на інформації обстежень ділової активності та настроїв споживачів. Поважні міжнародні та національні інституції використовують ці індикатори для оперативного оцінювання поточної економічної ситуації та прогнозування її змін на найближчі декілька кварталів. Ці індикатори вважаються дуже чутливими до будь-яких подій, що відбуваються в економічному та соціальному житті, оскільки вони першими подають сигнали про майбутні зміни в економіці.

У статті розглядається динаміка змін Глобальних економічних барометрів, що розраховуються й аналізуються відомими аналітичними інституціями, та відображення цими барометрами впливу на світову економіку нової пандемії. Барометри надають оперативну інформацію щодо змін в економіці у поточному місяці, значно випереджуючи офіційну кількісну інформацію.

Автором запропоновано використовувати для оцінювання впливу пандемії на розвиток української економіки індикатор економічних настроїв та індикатори ділової впевненості промисловості та роздрібної торгівлі (для дослідження пропозиції та попиту), що розраховуються державною статистикою на основі інформації обстежень якісного характеру. Ці індикатори гармонізовані з аналогічними європейськими індикаторами, але мають наразі щоквартальну періодичність. Зроблено висновок про нагальну необхідність переведення цих та інших барометрів, створених за європейською методологією, на щомісячну періодичність для оперативного відображення впливу пандемії на розвиток української економіки. Також запропоновано здійснити пошук нових барометрів, які точніше відбивають зміни української економіки.

Ключові слова: економічні барометри, індикатор економічних настроїв, індикатори ділової впевненості за видами економічної діяльності, обстеження ділової активності підприємств, індикатори збігу та випередження, валовий внутрішній продукт, пандемія SARS-COV-19.

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