

DETERMINANTS OF INVESTMENT SPHERE DEVELOPMENT IN THE CONTEXT OF THE MODERN ECONOMIC PARADIGM

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Abstract. *The aim of the article* is to illuminate the modern paradigm of the globalization economic environment, which shows the gradual end of the decade of “crisis-free” growth of the world economy and, accordingly, the nearing to the next global economic crisis; to cover the importance of attracting investment and implementing a specific national industrial policy as one of the key factors of development; to outline the problems of prevention, forecasting and analysis of risks arising in the investment sphere in the context of providing conditions for sustainable development of the Ukrainian economy. *The subject of the study* is: the monitoring of investment sector indicators that determine the potential of economic development and provide an analytical assessment of the risks posed in the investment sphere in the context of ensuring the conditions of sustainable development of the Ukrainian economy. *Methodology.* The article uses the complex approach with the application of methods of simulation and econometric modeling for analytical estimation of gross fixed capital formation as a key investment indicator in the current economic conditions of Ukraine. *Results.* The conducted study clearly demonstrates not only the presence but also the obvious deepening of the imbalance between the current state of attracting foreign investments and actual needs in technological and physical renewal of the production sphere. The consequence is a real threat of loss of potential for economic development. Some measures have been identified to improve the investment climate, and the key ones are the provision of state support for reforming the Ukrainian economy in terms of improving the investment climate and stimulating the innovative potential of entrepreneurial activity. *The practical implications* of this study are to identify the lack of innovation strategy, which deepens Ukraine’s technological backwardness compared to developed countries in general, and the EU countries, in particular, and keeps the inefficient and destructive natural-production base of Ukrainian economy. *Value/originality.* This research was carried out within the framework of the implementation of a scientific paper of the Department of Theoretical and Applied Economics of National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute (No. 0112U007817) on the topic: “Globalization of industrial capacity formation trends in the terms of post-industrial transformation”.

Key words: technological process, gross fixed capital accumulation, capital investments, investment potential, modernization of the economy.

JEL Classification: E22, O47

1. Introduction

The global economy has been in a steady upward trend since 2009 preparing to set a record in post-war history in 2019. Therefore, the main global risk lies in the macroeconomic field – the end of the current business cycle and the onset of recession, or global economic crisis. The above is evidenced by the negative signs in key economies which always precede deeper recessionary processes.

Thus, the International Monetary Fund recently lowered its forecast for global economic growth to 3.2%

in 2019 and 3.5% in 2020, the lowest since 2009 (World Economic Outlook, 2019).

World debt is growing at a record pace, and the problem is compounded by the fact that central banks are gradually stopping to fill the economy with cheap money. Under these conditions, commodity prices, which are a key export commodity in developing countries, remain at a low level, causing a global recession. It is the debt problems of countries that can become a “black swan” for the world economy.

In addition to the significant pressure of global debt, trade wars have a negative impact on the global economy.

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One of the negative effects of the China-US trade war has been the rapid decline in oil prices to record lows over the past 4 years. Although the United States is trying to remedy the situation with existing oil reserves, tough rhetoric in the context of the trade war and the corresponding sentiment of experts on the expected level of demand continue to affect the price negatively. Due to the trade war between the US and China, the EU's most powerful economy is losing a lot, since these two markets are major export destinations. The implications include the lack of global trade growth and a "significant" decline in investment in manufacturing.

However, given that Central and Eastern Europe has already passed the peak of its most dynamic growth and investors are interested in new markets, Ukraine today has a strong competitive advantage in attracting investment. At present, Ukrainian economic growth is mainly driven by consumption. However, solely consumption will not be able to provide a sustainable growth model for a long time, especially in a slowing global economy. Qualitative and structural shifts can ensure foreign direct investment, especially in manufacturing.

The current economic life of Ukraine is characterized by a rather clear manifestation of the phenomenon of hysteresis, that is, the loss of part of the production potential as a result of a sufficiently stable and long-term decline in the production component of the Ukrainian economy.

At the same time, the provision of sustainable economic development can only be based on the ecologically balanced structural and technological restructuring of the production base of the Ukrainian economy where the natural-exploiting production will enter the natural-food vertical.

These structural changes require huge investments aimed at creating a modern post-industrial model of the economy. And the very monitoring and evaluation of investment development trends are extremely important for the Ukrainian economy.

The paper presents the results of the analytical assessment of emerging risks in the investment sphere in the context of ensuring the conditions for sustainable development of the Ukrainian economy.

2. The main determinants of the economic development potential

Over recent years, the problem of analyzing the factors and components of ensuring economic growth in Ukraine is very acute in order to level the main macroeconomic imbalances that arose as a result of the political and socioeconomic crisis and to stabilize further economic development (Skrypnychenko, 2015).

One of the important components of this problem is monitoring of indicators of the investment sphere, which determine the potential of economic development.

This is especially important today when the pace of technological progress has significantly accelerated, and the world economy is on the verge of a new technological way.

Types of activity that over the past few decades formed the fifth technological process and were the main drivers of economic growth – the production of computers and consumer electronics, mobile communication and data transmission, programming – virtually exhausted the opportunities to perform this function in the future, as in these industries the mechanism of steady reduction of the cost of production, which is manufactured even with a constant increase in its quality and technical capabilities, has already been started.

The new approach is an epoch of nanoscience and cell technology that reduces energy intensity and material production, opens up new possibilities for controlling the properties of materials and organisms.

In the modern world, revolutionary changes take place more than ever before. According to experts, there is the so-called "Big Seven" technologies that will have the most significant impact on the development of the economy in the near future (Anton, Silberglitt, Schneider, 2005; Mapping the Global Future, 2004; Silberglitt, Antón, Howell, Wong & Gassman, Jackson, Landree, Pflieger, Newton & Wu, 2006).

Nowadays, the main trend in the development of the aggregate supply is the formation of a modern post-industrial model of the economy at the expense of a fundamental redistribution between primary (agrarian), secondary (industrial) and tertiary (services) sectors of the economy, as well as due to changes in the structure of each of these sectors.

Thus, the main trend in the development of industrial production is the rapid growth of high-tech industries. Developed countries provide 85-90% of GDP growth at the expense of these products (Zhemba, 2013).

In general, the share of high-tech production in the world average is about 18%. In Japan, it exceeds 19%, in the United States – 24%, while in China – 28%.

Economic development leaders consider technology and innovation to be the key to further development. Thus, more than 70% of industrial enterprises in Germany, about 60% of Belgian enterprises, implement technological innovations. Overall in the EU countries, more than 50% of enterprises are innovative (Skrypnychenko, 2018).

These changes require huge investments in structural and technological restructuring of the economy.

For Ukraine, where the depreciation of fixed assets has become disastrous, this problem has become particularly acute. So, if in the USA and Western European countries the depreciation of fixed assets does not exceed 20%, in 2016 in Ukraine the general degree of depreciation of fixed assets amounted to 58%. At the same time, the main means of rail transport were worn by almost 99%, on land transport and transport

infrastructure – more than 97%, maintenance of houses and territories – by 80%, in the processing industry – by 77% in general, and in certain types of industrial activity, depreciation was about 90%. And this refers only to physical deterioration without taking into account the degree of moral depreciation. A survey conducted by the State Statistics Committee of the enterprises of the processing industry has shown that only about 19% of them use technologies whose age does not exceed 5 years. At the same time, more than 14% use technology from the age of 20 to 30 years, and another nearly 23% – from 11 to 20 years.

The above indicates Ukraine's loss of a significant part of its production potential due to the fact that the decline in production proved to be sufficiently stable and long-term, which in turn did not allow for the accumulation of sufficient investment potential.

Ensuring sustainable economic development aimed at preserving and increasing the aggregated industrial potential of Ukraine, meeting not only the needs of the existing generation but also the ability of future generations to meet their needs, requires an ecologically balanced structural and technological restructuring of the production base of the Ukrainian economy, in which the natural-exploiting production will receive natural-grocery vertical.

These structural changes require huge investments aimed at creating a modern post-industrial model of the economy through a fundamental redistribution between the primary (agrarian), secondary (industrial) and tertiary (services) sectors of the economy, as well as changes in the structure of each of these sectors (Kuznietsova, 2019). And the very monitoring and assessment of the tendencies in the development of the investment sphere are so important for the Ukrainian economy.

3. The investment potential of Ukraine

During the entire period of independence, the investment sphere of Ukraine had no stable development dynamics. The sharp contraction of investment in the crisis of the 1990s stopped only in 1998; however, the positive dynamics showed significant volatility ranging from an increase of 1.9% in 2005 to 31.3% in 2003. Since 2008, the economy has again undergone investment a three-year recession, in 2011-2012, a slight increase and a sharp fall in 2013-2015, which has been overcome since 2016, and so far the investment sector has shown positive dynamics.

However, the very dynamics of attracting investments into the economy do not allow assessing the investment potential of Ukraine adequately.

One of the most important indicators for the development of the investment sector is the gross fixed capital formation (GFCF) in the structure of GDP.

It should be noted that monitoring of the GFCF in Ukraine is carried out by the State Statistics Service since 2002.

During 2002-2009, in Ukraine, there was a steady trend towards the growth of this indicator, and in 2006-2008 its values were 24.4%, 27.1% and 25.9% respectively, which even exceeded the level of this indicator in such countries. The EU is like Poland, Hungary, and Estonia in 2008 is shown in Figure 1.

In the countries of the former socialist camp, such as the Czech Republic, Slovakia, Romania, the indicator of GFCF in % of GDP significantly exceeded as well as in Ukraine, reaching 30-35%, which provided an effective technological upgrade of the economies of these countries (Macroeconomic Imbalance Procedure Scoreboard, 2018).

In 2009, the proportion of GFCF in GDP declined sharply, from 25.9% to 18.3%, and in 2015 fell to 13.5%. In 2016-2018, there was a certain increase in the indicator – according to 2018, it was 17.1%. Over the entire period, only the crisis in Greece showed a lower level of indicator among all EU countries, and the EU average was 20.5%.

Analyzing the dynamics of this indicator, it should be noted that throughout the period of independence, the Ukrainian economy has developed volatily. None of the macroeconomic indicators showed sustained dynamic trends. That is why the difference in the rates of their changes is strongly influenced by the level of the indicators. The above is clearly in evidence if we compare the dynamics of the indicator of gross fixed capital formation (GFCF) as % of GDP and GFCF dynamics of changes in the volume of GDP (is shown in Figure 2).

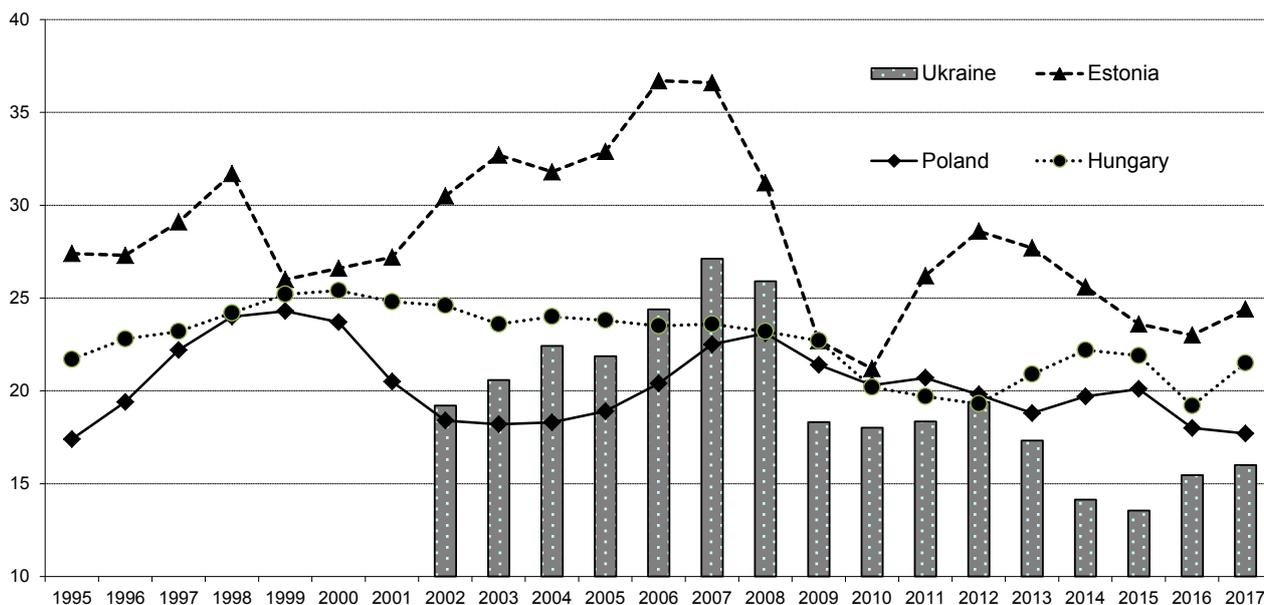
It can be observed that the rather rapid growth of the GFCF indicator in % of GDP in 2006-2008 was due to the increase in gross accumulation: their growth rates significantly exceeded GDP growth rates. Instead, a significant decline in the indicator in 2014-2015 occurred in the falling dynamics of both components, but the GFCF decreased by a higher pace.

Since 2016 the proportion of GFCF in GDP gradually increases against the backdrop of the high growth rate of gross fixed capital formation, but its level remains lower than that required for the formation of investment potential upgrade Ukraine's economy.

Over the last seven years, the structure of GFCF has changed. During the biggest drop in GDP – 2014-2015 biennium – the proportion of residential buildings in the gross capital formation increased dramatically, while the share of other buildings fell sharply (it is shown in Table 1).

The reduction in the proportion caused cut-backs of the construction of engineering structures that is industrial infrastructure. The share of GFCF in machinery and equipment is not going growth.

In the 2016-2018 biennium, the share of machinery and equipment in gross fixed capital formation rose sharply – up 44.7% and 45%. However, in the years 2013-2015, GFCF volumes in this position were so reduced that even higher rates of accumulation did not



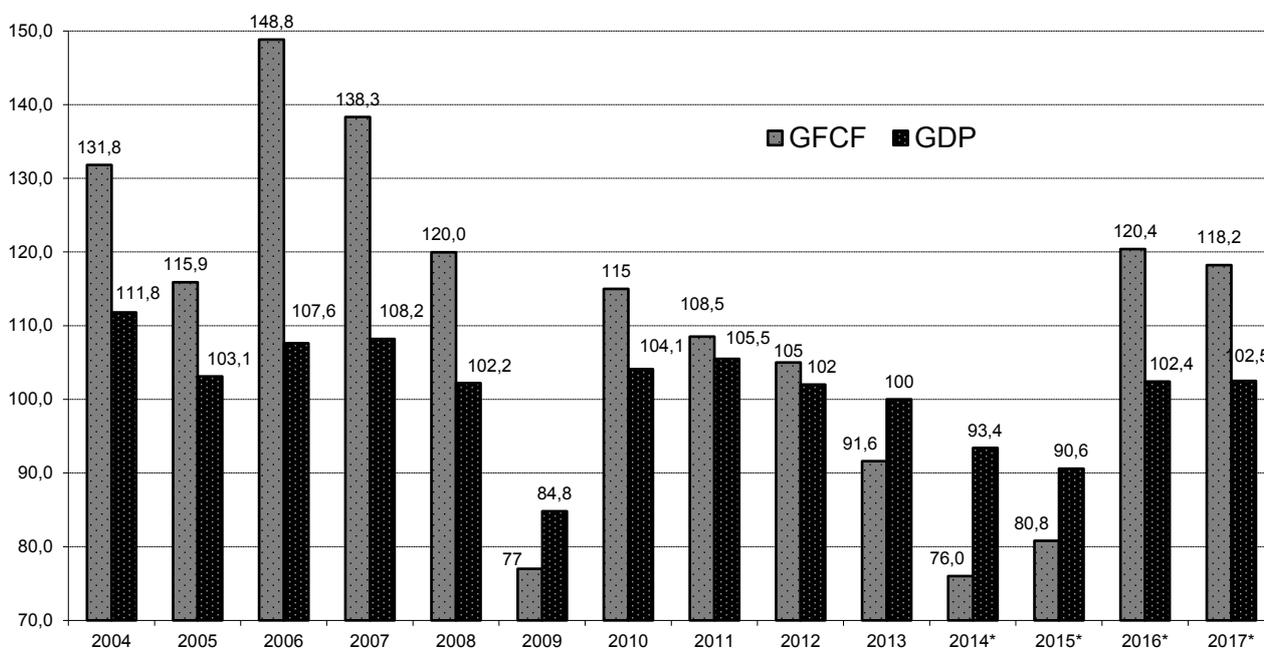
Data for Ukraine for 2010-2017, excluding the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and parts of the area of the anti-terrorist operation

Figure 1. Gross fixed capital formation in Ukraine and individual EU countries, % of GDP

Source: Calculated according to the State Statistics Service of Ukraine (URL: <http://www.ukrstat.gov.ua/>) and Eurostat (URL: <https://ec.europa.eu/eurostat/web/macroeconomic-imbalance-procedure/data/scoreboard>)

compensate for the losses of the previous period, and the volume of accumulation in 2010 prices in terms of “machinery and equipment” remained in 2018 7.5 % less than in 2012 and almost 2 billion UAH lower than the level of 2013.

That is, even in those periods when the Ukrainian economy demonstrated rather high gross capital accumulation in % of GDP, it is impossible to create stable positive tendencies in the formation of investment potential and mitigate the existing imbalances.



Excluding the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and parts of the anti-terrorist operation zone

Figure 2. Change of GDP and GFCF in % to the previous year

Source: Calculated according to the State Statistics Service of Ukraine (URL: <http://www.ukrstat.gov.ua/>)

Table 1

Structure of gross fixed capital formation by type of non-financial assets *

%%

	2012	2013	2014	2015	2016	2017	2018
Gross fixed capital formation	100						
Residential buildings	12,4	15,8	19,3	20,5	16,6	15,8	14,2
Other buildings and structures	44	41,4	38,8	34,9	33,4	32,3	34
Machinery and equipment	38,7	38,1	37,2	38,3	44,7	47	44,6
Armament systems	0,3	0,3	0,3	1,7	1,5	1,4	3
Cultivated biological resources	0,6	0,9	0,4	0,9	0,7	0,5	0,6
Costs associated with the transfer of ownership of assets rough	4	3,5	4	0	0	0	0
Intellectual Property Products	2,6	2	2,5	3,7	3,1	3	3,6
research and development	0	0	0	1,7	1,2	1,1	1,5
exploration and evaluation of mineral resources	1,3	1,4	1,5	0,1	0,1	0,1	0,1
computer software and databases	0,1	0,1	0	1,8	1,7	1,7	1,9
entertainment programs and originals of literary and artistic works	0	0	0	0,1	0,1	0,1	0,1

* Excluding the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and parts of the anti-terrorist operation zone

Source: according to the State Statistics Service of Ukraine (URL: <http://www.ukrstat.gov.ua>)

This is evidenced by the dynamics of innovation activity in Ukraine. Even during the period of intensification of investment activity, the upgrading of production capacity was practically unavailable. The proportion of enterprises introducing innovations almost remained at one level – about 10%, and since 2010 their share has started to increase gradually, and in 2016 it was 16.6%. However, in 2017, the indicator decreased, while the share of implemented innovative products, the introduction of innovative types of products, and new technologies dropped sharply (it is shown in Table 2).

The strategy of socio-economic development adopted in Ukraine has repeatedly declared the transition to an innovative path of evolution. However, further declarations case never progressed. This is evidenced by numerous international innovation ratings where Ukraine occupies one of the last places.

In particular, since the beginning of the previous decade, the EU conducted regular surveys of innovation and scientific and technological development of the economy based on comprehensive indicators for (countries, regions, public sector) (European Public Sector Innovation Scoreboard 2013, 2014; Regional Innovation Scoreboard 2016, 2017). The most well-known tool for such comparisons is the EU Innovation

Scoreboard (ITE), which includes data on EU countries, candidate countries for accession to the EU and some other countries. The main result of the ITE is the Consolidated Innovation Index (CII). This aggregate indicator of innovation and scientific and technological development summarizes a wide range of indicators, which in 2016 were grouped in eight, and in 2017 – ten thematic subgroups, i.e. “Innovation dimensions”. In 2016, Ukraine was officially involved in the European survey of the economy “EU Innovation Scoreboard”. However, even in 2014-2015, Ukrainian experts carried out an assessment of Ukraine according to the ITE methodology (Heits, 2015).

With the development of innovation, the countries included in the “Innovation scoreboard of the EU” were divided into four groups:

- Innovative leader;
- An active innovator;
- Moderate innovator;
- The emerging innovator.

According to the 2017 data and the consolidated index of innovations, Ukraine entered the last group and occupied the last place with the index of 0.149. Pre-emptive country – Romania – a low figure of 0.173. The leaders ranked 6 in Switzerland (0.794), Sweden (0.717), and Denmark (0.691). On average, in the EU,

Table 2

Implementation of innovations at industrial enterprises

Indicator	2012	2013	2014	2015	2016	2017
The proportion of enterprises that implemented innovations, %	13,6	13,6	12,1	15,2	16,6	14,3
The proportion of realized innovative products in volume of industrial, %	3,3	3,3	2,5	1,4	***	0,7
Introduced innovative types of products, names	3403	3138	3661	3136	4139	2387
including new types of equipment	942	809	1314	966	1305	751
Introduced new processes, processes	2188	1576	1743	1217	3489	1831
including low-waste, resource-saving	554	502	447	458	748	611

Source: Gosstat of Ukraine data. URL: <http://www.ukrstat.gov.ua>

the CII was 0.503 (European Innovation Scoreboard 2017, 2017).

The ratings on individual indicators included in the CII allow us to assess in more detail those areas that hinder the innovative development of Ukraine. In particular, Ukraine is ranked “Innovatively favorable environment”, “Research systems” and “Communications”. By other indicators, Ukraine ranks 3-4 from the end with an indicator lower than the leaders 7-10 times.

Under unacceptably large resource input of the Ukrainian economy, only about a quarter of new technological processes are resource-saving.

Drop in the innovation activity is primarily due to a reduction in spending in this area caused by deterioration in the financial condition of enterprises. The total cost of innovation declined by 20% in 2014, at the same time, the enterprises' funds, which are the main source of innovations, decreased by 6.3%; moreover, budget funds decreased by 86%, while foreign investors' funds went up by 89%. In 2015, the company's expenses for innovation increased almost twice by face value, while budget funds decreased by 84% and foreign investors – by 58%. In 2016, the financing of innovation activity increased, however, in 2017, the costs were again significantly reduced.

4. Conclusions

Consequently, the study on the development of the investment sector in Ukraine has shown not only an imbalance between the need for technological and physical upgrading of the manufacturing sector and the actual attraction of investments aimed at modernizing production but also the deepening of this imbalance.

A high-level threat is the lack of a strategy for the development of innovation, which deepens the technological lag of Ukraine from developed countries in general, and EU countries, in particular, and preserves the inefficient and destructive natural-industrial production base of the Ukrainian economy.

At present, there is a loss of the potential of economic development. The state economic policy should aim at a radical improvement of the investment climate and

stimulation of innovation capacity of entrepreneurial activity.

Indeed, an indispensable condition for improving the investment climate is the cessation of hostilities, the protection of property rights and the reduction of corruption in their structures.

However, experience of successful countries is important as well as the state policy of stimulating innovative economic renewal (Mykhailyshyn, 2016).

Among its activities the most common are:

- preferential taxation of R&D expenditures related to the principal activity, preferential taxation of private investment in R&D;
- preferential mode of depreciation on the equipment introduced;
- reimbursement of part of the cost of innovation in accordance with state subsidies programs for small innovative firms;
- the provision of preferential subsidies to enterprises adopting new technologies, in particular for the purpose of energy conservation etc.

The provision of state support (tax and credit privileges, budget financing, information support, etc.) should focus on a number of projects that respond to current technological developments and have a systematic impact on economic and social reform, including:

- energy saving;
- alternative energy sources;
- technical and technological modernization of infrastructure;
- modernization of the agricultural sector in line with European requirements;
- the introduction of digital technology;
- housing reform;
- restructuring of the system of technical regulation under the European technical regulations.

In addition, special attention should be paid to the problems of harmonization of innovation and other types of policies, including industrial, social, etc., since in the case of “autonomous” implementation of a policy, the integrity of the system of public administration of socio-economic processes is broken, which causes a decrease in its overall effectiveness.

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