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## **INDUSTRIAL POLICY IN CHANGING WORLD ECONOMY. IMPLICATIONS FOR UKRAINE**

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The globalization boom and the openness of the economy, which were observed before the 2008 crisis, caused extremely high rates of economic growth in the world economy. Emerging market economies demonstrated at this time an incredible acceleration of economic activity, while at the same time, developed countries demonstrated very moderate rates of economic growth. The aggressive expansion of Chinese exporters to Western markets, especially in the USA, caused a significant wave of protectionism after the 2008 crisis, and, especially, tough measures after the administration of President D. Trump came to power. The global economic processes were dealt a serious blow by the COVID-19 epidemic, which caused significant macroeconomic imbalances, in particular, a significant budget deficit, which in turn led to an unprecedentedly high level of inflation in the developed countries of the world. All these circumstances, as well as the need to be competitive with high-tech exports from China and other Southeast Asian countries, led to the revival of industrial policy, the protection of national production in the old developed world.

Now the consideration of industrial policy is much broader than in a traditional school: increasing customs tariffs, providing subsidies [2]. Industrial policy is the foundation of stable economic growth, especially in the successful countries of Central and Eastern Europe since the implementation of radical reforms. According to our study, 15 countries of Central and Eastern Europe, including Ukraine, from 1991 to 2021 (465 observations) showed that the dominant factor is the rate of growth of added value in industry, as well as the growth of investments and exports of goods and services (See table 1).

Table 1

## Factors of Economic Growth in CEE, 1991–2021

Macroeconomic indicators	Coefficients of correlation of economic growth with macroeconomic indicators		
	1991–2021	1991–2008	2009–2021
Industrial value-added annual growth, (%)	0.85*	0.84*	0.84*
Gross fixed capital formation annual growth, (%)	0.57*	0.50*	0.74*
Export of goods and services annual growth, %	0.58*	0.53*	0.70*

\*correlation coefficient significant at 1% level.

Therefore, we will examine in more detail the indicators of industrial development in the countries of the world collected by United Nations Industrial Development Organization (UNIDO).

UNIDO developed annual Competitive Industrial Performance (CIP) Index, which benchmarks the ability of countries to produce and export manufactured goods competitively. CIP Index is calculated as the weighted geometric average of the six sub-indexes Manufacturing Value Added per Capita Index (MVApc), Manufacturing Export per Capita Index (MXpc), Share of World Manufacturing Value Added Index (ImWMVA), Share in World Manufacturing Export Index (ImWMT), Industrialization Intensity Index (INDint), and Index Industrial Export Quality Index (MXQual) with the two latter being the arithmetic mean of Share of Manufacturing Value Added in GDP Index (MVAsh) and Share of Medium and High-Tech Activities in Total Manufacturing Value Added Index (MHVAsh), and Share of Manufacturing Exports in Total Exports Index (MXsh) and Share of Medium and High-Tech Activities in Total Manufacturing Export Index (MHVAsh), respectively [1].

The formula for the calculation of industrialization intensity is:

$$IND_{int} = \frac{MVA_{sh} + MHVA_{sh}}{2}, \quad (1)$$

where MVAsh – share of manufacturing value-added in GDP and MHVAsh –share of medium and high-tech activities in total manufacturing value added. Another formula for estimation of industrial export quality is following:

$$MX_{qual} = \frac{MX_{sh} + MHX_{sh}}{2}, \quad (2)$$

where MXsh – share of manufacturing export in total export and MHSsh – share of medium and high-tech activities in total manufacturing export.

We analyzed the industrial development indicators of some of the world's leading industrial states: the USA, Germany, Japan, and China, as well as Ukraine and its neighbors: Poland, Hungary, the Czech Republic, and Slovakia. Manufacturing value added per capita is the highest in Germany and the USA, among post-socialist countries the highest indicators are in the Czech Republic and Slovakia. Regarding the export of industrial products per capita, the Czech Republic, Hungary and Slovakia are several times ahead of the USA, China and Japan (see table 2).

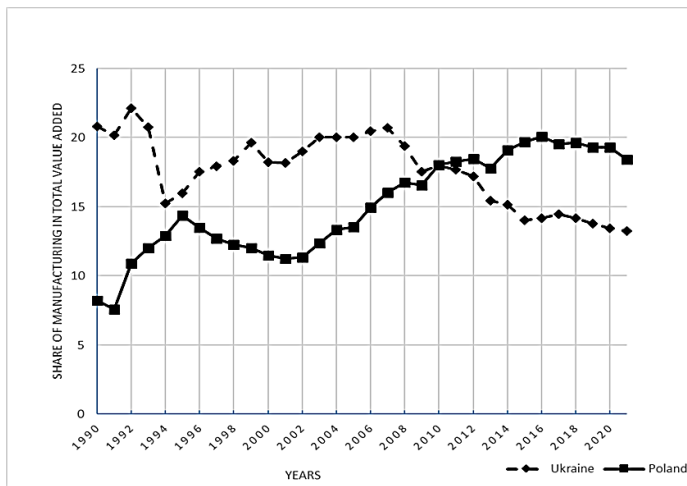
Table 2

**Indicators of Industrial Development in different countries in 2021**

Indicators	Germany	China	Czechia	USA	Hungary	Poland	Slovakia	Japan	Ukraine
CIP index	0.40	0.37	0.18	0.31	0.12	0.14	0.12	.29	0.03
Manufacturing value added (MVA) per capita, (USD 2015 constant prices)	8483	3145	4824	7020	2830	2530	3528	7140	265
Manufactured exports per capita, (USD 2015 constant prices)	17591	2262	20431	3118	13192	7335	18229	418	1075
Industrialization intensity index	0.62	0.61	0.62	0.41	0.56	0.40	0.55	0.59	0.31
Manufacturing value added share in total GDP	0.20	0.28	0.24	0.12	0.18	0.16	0.19	0.20	0.11
Medium- and high-tech MVA share in total MVA	0.61	0.41	0.51	0.44	0.55	0.33	0.50	0.56	0.28
Industrial export quality index	0.87	0.84	0.88	0.72	0.90	0.76	0.89	0.91	0.55
Manufactured exports share in total exports	0.90	0.96	0.95	0.71	0.91	0.88	0.95	0.89	0.71
Medium- and high-tech manufactured exports share in total manufactured exports	0.72	0.62	0.70	0.63	0.76	0.53	0.72	0.80	0.32
Export quality	0.81	0.79	0.82	0.67	0.83	0.71	0.83	0.84	0.52
Industrial intensity	0.40	0.35	0.38	0.28	0.36	0.25	0.35	0.38	0.20

Source: estimation of author based on UNIDO data base [5]

Being an extremely industrially developed country in the early 1990s, Ukraine underwent a process of deindustrialization, which was reflected in very low indicators of production and export of industrial goods.



**Fig. 1. Share of Manufacturing Value Added in Total VD in Ukraine and Poland [5]**

This can be observed in comparison with the Polish economy, which has doubled the share of industry over 30 years, while in Ukraine, the manufacturing industry has almost halved (see fig. 1).

The Ukrainian economy at both national and regional levels needs the intensification of the new industrial and investment policy and development principles to create new jobs. Industrial policy should identify mechanisms and priority areas in which to carry out investments with the aim of reorienting production to the needs of the mass market, ensuring long-term economic growth.

Production in machine building has recently sharply declining, but it is the area which defines technical progress in the country, at least in the medium term. Energy and raw material markets – it is rather competitive markets in which it is not possible to get high profits. Market of the machine building, in contrast, has strong prospects of increasing its profitability and revenues. Unfortunately, the share of such industries in the domestic economy is not high, as they are in the process of decline due to low

purchasing power of industrial and private consumers. If you invest in the machine-building enterprises, the risk just increases and the level of complexity of manufacturing products is also growing, but we are able to increase significantly the value added in comparison to energy-intensive industries.

We agree with professor of Harvard University, President of International Economic Association D. Rodrik who emphasized that the most effective industrial policies are those that entail close, collaborative interaction between government agencies private firms, whereby firms receive critical public inputs – financial support, skilled workers, or technological assistance – in return for meeting soft and evolving targets on investment and employment. This kind of industrial policy is likely to work much better – whether in promoting local economic development or in directing major national technological efforts – than open-ended subsidies or tax incentives [3,4].

Thus, in order to carry out an effective industrial and investment policy, it is necessary to ensure a number of structural reforms at the macro and micro levels, the creation of new financial institutions for crediting production and the service sector with the participation of first-class banks and financial corporations of the USA and the European Union, which will certainly create new levers for a stable, sustainable, not cyclical economic growth.

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