POLICY MANAGEMENT FORMATION OF INDUSTRIAL ENTERPRISES FUNDAMENTALS ON THE BASIS OF USE OF PRODUCTION FUNCTIONS

Volodymyr E. Momot, Alfred Nobel University, Dnipro (Ukraine).
E-mail: vmomot@duan.edu.ua

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The real statistical material 1991 – 2019 analyzes the processes of using fixed assets in the industry of Ukraine. On the basis of studying the patterns of behavior of GDP growth rates, depending on the nature of economic development, an assessment of the current situation has been made and recommendations for optimizing proportions in the economy for the near future are formulated. The main tool for quantitative study of the nature of production of the aggregate product in any field of activity is the apparatus of production function in the form of Cobb-Douglas because it allows you to determine the impact of various factors on the end result.

It is established that the industry as a whole participates in five oscillatory processes: the first in the period 2001–2005 with an equilibrium point corresponding to a growth rate of 120%; second in 2005–2009 – 117%, third in 2009–2013 – 115%, fourth in 2013–2017 – 110% and fifth in 2017–2019 – 105%. It is noticeable that the migration of the equilibrium point indicates a gradual slowdown in the development of domestic industry.

It is also established that the most powerful are the fluctuations in the volume of industrial production, which in one way or another refers to the so-called. eleven-year cycles that determine the frequency of global macroeconomic crises. At the same time, the analysis of the migration of the equilibrium point of the oscillation process shows a higher frequency dynamic with a period of 3-4 years. This is certainly a manifestation of the nonlinearity of the fluctuations involved in the process of industrial production at both national and regional levels.

It is determined that the fluctuations in industrial output in Ukraine are synchronized with the global macroeconomic cycles. It can be concluded that national industry has been an integral part of the world economy since at least 1998, when the next macroeconomic crisis began. But the emergence of a powerful second harmonic, three years in length, which corresponds to a short half-wave of an eleven-year cycle, almost across a full period of fluctuations, ie by 2010–2011, indirectly indicates that definitive adherence to global cycles occurred after the 2007–2009 economic crisis.

Within the time range studied for both the Dnieper region and Ukraine as a whole, industrial production is followed by an extensive scenario. The only exception is the production of industrial products in Ukraine in 2013 – 2017.

As a result of the near-permanent crisis affecting the domestic economy since the end of 2008, the curious effect of "pent-up demand" on upgrading or upgrading production facilities has emerged when enterprises, lacking sufficient resources, wait for such resources to emerge and then compete for products or industrial services for the renewal of fixed assets, creating a quasi-monopoly market situation in this area when demand exceeds supply. The way out of this situation is to restore the optimal balance between labor costs for the development and introduction of new fixed assets and total labor costs, with a further increase in labor intensity, primarily due to increased efficiency in this area. The increase in labor costs in the industrial sector will only be justified as the production system intersects the intensity threshold.

References

1. Douglas, P. (1976). The Cobb-Douglas Production Function Once Again: Its History, Its Testing, and Some New Empirical Values. *Journal Of Political Economy*, *84*(5), 903-915. doi: 10.1086/260489

2. Özçam, A., & Özçam D. S. (2019). Three Paradoxes with The Cobb-Douglas Production Function. (2019). *European Journal of Business and Management*. doi: 10.7176/ejbm/11-1-12

3. *Staty`sty`chna informaciya* [Statistical information]. (2019) . Retrieved 15 November 2019, from http://www.ukrstat.gov.ua/operativ/oper_new.html

4. *Promy`slovist`* [Industry]. (2019). Retrieved 15 November 2019, from http://www. ukrstat.gov.ua/operativ/menu/menu_u/prom.htm

5. Ershov E`.B. & Sady`kov I.S. (1985) *Issledovanie vzaimozamenyaemosti resursov i ikh dinamicheskoj proporczional`nosti v otraslyakh promy`shlennosti SSSR* [The study of the interchangeability of resources and their dynamic proportionality in the industries of the USSR], *E`konomika i matematicheskie metody`* [Economics and mathematical methods], XXII (3), 426-440.

6. Barro, R., & Sala-I-Martin, X. (1992). Public Finance in Models of Economic Growth. *The Review Of Economic Studies*, *59*(4), 645. doi: 10.2307/2297991

7. Pavlova, N. (2019). *Issledovanie otkry`toj dinamicheskoj modeli Leont`eva s neprery`vny`m vremenem kak linejnoj dinamicheskoj sistemy` s upravleniem* [The study of Leontief open dynamic model with continuous time as a linear dynamic system with the control], *Differenczial`ny`e Uravneniya* [Differential Equations], 55(1), 111-116. doi: 10.1134/s0374064119010114

8. Varian, H. (2017). *Microeconomic analysis* (9th ed.). New Delhi [etc.]: Viva Books.