



*V. P. Martynyuk*

## ASSESSMENT OF THE NATIONAL ECONOMY BASED ON THE INTEGRAL INDICATOR OF ECONOMIC SECURITY

**Background:** An important research goal is to study and apply practically the integral indicator of economic security of the state. **Aims and Objectives:** Scientific rationale and methodological approaches to improvement of the current methodology for assessing the level of economic security. **Methods:** Analysis, formalization, standardization, factor analysis of principal components. **Results:** New methods of establishing values in calculation of the integral index of economic security have been suggested. **Conclusions:** The highest level of economic security of Ukraine was recorded in 2008, 2010 and 2012. In the coming years we should expect a gradual increase of the economic security of Ukraine.

**Key words:** economic security, economic security indicators, integral indicator.

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2007–2012

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		2007	2008	2009	2010	2011	2012
	, %	12,3	20,0	34,7	39,5	39,1	38,5
	( <sup>*)</sup>	6,8	3,9	3,6	4,0	5,2	5,6
	,	54,1	96,0	83,1	85,9	95,6	102,1
	, %	58,9	76,8	77,5	77,9	79,0	81,3
		58,7	59,3	57,7	58,5	58,9	59,4
	,	673,1	596,0	693,1	564,0	620,7	603,6
	, % -	112,5	106,3	90,8	110,2	105,6	107,3
		48,8	49,6	49,4	51,0	51,6	53,7
	, . .	720,7	948,1	913,3	1094,6	1301,9	1453,7
	, .	15496	20495	19832	23908	28533	31899
		107,6	94,8	78,1	111,2	107,5	108,0
	, . . .	188,5	233,1	151,8	150,7	211	236
		93,5	117,1	98,2	98,5	116,0	100,0
	,	6175,4	5490,9	5079,0	4826,7	4494,4	4677,1
	, . .	29295	53290	46028	39271	55000	45828
	, . .	1911,7	1905,9	1917,4	2059,0	2098,0	2156,2
	, % -	105,4	98,7	78,1	108,5	107,9	108,2
	, % -	107,2	101,4	87,3	94,0	102,8	104,6
	, %	112,2	104,4	87,9	94,2	93,6	95,3
	,	169,4	169,5	169,5	169,5	169,7	169,9

<sup>1</sup> [5, 6]

		2007	2008	2009	2010	2011	2012
		196,3	192,6	173,6	187,9	176,8	180,4
		12,6	8,8	5,5	4,2	4,5	4,8
		19845	20257	19146	20054	21971	22671
	, %	69,8	67,6	63,7	64,5	63,1	61,8
-	(	0,9540	1,0183	0,9442	1,0316	1,127	1,123
	)	40,74	43,65	42,42	43,3	42,9	43,8
	( % )	45,81	51,02	43,55	43,6	42,8	42,1
	( % )	0,813	0,783	0,874	0,812	0,755	0,784
		4,33	4,44	4,6	4,7	4,74	4,8
	, %	14,2	13,0	12,8	13,8	14,1	15,2
	-	0,93	0,9	0,95	0,9	0,92	0,96
	, %	1404	1378	1340	1303	1410	1450

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1.  $[x_1, x_2, \dots, x_m]$   
 $[z_1, z_2, \dots, z_m]$ .  
 “ ”  
 :

$$I = \sum_{i=1}^n a_i z_i, \quad \sum a_i = 1, \quad 0 \leq a_i, z_i \leq 1, \quad (1)$$

$\alpha_i$  — ,  $i$ -

[2]

[3],

$$Z_{il} = \begin{cases} x_i / x_i, & x_i \\ x_i / x_i, & x_i \end{cases}, \quad \begin{matrix} z_{i,1} = 1 & x_i = x_i \\ z_{i,1} = 1 & x_i = x_i \end{matrix}; \quad (2)$$

(  $x$  ),  $Z_{il}$  1,  
 (1).  
 ( )  
 [3].

5 :  $(x, x), (x, x), (x, x), (x, x)$ ,  
 $x, (x, x), (x, x)$  :  
 $x, x -$   
 $x, x -$   
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 $x, x, x, x, x, x$   
 $x, x$   
 0,5,  
 :

$$Z_{i,2} = \begin{cases} \frac{x_{i,j} - x}{x - x}, x \leq x_{ij} < x; \\ \frac{(x_{ij} - x) + x^*(x - x_{ij})}{x - x}, x \leq x_{ij} < x; \\ 1, x \leq x_i \leq x; \\ \frac{x^*(x_i - x) + (x - x_i)}{x - x}, x \leq x_i \leq x; \\ \frac{x - x_{i,j}}{x - x}, x \leq x_{ij} < x; \end{cases} \quad (3)$$

$[x, x]$  0.  
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$$I_j = (I_{j,1} + I_{j,2}) / 2. \quad (4)$$

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 [3].  
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 [2]  
 ,  
 :

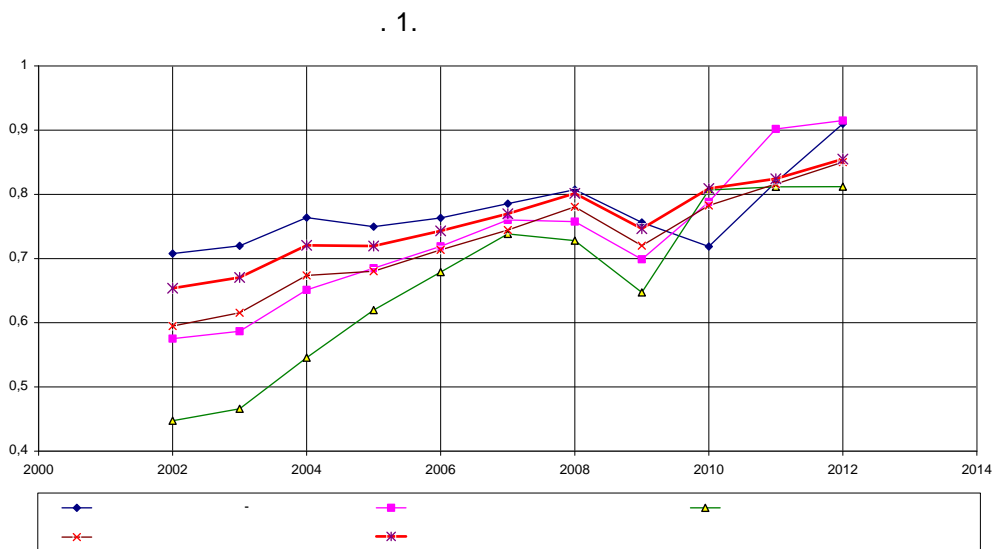
$$\tilde{X} = \frac{X_i - X_i^{\min}}{X_i^{\max} - X_i^{\min}}, \quad (5)$$

$\tilde{X} -$   $X_i^{\min}$   $X_i^{\max}$   $X_i$

( . 2).

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2008, 2010 2012

1. — / — : — , 1972. — 126 .
2. — 02.03.2007 . 60 [ — : [http://www.me.gov.ua/control/publish/article?art\\_id=97980](http://www.me.gov.ua/control/publish/article?art_id=97980)
3. — / — // — 2011. — 4. — . 13-32.
4. — [ — : <http://www.ukrstat.gov.ua>
5. — [ — : <http://www.ifg.org>

### Reference

1. Hermeyer Yu. B. *Igry s neprotivopolozhnymi interesami. Teoriya prinyatiya resheniy pri nepolnom yedinstve* [Games with no opposing interests. The theory of decision-making under incomplete unity]. Moscow: MGU, 1972. 126 p.
2. *Metodyka rozrakhunku rivnia ekonomichnoi bezpeky Ukrainy* 02.03.2007, 60 [Method of calculating the level of economic security of Ukraine]. Available at: [http://www.me.gov.ua/control/publish/article?art\\_id=97980](http://www.me.gov.ua/control/publish/article?art_id=97980)
3. Sukhorukov A. Harizashvili M. *Bankivska sprava*, 2011, no. 4, pp. 13-32.
4. *Derzhavna sluzhba statystyky Ukrainy* [State Statistics Service of Ukraine]. Available at: <http://www.ukrstat.gov.ua>
5. *Mizhnarodnyi valiutnyi fond* [International Monetary Fund]. Available at: <http://www.ifg.org>

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