









# “Financial wellbeing of households in instability”

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# FINANCIAL WELLBEING OF HOUSEHOLDS IN INSTABILITY

## Abstract

In instability and economic turbulence, the wellbeing of households as market economy entities constitutes the financial-investment capacity of a region, the level of which is determined by the conditions of the competitive socio-economic environment. The paper aims to estimate the financial wellbeing of households on the example of the oblasts of the Carpathian region of Ukraine in instability. The study is based on a system-integral estimation method, which includes the implementation of three stages: (1) development of a system of indicators, (2) determination and substantiation of weight significance, and (3) construction of time series of empirical parameters of households' wellbeing based on temporal and spatial approaches. The analysis reveals that the financial wellbeing of households differentiates in a competitive economic environment and with the spread of behavioral factors (COVID-19, consumer reflections). Among the oblasts of the Carpathian region of Ukraine, the highest values of empirical parameters of financial wellbeing were in Zakarpatska (0.537) and Chernivetska (0.459) oblasts (2019). Meanwhile, the level of the financial wellbeing of households is higher in Lvivska oblast by several indicators. The divergence of the Carpathian region from Ukraine by the level of the financial wellbeing of households was mostly observed in 2018–2019. Zakarpatska oblast was the leader by the level of the financial wellbeing of households in 2010–2019. The study is of the practical nature for framing the regional economic policy in terms of detecting the critical "pressure" of financial wellbeing on the economic growth of the region and economic ability to increase investment capacity.

## Keywords

determinant, household, Carpathian region, resilience, empirical parameter, integral estimation, benefits

## JEL Classification

D31, D61, I31, R13

## INTRODUCTION

The wellbeing of the population is an indicator of access to benefits that, as needed, become even more diverse and are produced by various domains. The financial domain of ensuring the wellbeing of the population remains the most important in the system of its determinants, since it creates conditions for meeting all the needs through the opportunity to receive income. The modern conditions of human development differentiate the ways of securing financial wellbeing and change the conceptual understanding of an economic person with the growth of one's responsibility for own wellbeing. Meanwhile, financial wellbeing not only depends on labor conditions and opportunities to receive decent income, but also is determined by other tangible and intangible assets that can be capitalized if needed.

A new comprehension of human capacities updates the research of the financial wellbeing of households in terms of its determinants – not only financial but also property-related and behavioral. The development of recommendations for estimating the financial wellbeing with its testing on the regional level allows detecting the features (positive trends and flaws) of the human development environment and suggesting recommendations on the increase of its financial resilience in instability.

The oblasts of the Carpathian region of Ukraine lag behind the average national values, hampering the high level of the financial wellbeing of households in the oblasts of the Carpathian region. The leading region and outsider can be easily traced among the oblasts of the Carpathian region of Ukraine by economic development parameters. It is about Lvivska and Chernivetska oblasts, respectively, while Zakarpatska and Ivano-Frankivska oblasts have mostly average (within the Carpathian region of Ukraine) values with the former one gravitating towards the below-average economic development level and the latter one towards the above-average level. A significant divergence of the values of the financial wellbeing of households in the Carpathian region compared to Ukraine caused by the differentiation of economic growth paces of the regions has updated the need to develop the methodological approach to estimating the wellbeing of households in conditions of instability.

## 1. LITERATURE REVIEW

According to the Consumer Financial Protection Bureau, financial wellbeing is the human condition that provides an opportunity to fully meet their financial liabilities, feel safe nowadays and in the future, and make choices that allow them to enjoy life (Consumer Financial Protection Bureau, 2017). A comprehensive understanding of financial wellbeing combines the control over finances, financial resilience and security, as well as financial freedom of making decisions to enjoy life and achieve financial goals (Cárdenas et al., 2021, Mahendru et al., 2020). Drawing on the basic understanding of financial wellbeing, its estimation methodology is developing at the junction of conceptual provisions regarding (1) income and expenditures, purchasing power of the population (the most addressed direction is related to general economic conditions and social standards of consumption, living standards, and the quality of life; (2) financial awareness and inclusion of the population (the actively developing direction in conditions of the establishment of behavioral economics); (3) financial capacity of society (the direction that determines the efficiency of territorial management from the viewpoint of using the resource capacity of the area) (Voznyak, 2021).

Research of financial wellbeing in terms of income and expenditures is generated by scientific discussions about which indicator is more objective for evaluation – income or consumption (Gradín et al., 2008). The impact of income on wellbeing has been the object of scientific research for a long time. The ideas regarding the impact of the reference of income on the financial wellbeing of the population are relevant to this day (Ferrer-i-Carbonell, 2005), emphasizing the subjectivity

of its estimation when using the objective analysis methods (based on statistical data). The impact of income and other resources on wellbeing is relative due to dependence on changing standards, which, in turn, depend on expectations, addictions, and social comparisons (Diener, 1993). Consumption research determines the role of consumer expenditures for subjective perception of financial wellbeing. Meanwhile, consumption expenditures depend on lifestyle, which is directly influenced by inequality, income level, and limited resources (Noll & Weick, 2015).

Scientific research of financial wellbeing in terms of developing financial awareness and financial inclusion of the population combines pedagogical and managerial recommendations. Financial awareness is positioned as an antecedent of financial wellbeing (Vieira et al., 2021). The context of financial awareness raises the issue of financial socialization of individuals, which defines their features, the further expression of which in the behavior is defined by financial wellbeing (Drever et al., 2015).

The review of the latest studies on financial wellbeing indicates the domination of individualized behavioral approaches to its research. The studies (Islam et al., 2017; Shkvarchuk & Slav'yuk, 2021; Kannadas, 2021) often address psychological aspects of reflection, perception, and decision-making in uncertainty. Financial wellbeing is the perceptive projection of current and desired living standards defined by financial freedom (Brüggen et al., 2017).

The perception of financial wellbeing combines the sense of security of the financial future and stressful feelings in the management of individu-

al financial resources (Netemeyer et al., 2018). The perception of financial wellbeing from the viewpoint of impact on individuals, including their psychological health, is combined with the phenomena of financial hardships, financial condition, tension, stress, and finally, financial security (Hassan et al., 2021).

The combination of subjectivization of understanding the financial wellbeing (perception and reflections through financial awareness and rational decision-making) and objectivization of financial capacities remain common in the evaluation of the former. Mapping the relationship between financial awareness and financial capacities allows evaluating the financial wellbeing of the population more comprehensively (Mahendru, 2021). Moreover, the research proves the domination of subjective construction of the financial wellbeing evaluation: wellbeing is more closely related to the individual estimation rather than the objective size of income (Barnard, 2016).

Estimation of financial wellbeing as a complex phenomenon requires adaptation for the countries with different socio-economic conditions and for different socio-demographic groups. For that matter, the methodologies for estimating the relationship between financial awareness (perception, objective financial knowledge, experience, and certainty), financial behavior (fulfilment of financial obligations, financial planning, savings, and monitoring) and features (time perception, impulsiveness, social status, locus of control, and general condition) of an individual have been developed (Sehrawat et al., 2021). Financial behavior is proven to be a key factor in financial wellbeing as it defines financial stress and financial awareness for determining wellbeing in the future. Therefore, the regulation of income and expenditures, management of financial stress, and improvement of financial awareness are the basic tasks for securing the financial wellbeing of the population, especially if it is in worse socio-economic conditions (Rahman et al., 2021). Financial behavior is the result of individual reactions to behavioral factors such as future security, savings, investment, credit discipline, financial consciousness (Kavita et al., 2021; Rushchshyn, 2021). Some studies on the estimation of financial wellbeing prove gender differences in its subjective perception, that is, financial

knowledge plays the major role among the factors of financial wellbeing and satisfaction with its level for men, while financial condition – for women (Gerrans et al., 2013).

The role of financial knowledge in the wellbeing of the population increases in conditions of global financial instability, information asymmetry on financial markets, and complexity of financial products and technologies on the Fintech grounds (Philippas & Avdoulas, 2020). The issue of financial awareness of the population in relation to financial behavior and stress management remains the main wellbeing factor in conditions of the establishment of behavioral economics. Meanwhile, financial responsibility for wellbeing increases, emphasizing the development of the concept of its individualized behavioral understanding.

There is also a controversial direction of the research of financial wellbeing related to its identification with financial capacity, which is broader in content than financial awareness and knowledge because it constitutes the result of “healthy” financial behavior and financial planning, efficient decision-making about the selection of financial products and reaction to financial changes (Cox et al., 2009). Financial capacity requires the proper level of financial knowledge supported by the desired financial behavior to secure financial wellbeing (Xiao & O’Neill, 2016). Increasing the financial capacity of society (area) requires the financial resilience of households and their ability to maintain financial stability in financial shocks. The lower financial resilience of households with low income requires additional support through access to various liquidity assets such as loans, social payments, special offers to increase income, etc. (Bufe et al., 2021).

Financial capacity of communities, regions, and households correlates with different socio-economic conditions of the society development environment: while the societies with low income need the substantiation of the ways of its increase, for the developed societies, financial wellbeing is estimated in terms of the concept of experienced wellbeing with the determination of the maximum threshold values for income, with the growth of which an individual feels the life improvement (Killingsworth, 2021).

Despite subjective projections of financial wellbeing, its estimation methodology, in the first place, should be improved by developing the conceptual basis. The estimation of financial wellbeing by objective (statistical) parameters allows interstate and interregional comparisons and contributes to improving decision-making. Following the previous research, this one hypothesizes that the financial wellbeing of households depends on the system of financial, property-related, and behavioral indicators of the regional economic environment.

The identification of financial wellbeing of households and financial-investment condition of an entity stipulates the development of the methodology to estimate the financial wellbeing of Ukrainian households based on the innovative composition of indicators, the use of a multiplicative form of integral index, simultaneous normalization and integral estimation of indicators, and formalized substantiation of weight coefficients of the indicators.

## 2. METHODS

To build a time series of integral coefficients of households' financial wellbeing, three tasks must be accomplished: (1) normalization of indicators, (2) calculation and substantiation of weight coefficients, and (3) construction of integral coefficients based on the spatial approach.

Normalization of indicators is the initial and top-priority research stage. All indicators have different dimensions and orientations, so the correct normalization will bring the indicators within the [0; 1] range and to one comparable series.

1. The indicators of the financial wellbeing of households are normalized by formula (1) for indicators-stimulators and formula (2) for indicators-destimulators:

$$a_{it}^{sn} = \frac{x_{it}^n}{x_{\max t}^N}, \quad (1)$$

$$a_{it}^{dn} = \frac{x_{\min t}^N}{x_{it}^n}, \quad (2)$$

where  $a_{it}^{sn}$ ,  $a_{it}^{dn}$  is normalized values of the  $i$  indicator-stimulator and destimulator for the  $n$  CTC (consolidated territorial community is the administrative-territorial unit in Ukraine) in the  $t$  time period;  $x_{\max t}^N$ ,  $x_{\min t}^N$  are the maximum and minimum values of the  $i$  indicator in the  $t$  time period within the  $N$  set of CTCs in the region.

The weight coefficients of financial wellbeing indicators ( $w_i^e$ ) of the integral coefficient are calculated by the principal components method by the formula (3):

$$w_i^s = \frac{|Component_i^s|}{\sum_i^n |Component_i^s|}, \quad (3)$$

$$w_i^s > 0, \quad \sum_i^n w_i^s = 1,$$

where  $w_i^e$  is the weight of the  $i$  indicator of the households' financial wellbeing;  $Component_i^s$  is the value of the principal component of  $i$  indicator;  $n$  is the number of indicators within the group.

To avoid the zero value of indicators within the group and the situation when the integral index value is equalized by some parameters at the expense of others, a multiplicative form of the index is used instead of the classical approach (weighted-sum method). The methodology for calculating the integral coefficients of financial wellbeing allows taking into account the nonlinearity of social and economic processes through the use of a logarithmic function.

## 3. RESULTS

The financial wellbeing of a household is the condition of the household that secures fulfillment of financial obligations and opportunities to be confident in the financial future and make respective financial-investment decisions. The system of determinants of households' financial wellbeing, including assets and debts, in addition to the distribution of financial assets for different financial products, wages, and wage arrears, as well as investment capacity of households, faces substantial changes in crises and periods of economic recovery. So, increasing accessibility of secured and unsecured loans shows the development of the financial system and growing financial capac-



**Table 1.** The system of determinants of the households' financial wellbeing in an unstable economy

Determinants	Quantification
<b>Income and living conditions</b>	
Average monthly wages	On average per full-time employee, €
Disposable income of the population	
Consumer price index	% of the previous year
The decile coefficient of the total income of the population	
Coverage with housing	Per a household, €, m2
<b>Social protection</b>	
Average governmental assistance to low-income families	€
Average housing, electricity, and fuel benefits and subsidies (non-cash)	Per a household, €
Wage arrears	
Number of the population with average monthly per capita income below the subsistence level	% of the total population
<b>Resourcing of households</b>	
Aggregate consumer expenditures of households	
Investment expenditures of households	Per a household per month, €
Accumulated total resources of households	
The share of households' food expenditures	Per a household per month, %

*Note:* The indicators-destimulators of financial wellbeing are highlighted in grey.

ity of households. The transformation changes in the economic system of the country and its regions and the changes in the economic behavior of households have caused the selection of respective structure of the system of financial wellbeing determinants (Table 1).

Weight coefficients were determined for each oblast based on normalized data of financial wellbeing indicators to map the "variation scope" of

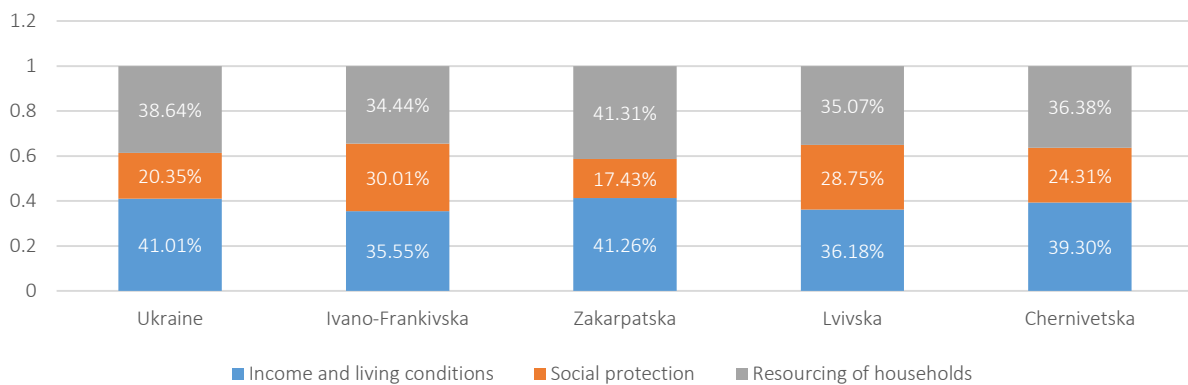
the significance of financial determinants for framing the wellbeing by oblasts of the region. Table 2 shows that in the income and living conditions group, the consumer price index had the lowest weight in Ivano-Frankivska oblast (18.5%), coverage with housing – in Zakarpatska and Lvivska oblasts (14.67% and 10.48 %, respectively), the decile coefficient of the total income of the population – in Chernivetska oblast and on average in Ukraine (11.36% and 12.39%, respectively).

**Table 2.** Coefficients of weight significance of households' financial wellbeing indicators in Ukraine and the oblasts of the Carpathian region, 2010–2019, %

Source: Calculated by the authors.

Indicators	Ukraine	Regions / Indicator values			
		Ivano-Frankivska	Zakarpatska	Lvivska	Chernivetska
<b>Income and living conditions</b>					
Average monthly wages	21.39	27.15	23.33	24.92	26.81
Disposable income of the population	22.32	27.04	21.26	23.94	25.64
Consumer price index	21.68	18.5	24.51	20.05	24.58
The decile coefficient of the total income of the population	12.39	27.23	16.24	20.60	11.36
Coverage with housing	22.21	27.15	14.67	10.48	11.60
<b>Social protection</b>					
Average governmental assistance to low-income families	23.18	27.15	24.15	24.64	25.84
Average housing, electricity, and fuel benefits and subsidies (non-cash)	26.02	27.04	25.10	25.16	26.71
Wage arrears	21.85	18.58	25.79	24.43	23.29
Number of the population with average monthly per capita income below the subsistence level	28.96	27.23	24.95	25.76	24.16
<b>Resourcing of households</b>					
Aggregate consumer expenditures of households	27.13	31.94	25.59	25.99	30.18
Investment expenditures of households	27.56	21.64	17.90	26.07	20.08
Accumulated total resources of households	28.57	32.35	32.61	27.11	29.99
The share of households' food expenditures	16.75	14.07	23.90	20.83	19.75

Source: Compiled based on the data in Table 2.



**Figure 1.** Priority of indicator groups in securing financial wellbeing of households: across weights, 2010–2019, %

Wage arrears are the least significant among the financial determinants in the social protection group in Ivano-Frankivska oblast (18.58 %). Instead, the structural relationship of weight significance coefficients is homogeneous for other oblasts of the region and Ukraine. Meanwhile, the share of households' food expenditures was the least significant in the resourcing group in Ivano-Frankivska (16.75 %), Chernivetska (19.75%) oblasts, and Ukraine as a whole (16.75%). It is worth mentioning that investment expenditures have high weight significance for securing households' financial wellbeing in all oblasts of the Carpathian region, excluding Zakarpatska. The trend is explained by large amounts of migration capital received by households in the oblast during a year. Therefore, remittances are directed at covering all expenditures, while the financial wellbeing of households correlates with the volume of remittances in the region.

The financial wellbeing of households in Ukraine has a causal relationship with social protection and living conditions. Thus, in Ukraine, the wellbeing of households is determined by income and living conditions at 41.01 % and by the size of social assistance and various benefits and subsidies – at only 20.35% (Figure 1). Resourcing is quite significant for financial wellbeing in the oblasts of the Carpathian region, namely weight significance of the group for Zakarpatska oblast is 41.31%, Lvivska 35.07%, Chernivetska 36.38%, Ivano-Frankivska 38.64%. The financial wellbeing of Ukrainian households by 38.64% depends on the efficiency of the use of aggregate resourc-

es, namely the consumer expenditures-investment resources-savings structural relationship. In particular, investment expenditures and accumulated resources (savings) determine the highest values of weight significance in the process of securing the financial wellbeing.

The coefficients calculated for the groups of households' financial wellbeing show significant divergence of the oblasts of the Carpathian region from the average rate in Ukraine in 2010–2019. For instance, the oblasts of the Carpathian region essentially lag behind by social protection level (Table 3). Therefore, the role of social protection in the structure of aggregate resources has no significance in the process of securing the financial wellbeing of households because of small volumes or certain restrictions regarding access to social programs. Financial wellbeing is not high by the resourcing of households' component in Ivano-Frankivska and Lvivska oblasts. For comparison, in 2010, resourcing of households in Ukraine was 0.406, in Lvivska oblast 0.287, Ivano-Frankivska 0.284. It is worth mentioning that resourcing in Zakarpatska oblast exceeded the national rate by 0.035 in 2019, confirming high dependence of households' financial wellbeing in border areas, including Zakarpatska and Lvivska oblasts, on remittances.

The highest level of the financial wellbeing of households in Ukraine was observed in 2011–2013 and 2018–2019. Naturally, financial crisis and economic shocks not only affect the economic situation and security in the region and the country,

**Table 3.** Weight coefficients for the groups of financial wellbeing determinants, 2010–2019

Source: Compiled based on the data in Table 2 and Figure 1.

Regions	Years									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Income and living conditions</b>										
Chernivetska	0.670	0.715	0.780	0.820	0.645	0.516	0.566	0.642	0.704	0.810
Lvivska	0.637	0.684	0.793	0.792	0.648	0.577	0.612	0.680	0.729	0.767
Zakarpatska	0.648	0.713	0.764	0.788	0.655	0.540	0.584	0.656	0.714	0.782
Ivano-Frankivska	0.709	0.772	0.805	0.877	0.705	0.565	0.627	0.673	0.734	0.818
Ukraine	0.675	0.767	0.848	0.855	0.710	0.565	0.604	0.719	0.781	0.856
<b>Social protection</b>										
Chernivetska	0.122	0.251	0.312	0.292	0.133	0.178	0.233	0.240	0.279	0.221
Lvivska	0.084	0.091	0.102	0.103	0.088	0.069	0.101	0.126	0.134	0.107
Zakarpatska	0.070	0.081	0.103	0.118	0.108	0.090	0.162	0.196	0.183	0.165
Ivano-Frankivska	0.133	0.150	0.146	0.144	0.133	0.158	0.248	0.183	0.161	0.133
Ukraine	0.095	0.111	0.126	0.128	0.100	0.088	0.122	0.128	0.121	0.094
<b>Resourcing of households</b>										
Chernivetska	0.473	0.443	0.597	0.617	0.477	0.235	0.225	0.277	0.421	0.542
Lvivska	0.287	0.347	0.397	0.403	0.315	0.111	0.222	0.281	0.393	0.599
Zakarpatska	0.433	0.468	0.622	0.515	0.420	0.289	0.194	0.377	0.468	0.607
Ivano-Frankivska	0.284	0.301	0.357	0.301	0.217	0.132	0.153	0.358	0.234	0.495
Ukraine	0.406	0.410	0.476	0.525	0.338	0.206	0.235	0.331	0.404	0.572

but also correlate with the financial wellbeing of households (Table 4). The highest values of financial wellbeing integral coefficients among the oblasts of the Carpathian region in 2019 were in Zakarpatska (0.537) and Chernivetska (0.459) oblasts. It is worth mentioning that Zakarpatska oblast was the leader by the level of households' financial wellbeing in the period under research.

The divergence of the Carpathian region from Ukraine by financial wellbeing of households was most observed in 2018–2019 (Figure 2). There is a corresponding trend in wellbeing in Ukraine and the Carpathian region, namely, financial resourcing of households was the highest in the period under research in 2012–2013, and the lowest in 2015. It is worth emphasizing that since 2017, eco-

nomical recovery has fostered the improvement of households' financial wellbeing and thus the volumes of investment resources, which are the drivers of regional economic growth.

The financial wellbeing of households is determined by factors such as financial behavior (savings, investment, consumption, loans, and borrowings), social factors (age, employment status, unemployment, migration activity), psychological factors (attitude towards money, etc.), economic factors (income, wages, consumer price index), financial knowledge and experience (experience with financial products). High financial wellbeing means efficient control over daily finance, the ability to absorb financial risks, and the freedom to make financial decisions that allow households to secure a high quality of life.

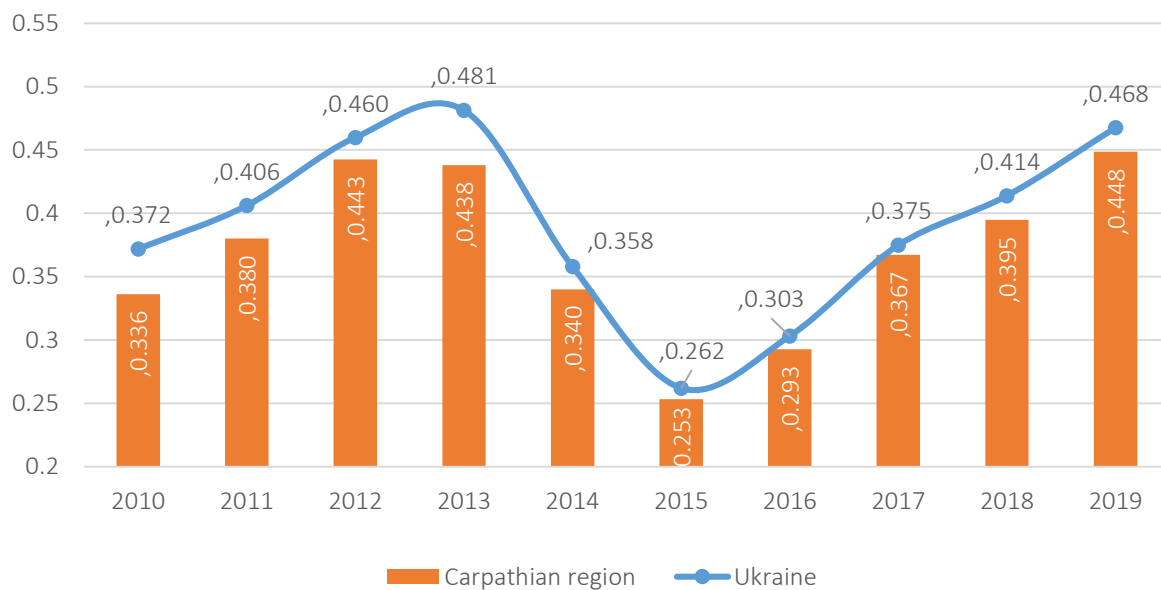
**Table 4.** Financial wellbeing of households in Ukraine and the Carpathian region: integral approach, 2010–2019

Source: Compiled based on the data in Table 3 and Figure 1.

	Years									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ukraine	0.372	0.406	0.460	0.481	0.358	0.262	0.303	0.375	0.414	0.468
<b>Oblasts of the Carpathian region of Ukraine</b>										
Lvivska	0.269	0.302	0.345	0.348	0.283	0.175	0.256	0.307	0.360	0.399
Chernivetska	0.390	0.466	0.566	0.575	0.394	0.299	0.327	0.372	0.432	0.459
Zakarpatska	0.373	0.410	0.495	0.475	0.398	0.305	0.296	0.423	0.473	0.537
Ivano-Frankivska	0.313	0.342	0.364	0.353	0.285	0.233	0.292	0.366	0.314	0.399



Source: Calculated by the authors.



**Figure 2.** The divergence of the financial wellbeing of households in the Carpathian region from Ukraine, 2010–2019

The received results show that financial wellbeing is determined by the level of income, the higher level of which is leveled due to availability of one income source, which immediately causes substantial wellbeing decline in case of a crisis situation (the loss of job, disability); the domination of consumption orientation (forced or conscious) in the entity's economic behav-

ior that reduces the capacity of income sources differentiation and further wellbeing increase; additional expenditures (on housing, treatment, transport, etc.). Financial wellbeing correlates with the stability of income sources determined by employment and type of activity, demand for profession and qualification, and surrounding conditions.

## CONCLUSION

The financial wellbeing of households in conditions of instability depends not only on income, but also on socio-economic conditions, which are the drivers of the growth of financial capacity and destimulators of economic entities' activity. The paper estimates the level of the financial capacity of households in several regions of Ukraine. Among the oblasts of the Carpathian region of Ukraine, the highest values of empirical parameters of financial wellbeing were in Zakarpatska (0.537) and Chernivetska (0.459) oblasts (2019). The divergence of the Carpathian region by the financial wellbeing of households from Ukraine was observed the most in 2018–2019.

Since 2017, economic recovery has contributed to improving households' financial wellbeing and, accordingly, increasing the volume of investment resources, which are drivers of regional economic growth. Based on the integral estimation, the paper proves a close relationship between the wellbeing of households and financial (income level and sources, income and expenditures structure, economic behavior model) and property-related (real estate, securities, precious metals) assets and a moderate relationship with behavioral aspects (financial knowledge, efforts and motivation, employment portfolio, mobility) and surrounding conditions (purchasing power, labor remuneration and social assistance standards, labor conditions, economic growth and development, etc.).

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