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MARKETING, MANAGEMENT AND FINANCIAL PROVIDING OF AFFORDABLE HOUSING

Abstract. *Today's rising housing prices in most countries worldwide have caused increasable attention to the problem of affordable housing. It is a social or ethical issue and an essential economic direction. Thus, affordable housing has great potential, influencing economic growth, labor forces, innovation, sustainable development, and an inclusive economy. Systematization of informational sources, theoretical and practical approaches for providing affordable housing, and assessing social housing needs indicated many views on this problem among scholars and policymakers. That is why marketing, management, and financial providing of affordable housing are significant mainstreams. The research aims to investigate marketing and management fundamentals of providing affordable housing in connection with funding aspects based on cross-country analysis. For achieving this target, key trends of housing market segmentation were analyzed, considering the distribution of the population by tenure status and analytical house price indicators using the data of the statistical office of the EU, the World Bank, and the OECD. The ways to promote more affordable housing by public and local authorities, private investors in affordable housing, and specific social and affordable housing market organizations were described. Main organizational forms of providing affordable and social housing were also characterized. Particular attention was paid to strategic planning for affordable and social housing, especially housing business plans or affordable housing strategy development as a priority step in marketing, management, and financial providing affordable housing. A SWOT analysis for affordable housing developments was used to show strengths, weaknesses, opportunities, and threats to the affordable housing market. To empirically confirm some relevant strengths, the impact of indicators of financial providing of affordable housing was formalized based on correlation analysis (calculating Pearson or Spearman correlation coefficients with time lags based on results of Shapiro-Wilk testing) and construction of Arellano–Bond linear dynamic panel-data regression model with checking the Sargan test of overidentifying restrictions (the sample from 25 EU countries for 2011–2019) using the Excel 2010 and STATA 14.2 software. The dynamic model made it possible to consider the share of affordable housing owners with mortgage or loan or the share of tenants, rent affordable housing at a reduced price or free. The value of GDP of the previous period affects the current situation (due to introducing lag variables and using instrumental variables or the generalized method of moments (GMM) to obtain adequate estimates). The*

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hypothesis that an increase of 1% of the share of affordable housing owners with mortgage or loan causes the rise in GDP per capita of an average of 0.44% with a two-year time lag was empirically confirmed. An increase of 1% of the share of tenants, rent-free housing or affordable housing at the reduced price, causes the decrease of GDP per capita of an average of 0.5% with a two-year time lag. It was substantiated that governments should continue and improve their policies for financing social and affordable housing. At the same time, they should prefer affordable mortgage lending programs over programs of reduced or free rental housing. The results of this research confirm the significant drivers of policies and practices devoted to affordable and social housing, such as marketing, management, and financial providing. The presented recommendations are useful for scholars interested in this scientific field of research, public and local authorities, investors in affordable housing, and specific affordable and social housing organizations.

Keywords: affordable housing developments, affordable housing market, financial providing, market segmentation, marketing, promoting affordable housing, rental housing, social housing, strategic planning, SWOT analysis.

Introduction. Today's rising housing prices in most countries worldwide have caused increasable attention to the problem of affordable housing. Many people feel the need for affordable housing, especially in the face of global challenges such as the COVID-19 pandemic. And it is not only a social or ethical issue and an important economic direction because affordable housing has great potential, influencing economic growth, labor forces, innovation and sustainable development, and inclusive economy. At the same time, there are many points of view on this problem and the best models for its solving among scholars and policymakers. That is why marketing, management, and financial providing affordable housing are significant mainstreams in science, public, and local policy. So, the main purpose of this article is to investigate marketing and management fundamentals of providing affordable housing in connection with funding aspects based on cross-country analysis.

Literature Review. Some aspects of marketing, management, and financial providing affordable housing were investigated by scholars worldwide. Tiutiunyk (2018) analyzed features of regional financial management considering the levels of economic adaptability and potential of sustainable development. Bilan et al. (2019) proved the significant influence of the shadow economy on the demand level at the investment market, which is important in financing affordable housing. Ezebilo (2020) appreciated marketing, management, and other aspects of housing delivery in private developers based on the Papua New Guinea experience. Debrunner and Hartmann (2020) analyzed mechanisms of land policies and instruments that impact affordability using the neo-institutional analysis approach and qualitative case analysis and considering strategic activation of such specific instruments. Hochstenbach and Ronald (2020) explored new processes in the urban housing market, state-initiated revival, new growth in private renting, market forces and regulated marketization, national and local politics, etc.

Zakharkin et al. (2019) investigated crowdfunding as an innovative method of social project funding. The financial provision of social protection and its relationship with dominant macroeconomic indices, the dynamics, and the structure of social expenditures were analyzed by Bagmet and Obeid (2017). Sanchez (2020) described inequality and poverty in housing access, especially preconditions of housing distribution. Kamara (2017) showed that collaborative governance played an important role in multidimensional challenges and territorial development. Bhowmik (2020) provided recommendations on introducing a new monetary and fiscal policy to motivate the lever to grow the share of real estate and other macroeconomic indicators.

Different directions of state and local policy, particularly their impact on economic growth, were studied too, but financing affordable housing as a factor of economic growth was not considered enough. For example, Samoilikova and Kunev (2020) investigated the impact of health care financing on economic growth based on EU countries' analysis. Am Marcel (2019) analyzed the relationship between economic

growth and foreign direct investment and the effect of the last ones. Jafarzadeh and Shuquan (2019) determined the influence of income inequality on people's well-fare and economic growth in general. The role and power of the influence of social factors in the context of macroeconomic state were studied by Palienko and Lyulyov (2018). Bagmet and Haponova (2018) presented an empirical confirmation of the relationship between the quality level of the social sector and social-economic development indicators. Systematization of informational sources, theoretical and practical approaches for providing affordable housing indicates that there are many points of view on this problem among scholars and policymakers. Thus, marketing, management, and financial providing of affordable housing is a relevant issue.

Methodology and research methods. Statistical, comparative, and graphical cross-country analysis was made for the 25 EU countries for the period from 2011 to 2020 or 2019 (limits are connected with the data available on open portals of the OECD, the World Bank, and the EU Statistical Office) to characterize key trends of housing market segmentation, considering the distribution of the population by tenure status and analytical house prices indicators. Due to the analytical analysis, the ways to promote affordable housing, main organizational forms of its providing, and strategic planning for affordable and social housing were described. A SWOT analysis for affordable housing developments was used to show strengths, weaknesses, opportunities, and threats for the affordable housing market.

For empirically confirming the relevant strengths, the impact of some financial providing of affordable housing was formalized based on correlation analysis (calculation of Pearson or Spearman correlation coefficients (Pearson, 1896; Spearman, 1904) depending on the results of the Shapiro-Wilk test (Shapiro and Wilk, 1965) taking into account time lags) and construction of Arellano–Bond linear dynamic panel-data regression model (Arellano–Bond linear dynamic panel-data estimation) with checking the Sargan test of overidentifying restrictions (Arellano and Bond, 1991) for the sample from 25 EU countries for 2011–2019 using the Excel 2010 and STATA software. The dynamic model made it possible to consider how affordable housing owners with mortgage or loan or tenants rent affordable housing at a reduced price or free would affect the current state (due to introducing lag variables and using the method's instrumental variables of the GMM method).

Results. For investigating marketing, management, and financial providing of affordable housing, it is necessary to analyze key trends of housing market segmentation, taking into account the distribution of the population by tenure status and analytical house prices indicators as its dominant reason based on the sample from 25 European countries for the period from 2011 to 2020 or 2019 (limits are connected with the data available on open sources of the World Bank, the OECD, and statistical office of the EU).

Figure 1 describes the housing market segmentation by tenure status in the EU countries in general and in certain countries for 2019. Housing market segmentation differs significantly in the EU countries. The highest share of housing owners (without a mortgage) is in Lithuania (78,2%), Hungary (76,4%), Poland (72,0%), the Slovak Republic (70,3%), and Latvia (67.1%); housing owners with a mortgage – in the Netherlands (60.4%), Norway (60.4%), Sweden (51.4%), Denmark (46.8%) and Belgium (42.6%); housing tenants (at market prices) – in Switzerland (52.8%), Germany (41.1%), Denmark (39.1%) and Sweden (35.5%); tenant, rent at reduced prices or free – in Ireland (22.3%), Slovenia (19.3%), France (16.4%), Finland (14.7%) and Austria (14.5%) (Eurostat, 2019). Besides, market trends in house price indices and rent price indices differ in the EU countries. Figure 2 presents the cross-country analysis of Real House Price Indices of the EU countries in 2020. The highest real house price indices mean the most expensive housing in these countries and vice versa. The cross-country analysis of Rent Price Indices in the European countries in 2020 is presented in Figure 3. It is essential to promote more affordable housing in such market conditions by public and local authorities, investors in affordable housing, and specific organizations in the social and affordable housing market. First and foremost, the interaction of state and local authorities facilitates lower costs for housing business, more efficient housing markets with wider options for housing tenants and buyers.

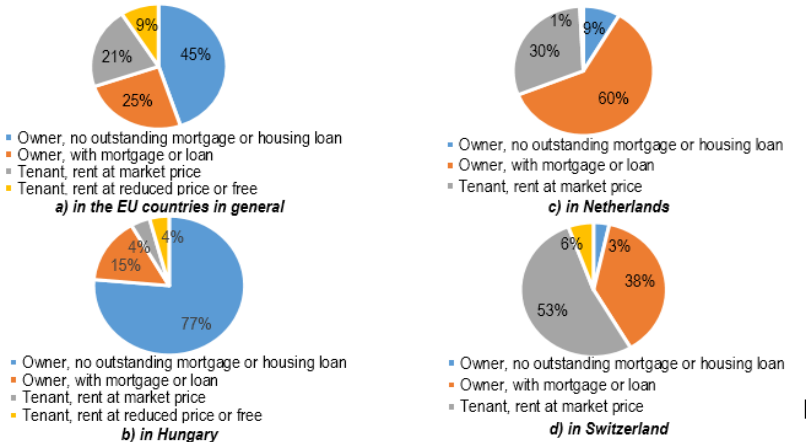

Figure 1. Housing market segmentation by tenure status in the EU countries in general and in particular in certain countries for 2019

Sources: developed by the authors on the basis of (Eurostat, 2019).

There are several ways to promote affordable housing development as follows: 1) to ensure assessing not only current but future housing needs by localities and regions; 2) to provide territorial communities with different incentives to zone for affordable housing; 3) to reduce normative and legal requirements that have a negative influence on housing market development and housing costs level; 4) to allow cities to use their own resources received due to pro-housing land use with the investing purpose etc. (Bubny, 2017).

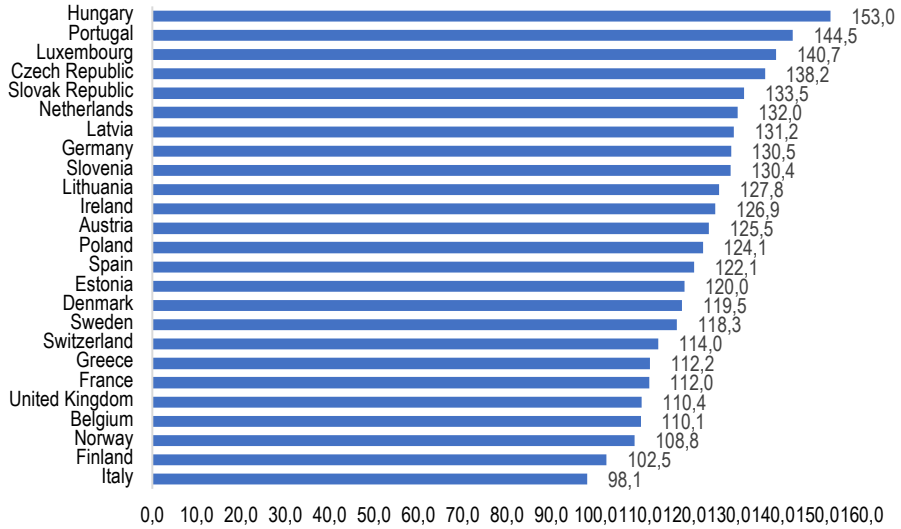

Figure 2. The cross-country analysis of Real House Price Indices of the EU countries in 2020

Sources: developed by the authors on the basis of (OECD.Stat, 2020a).

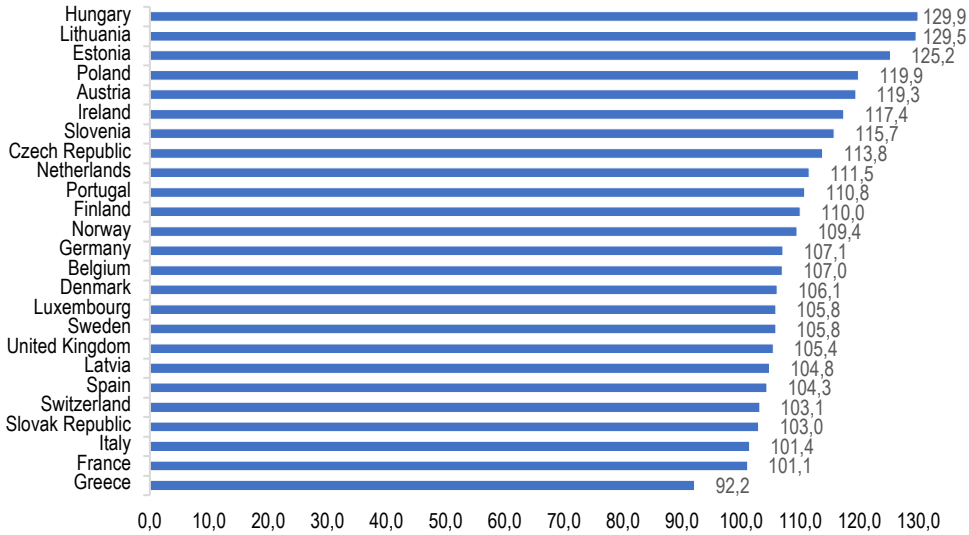

Figure 3. The cross-country analysis of Rent Price Indices of the EU countries in 2020
Sources: developed by the authors on the basis of (OECD.Stat, 2020a).

Other ways to promote more affordable housing by public and local authorities include the following: 1) to introduce enforceable «rights» to finance affordable housing in areas where it is necessary; 2) to require territorial localities to develop plans for affordable housing; 3) to encourage developers to build affordable homes in the form of different incentives; 4) to offer incentives for local authorities to be interested in promoting affordable housing development; 5) to improve legislation to allow and encourage local activity aimed to affordable housing development; 6) to attract wider financial resources for affordable and social housing; 7) to strengthen policies for effective allocation of available financial and other resources etc. (PSN, n.d.). Harrison (2020) proposed 30 measures to promote affordable housing, such as 1) to make a business plan or strategy for affordable housing development; 2) be innovative; 3) understand local housing ecosystem; 4) to hold forums and other events connected with affordable housing and recognize affordable housing providers; 5) to promote national and local affordable housing programs to developers and citizens; 6) to use all possible land assets; 7) to ensure affordable housing component in case of surplus lands disposal; 8) to undertake land banking; 9) to reduce taxes for providers of affordable housing; 10) to promote opportunities for vulnerable groups of population; 11) to develop community-based partnership; 12) to bring investment attraction and local planning functions together for the promotion of affordable housing as an economic growth opportunity and so on. As mentioned above, particular attention is paid to strategic planning for affordable and social housing, especially housing business plans or affordable housing strategy development, as a priority step in marketing, management, and financial providing of affordable housing. Strategic management helps organizations in affordable housing identify effective strategies for improving their performance considering internal and external factors. Housing services prefer an aggressive strategy because of its operation in a highly regulated environment. They should continue to accentuate receiving a share of state and local financing for affordable housing developments (The Corporation). Affordable housing needs strategies focusing on the quantitative aspects of housing or upon the quality aspects of housing. If the regional market does not allocate enough dwellings concerning the number of households in the region, a quantity-aligned strategy is necessary; if the numerical situation is sufficient, a quality-aligned strategy should be pursued (Voss, 2012). Affordable housing policy programs are based on financial providing, housing allowances, grants,

tax incentives, relief for housing mortgages, development of rent-to-buy models, social rental housing, and other forms of financing affordable housing (Salvi del Pero et al., 2016). Moreover, one of the classifications divides housing subsidies into 1) supply-side subsidies aimed to house producers (direct government funding, subsidies, land concessions, tax incentives); 2) demand-side subsidies aimed at housing users (housing allowances, reduced interest-rate for housing loans or mortgages, property tax incentives) (Clapham et al., 2012). Housing associations are not-for-profit social landlords that provide homes and support. They offer similar types of housing to people on a low income or who need extra support, in particular: 1) social homes (social rented and affordable rented housing, which are offered at a subsidized rent); 2) shared ownership homes (people buy a percentage of the property (25–75%) and pay a reduced rent on the rest to a housing association); 3) market homes to rent and buy (quality homes to rent or buy at market rates); 4) essentially supported and specialist housing (homes with extra space or facilities for people with mobility problems, homes where the housing association provides care and support services to residents, homeless hostels, etc.). Housing associations invest in community services and regeneration, support vulnerable people, and reinvest all their income into delivering their social purpose, including building new homes (National Housing Federation, n.d.). In this context, it is essential to understand strengths, weaknesses, opportunities, and threats for affordable housing developments using a SWOT analysis (Figure 4).

Strengths	Weaknesses	Opportunities	Threats
• Financing affordable housing has a positive effect on economic growth and sustainable development, the welfare of the population and inclusive economy. • Affodable housing influences on labour forces activity and its moving, innovation flows etc. • Affordable housing developments have a potential for future infrastructure building and respectively benefits.	• Housing prices and costs are high and rising in many affordable housing programs. • There is a high demand for rental housing among low and middle income families. • Most businessman and employers are not focused on housing needs. • Many builders perceive building affordable housing to be unprofitable.	• Building affordable housing or taking part in its investing is a trend of social responsibility. • New resources appear for a new affordable housing initiatives. • Key stakeholders (state and local authorities, business, public and international organisations) are open to a partnership for affordable housing developments.	• Unstable legal, political, economic and financial situation in the country. • Reduced state and local funding support for affordable housing. • Shortcomings of the legal framework in this area. • Conflits in urban land use planning. • Constantly rising cost of building materials etc.

Figure 4. A SWOT analysis of strengths, weaknesses, opportunities, and threats for affordable housing developments

Sources: developed by the authors.

For testing the hypothesis about the influence of financing affordable housing on the economic growth, the impact of the share of housing owners due to housing loan or mortgage and the share of housing tenants with free or reduced rent on the change of gross domestic product per capita (GDP) were empirically confirmed and formalized. Table 1 shows the data of housing owners due to housing loans or mortgages from the sample of 25 EU countries for 2011-2019.

Table 1. Share of affordable housing owners due to housing loan or mortgage, %

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	23,0	26,4	26,4	25,3	25,7	25,2	24,3	25,5	24,9
Belgium	41,9	43,2	42,9	42,9	42,4	41,4	43,2	43,4	42,6
Czech Republic	18,1	18,0	18,2	18,2	18,2	19,4	20,7	21,0	21,9
Denmark	53,9	53,1	50,7	49,5	48,6	47,4	47,8	46,5	46,8
Estonia	16,7	18,0	18,9	19,4	19,4	19,5	20,0	21,7	22,8
Finland	41,9	42,2	42,6	43,0	42,4	42,0	42,3	42,0	41,5
France	29,4	29,9	31,8	31,3	31,1	31,0	30,9	31,8	31,8
Germany	28,1	28,0	27,6	26,6	26,2	26,2	25,7	25,6	25,8
Greece	15,7	15,2	15,6	13,3	14,1	13,9	15,7	14,2	12,7
Hungary	22,8	20,9	19,8	18,0	18,7	16,3	16,0	15,4	15,3
Ireland	34,6	34,9	35,5	34,3	33,1	32,4	31,8	32,4	31,3
Italy	15,6	16,1	17,2	17,3	16,8	15,9	13,6	13,0	13,7
Latvia	8,0	9,5	9,1	9,4	9,8	9,8	10,8	12,3	13,1
Lithuania	6,7	6,6	7,7	7,6	8,1	10,2	11,1	12,6	12,2
Luxembourg	40,0	42,6	45,6	42,5	42,8	43,3	42,7	41,9	41,8
Netherlands	59,6	59,9	60,0	59,2	60,1	61,0	60,7	60,5	60,4
Norway	63,1	64,9	64,9	65,6	61,7	62,2	60,5	60,1	60,4
Poland	8,4	9,6	10,2	10,8	10,9	11,6	11,1	11,3	12,2
Portugal	34,0	33,8	34,6	35,5	36,5	36,7	37,3	36,3	36,2
Slovak Republic	8,2	9,6	9,6	10,9	11,3	11,8	16,1	18,6	20,6
Slovenia	7,7	8,4	9,6	10,3	10,8	10,6	12,0	12,1	12,7
Spain	32,0	31,8	32,0	32,1	31,2	30,9	29,5	29,4	28,4
Sweden	61,9	57,5	58,0	57,7	59,1	54,8	52,2	51,7	51,4
Switzerland	39,4	39,3	39,8	39,9	38,9	38,5	37,4	38,3	38,0
United Kingdom	41,9	38,3	37,4	37,2	36,1	35,5	38,0	37,5	37,5

Sources: developed by the authors on the basis of (Eurostat, 2019).

Table 2 presents the data of housing tenants with free or reduced rent from the sample of 25 EU countries for 2011-2019.

Table 2. Share of housing tenants with free or reduced rent, %

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	18,5	16,4	15,5	15,7	14,7	15,3	14,9	14,9	14,5
Belgium	9,3	9,1	9,2	8,7	8,9	8,7	8,8	8,3	8,4
Czech Republic	6,9	6,4	3,9	4,5	5,6	5,8	6,0	5,6	5,3
Denmark	13,6	12,9	0,1	0,1	0,1	0,1	0,1	0,1	0,0
Estonia	14,0	14,7	15,6	14,5	14,7	14,5	14,2	13,5	13,8
Finland	15,7	15,6	15,7	16,0	15,3	15,4	15,2	14,8	14,7
France	21,8	16,8	16,1	15,7	16,1	16,0	16,4	16,3	16,4
Germany	6,7	8,1	8,5	8,0	8,2	8,4	8,6	7,7	7,8
Greece	6,9	5,9	5,3	6,0	5,1	5,3	5,8	5,2	4,6
Hungary	7,7	7,1	7,9	8,0	8,9	9,3	9,3	9,1	4,2
Ireland	14,9	14,9	13,7	15,3	15,5	17,1	18,0	17,7	22,3
Italy	13,7	12,5	12,7	12,6	11,7	11,0	9,5	8,8	8,7
Latvia	9,5	10,7	10,5	10,4	11,2	10,4	10,5	10,9	12,0
Lithuania	6,6	6,7	6,4	8,8	9,2	8,3	8,7	8,9	8,6
Luxembourg	4,8	4,6	5,2	5,5	5,1	4,6	4,5	5,4	6,3
Netherlands	0,5	0,4	0,4	0,4	0,5	0,7	0,8	1,0	0,8

Continued Table 2

Norway	5,5	6,1	6,4	6,4	6,3	6,1	5,9	2,0	2,4
Poland	14,5	13,6	12,0	12,3	11,8	12,1	11,5	11,7	11,6
Portugal	12,8	14,5	14,5	12,7	12,5	11,8	12,5	12,9	12,9
Slovak Republic	1,7	1,8	2,0	1,8	1,5	1,6	1,5	1,2	1,4
Slovenia	17,0	18,3	17,7	17,4	19,0	19,6	19,0	18,9	19,3
Spain	7,8	8,3	9,1	9,0	9,1	8,4	8,5	8,4	8,0
Sweden	0,3	0,2	0,3	0,5	0,3	0,8	0,8	0,9	0,9
Switzerland	4,7	4,5	4,2	6,3	7,5	7,2	7,8	6,4	5,6
United Kingdom	18,8	18,0	18,1	18,0	18,3	18,6	17,9	5,1	5,1

Sources: developed by the authors on the basis of (Eurostat, 2019).

Table 3 presents the data of GDP at market prices (percentage change on previous period, per capita, annual).

Table 3. GDP at market prices (percentage change on previous period, per capita, annual)

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	2,6	0,2	-0,6	-0,1	0,0	0,7	1,8	2,1	1,0
Belgium	0,4	0,1	0,0	1,1	1,5	0,8	1,2	1,3	1,2
Czech Republic	2,0	-0,9	-0,1	2,1	5,2	2,3	4,9	2,8	1,9
Denmark	0,9	-0,1	0,5	1,1	1,6	2,4	2,2	1,7	2,4
Estonia	7,7	3,5	1,7	3,3	2,0	3,0	5,5	4,1	4,5
Finland	2,1	-1,9	-1,4	-0,8	0,2	2,5	3,0	1,2	1,2
France	1,7	-0,2	0,1	0,5	0,7	0,7	1,9	1,5	1,2
Germany	3,9	0,2	0,2	1,8	0,6	1,4	2,2	1,0	0,3
Greece	-10,0	-6,6	-2,0	1,4	0,2	-0,1	1,5	1,8	2,0
Hungary	2,2	-0,9	2,1	4,5	4,1	2,4	4,6	5,5	4,7
Ireland	0,2	-0,3	0,7	7,9	24,0	0,9	7,9	7,2	4,1
Italy	0,3	-3,4	-2,3	-0,2	0,9	1,5	1,8	1,1	0,5
Latvia	8,5	5,5	3,4	2,0	4,9	3,3	4,2	4,8	2,7
Lithuania	8,5	5,2	4,6	4,4	3,0	3,8	5,8	4,9	4,6
Luxembourg	0,2	-2,6	1,0	1,9	2,3	1,9	-0,4	1,1	0,2
Netherlands	1,1	-1,4	-0,4	1,1	1,5	1,7	2,3	1,8	1,0
Norway	-0,3	1,4	-0,2	0,8	0,9	0,2	1,5	0,5	0,2
Poland	4,7	1,3	1,2	3,4	4,3	3,2	4,8	5,4	4,8
Portugal	-1,6	-3,7	-0,4	1,3	2,2	2,3	3,8	3,0	2,5
Slovakia	3,5	1,7	0,5	2,5	4,7	2,0	2,8	3,5	2,4
Slovenia	0,7	-2,8	-1,2	2,7	2,1	3,1	4,7	4,1	2,3
Spain	-1,2	-3,0	-1,1	1,7	3,9	2,9	2,8	2,0	1,1
Sweden	2,4	-1,3	0,3	1,6	3,4	0,8	1,2	0,8	0,3
Switzerland	1,0	0,1	0,7	1,2	0,5	0,9	0,6	2,3	0,4
United Kingdom	0,4	0,8	1,5	2,1	1,6	0,9	1,1	0,6	0,8

Sources: developed by the authors on the basis of (Eurostat, 2019b).

For empirically confirming or rejecting the hypothesis, the corresponding Pearson or Spearman correlation coefficients (Pearson, 1896; Spearman, 1904) were calculated based on the Shapiro-Wilk test

of the preliminary verification of the subordination of the studied parameters to the normal distribution (Shapiro and Wilk, 1965) (Table 4).

Table 4. The results fragment of Shapiro-Wilk test of the subordination verification of affordable housing indices to the normal distribution

Country	Variable	W	V	z	Prob > z
Austria	AHO	0.88136	1.743	0.985	0.16228
	RAH	0.80538	2.859	1.986	0.02352 *
Belgium	AHO	0.90924	1.333	0.494	0.31060
	RAH	0.96246	0.552	-0.929	0.82366
Czech Republic	AHO	0.81522	2.715	1.875	0.03042 *
	RAH	0.96726	0.481	-1.128	0.87038
Denmark	AHO	0.89745	1.507	0.714	0.23761
	RAH	0.68577	4.617	3.100	0.00097 *
Estonia	AHO	0.96008	0.586	-0.839	0.79918
	RAH	0.96208	0.557	-0.915	0.81982
Finland	AHO	0.98794	0.177	-2.438	0.99261
	RAH	0.93157	1.005	0.009	0.49642
France	AHO	0.86582	1.971	1.222	0.11086
	RAH	0.55384	6.555	4.034	0.00003 *
Germany	AHO	0.86034	2.052	1.301	0.09671
	RAH	0.87033	1.905	1.155	0.12396
Greece	AHO	0.93842	0.905	-0.165	0.56539
	RAH	0.94682	0.781	-0.399	0.65524
Hungary	AHO	0.92119	1.158	0.248	0.40220
	RAH	0.73707	3.863	2.666	0.00384 *

*Note: *– beyond the normal distribution; AHO – affordable housing owners with mortgage or loan, RAH - tenants, rent affordable housing at reduced price or free.*

Sources: developed by the authors using STATA 14.2 software.

Pearson coefficient was used in case of subordination (test result above 0,05), Spearman – if the indices did not subordinate to the normal distribution (test result below 0,05). To approximate the results to the realities of countries economic development, possible time lags of the investigated impact were determined to increase the adequacy of the calculated correlation coefficients.

Table 5 summarizes the results of assessing the significance, direction, and strength of changes in the share of affordable housing owners due to housing loans or mortgages and the share of housing tenants with free or reduced rent on the dynamics of GDP at market prices per capita.

The effect is not statistically significant with a weak correlation between indicators, as evidenced by the correlation coefficient less than 0,3. Accordingly, it is statistically significant with medium (0,3-0,5), high (0,5-0,7), and very high (above 0,7) correlation. The direction of influence is determined by the sign of the coefficient: inverse – negative, direct – positive. Thus, correlation analysis allowed empirically confirming the relationship, assessing the statistical significance, direction, strength, and determining the time lags through which this effect becomes maximum, namely:

– the impact of changes in the share of affordable housing owners with mortgage or loan on GDP per capita is statistically significant in 22 from 25 countries. By the nature of the relationship, it is direct in 18 and reversed in 7 countries, in particular, with very high strength in Austria and Portugal (without a time lag), Denmark, Slovenia, Hungary, and Switzerland (with a one-year time lag), Poland (with a two-year time lag), Great Britain, Italy, and Finland (with a three-year time lag); with high strength – in Luxembourg, the Netherlands, and France (with a one-year time lag), in Estonia (with a two-year time lag), in Greece,

Spain, Latvia, Norway, and the Czech Republic (with a three-year time lag); with medium strength – in Sweden (without a time lag), Ireland (with a two-year time lag) and Lithuania (with a three-year time lag);

Table 5. The significance, direction, and strength of the impact of financing affordable housing on the dynamics of GDP at market prices per capita

Country	Affordable housing owners due to housing loan or mortgage (AHO), %		Housing tenants with free or reduced rent (RAH), %	
	r	t	r	t
Austria	-0.7940	0	-0.8286	3
Belgium	0.2804 *	2	-0.7366	0
Czech Republic	-0.5768	3	-0.7129	2
Denmark	-0.9514	1	-0.8575	3
Estonia	0.6840	2	-0.6478	0
Finland	0.8839	3	-0.5246	1
France	0.5581	1	0.8824	0
Germany	-0.2593 *	1	0.6507	1
Greece	-0.6702	3	-0.8411	1
Hungary	-0.8643	1	0.7714	3
Ireland	0.4080	2	-0.4868	2
Italy	0.9502	3	-0.5928	1
Latvia	0.6599	3	0.8413	3
Lithuania	0.3342	3	0.7714	3
Luxembourg	0.6843	1	0.3965	1
Netherlands	0.5231	1	0.6506	0
Norway	0.5619	3	0.4412	1
Poland	0.9042	2	-0.7537	0
Portugal	0.9583	0	-0.8827	2
Slovak Republic	0.2963 *	1	-0.6415	0
Slovenia	0.8263	1	0.7303	2
Spain	0.6000	3	0.9250	2
Sweden	0.3883	0	-0.6336	3
Switzerland	-0.5691	1	0.3957	1
United Kingdom	0.9390	3	0.5798	0

*Note: * – the influence is not statistically significant in the estimated period with a 0–3 years lag; r – correlation coefficient (Pearson or Spearman); t – time lag when correlation coefficient is the maximum in the calculation interval.*

Sources: developed by the authors using STATA 14.2 software.

– the impact of changes in the share of the tenants, rent housing at reduced prices or free, on GDP per capita is statistically significant in all sample countries. By the nature of the relationship, it is direct in 12 and reversed in 13 countries, in particular, with very high strength in Belgium, Poland, and France (without a time lag), Greece (with a one-year time lag), Spain, Portugal, Slovenia, and the Czech Republic (with a two-year time lag), Austria, Denmark, Latvia, Lithuania, and Hungary (with a three-year time lag); with high strength – in Great Britain, Estonia, the Netherlands, and the Slovak Republic (without a time lag), Italy, Germany, and Finland (with a one-year time lag), and Sweden (with a three-year time lag); with medium strength – in Luxembourg, Norway, and Switzerland (with a one-year time lag) and Ireland (with a two-year time lag).

Therefore, governments should continue improving their policies for financing social and affordable housing, especially mortgage lending, compared to free or subsidized rental housing programs.

To confirm the above hypothesis and formalize the impact, Arellano-Bond linear dynamic panel-data regression model (Arellano–Bond estimation) was built using STATA 14.2 software. The additional control variables were introduced to build the model, in particular, the following:

– foreign direct investment (net inflows) (Table 6):

Table 6. Foreign direct investment (net inflows, % of GDP)

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	5,33	1,27	0,10	0,39	-2,09	-7,32	3,24	-6,27	-1,82
Belgium	31,31	2,38	-5,68	-2,84	-4,22	12,09	-7,42	-7,82	-5,43
Czech Republic	1,82	4,52	3,48	3,86	0,90	5,53	5,14	3,34	3,72
Denmark	3,94	-5,00	0,20	1,86	0,61	2,49	1,09	2,28	-2,14
Estonia	4,78	7,71	4,34	6,65	-3,10	3,82	6,41	3,96	9,41
Finland	-2,18	1,91	-1,82	6,28	7,19	2,13	6,72	-3,83	5,86
France	1,54	1,23	1,12	0,20	1,76	1,33	1,38	2,57	1,88
Germany	2,60	1,86	1,80	0,50	1,86	1,87	3,21	4,24	1,87
Greece	0,38	0,68	1,23	1,14	0,65	1,38	1,69	1,85	2,38
Hungary	7,58	8,42	-2,65	9,28	-4,21	54,24	-8,49	-40,41	19,61
Ireland	9,98	25,82	29,68	37,68	81,32	34,25	17,37	17,60	-12,00
Italy	1,50	0,00	0,91	0,79	0,72	1,37	0,57	2,12	1,56
Latvia	5,31	3,81	3,25	3,34	2,98	1,20	3,78	1,25	3,11
Lithuania	4,32	1,58	1,65	0,74	2,50	2,74	2,90	2,42	2,88
Luxembourg	14,74	44,99	25,93	28,58	21,65	52,56	-10,62	-23,63	-16,06
Netherlands	36,73	28,57	37,48	13,20	42,15	30,49	26,77	-39,55	3,93
Norway	2,07	5,48	-0,26	0,65	1,89	-5,06	1,48	-1,30	3,16
Poland	3,51	1,48	0,15	3,65	3,15	3,88	2,23	3,00	2,42
Portugal	4,01	9,89	6,96	5,25	0,64	3,57	4,82	3,23	3,46
Slovak Republic	5,48	1,88	1,02	-0,36	1,72	5,29	4,42	2,13	2,20
Slovenia	1,70	0,07	0,21	2,04	4,02	3,23	2,46	2,84	3,16
Spain	1,81	1,57	3,50	2,41	1,93	3,59	2,40	3,89	1,06
Sweden	1,22	0,77	0,22	-1,48	2,03	3,03	5,18	-0,17	3,17
Switzerland	2,97	5,98	-3,62	2,96	17,47	24,88	21,00	-20,85	5,31
United Kingdom	1,02	1,73	1,96	1,92	1,55	12,06	4,70	2,84	0,08

Sources: developed by the authors based on (Word Bank, 2019a).

– total economically active labour force (it is a population part ages 15-64) (Table 7):

Table 7. Total economically active labour force

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	74,77	75,32	75,64	75,42	75,51	76,18	76,33	76,63	76,86
Belgium	66,62	66,79	67,44	67,72	67,68	67,73	68,06	68,63	69,06
Czech Republic	70,45	71,48	72,80	73,53	74,13	75,19	76,11	76,79	76,86
Denmark	77,56	76,90	76,30	76,42	76,86	77,43	77,89	78,20	79,01
Estonia	74,84	74,97	75,27	75,40	76,80	77,63	78,89	79,12	78,90
Finland	74,67	74,96	74,91	75,21	75,63	75,78	76,64	77,79	78,15
France	70,05	70,58	71,01	70,94	71,23	71,44	71,60	72,01	71,82
Germany	77,44	77,36	77,70	77,71	77,57	77,81	78,06	78,49	79,08
Greece	67,41	67,69	67,76	67,62	68,02	68,32	68,34	68,39	68,70
Hungary	62,29	63,49	64,33	66,60	68,37	69,95	71,09	71,93	72,57
Ireland	71,23	71,24	71,97	72,08	72,28	72,85	72,91	73,23	73,51

Continued Table 7

Italy	62,15	63,57	63,38	63,95	64,07	64,98	65,49	65,71	65,82
Latvia	73,13	74,67	74,18	74,51	75,71	76,45	77,27	78,11	77,74
Lithuania	71,51	71,99	72,55	73,75	74,09	75,55	76,10	77,55	78,24
Luxembourg	67,69	69,05	69,27	70,08	70,66	69,61	70,00	70,77	71,66
Netherlands	78,05	78,90	79,28	79,00	79,66	79,73	79,79	80,31	80,94
Norway	77,67	78,06	77,98	77,88	78,18	77,97	77,23	77,77	78,17
Poland	65,98	66,71	67,21	68,08	68,38	69,10	69,85	70,41	70,85
Portugal	73,55	73,38	73,05	73,30	73,60	73,97	74,91	75,39	75,77
Slovak Republic	68,77	69,50	69,90	70,27	70,95	71,95	72,20	72,46	72,72
Slovenia	70,77	70,89	70,79	70,99	71,65	71,55	74,24	75,14	75,13
Spain	73,95	74,29	74,29	74,22	74,38	74,38	74,16	74,06	74,17
Sweden	79,70	80,07	80,99	81,53	81,88	82,25	82,74	82,97	83,13
Switzerland	82,00	82,22	82,38	82,92	83,38	83,93	83,96	84,17	84,21
United Kingdom	75,35	75,87	76,25	76,55	76,79	77,16	77,41	77,73	78,01

Sources: developed by the authors based on (World Bank, 2019c).

– Inflation (GDP deflator) (Table 8):

Table 8. Inflation, GDP deflator (annual %)

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	1,83	2,05	1,62	2,18	2,30	1,85	0,86	1,71	1,73
Belgium	1,81	1,96	1,27	0,98	1,33	1,92	1,83	1,63	1,66
Czech Republic	-0,02	1,45	1,36	2,58	0,99	1,14	1,31	2,57	3,86
Denmark	0,64	2,38	0,89	1,03	0,43	0,25	1,18	0,58	0,74
Estonia	5,39	4,02	4,04	2,95	1,12	2,27	3,11	4,18	3,23
Finland	2,62	2,97	2,56	1,63	1,62	0,09	0,58	1,88	1,78
France	0,95	1,16	0,78	0,58	1,14	0,52	0,52	0,95	1,23
Germany	1,07	1,50	1,96	1,88	1,85	1,33	1,35	1,67	2,19
Greece	0,80	-0,37	-2,35	-1,83	-0,35	-0,24	0,60	0,55	-0,38
Hungary	1,93	2,89	2,83	3,71	2,78	1,35	3,99	4,82	4,81
Ireland	1,50	2,28	1,23	-0,11	7,79	-0,30	1,13	0,82	1,52
Italy	1,61	1,55	1,15	0,91	0,93	1,13	0,73	1,03	0,71
Latvia	6,37	3,60	1,64	1,92	0,00	0,86	2,97	3,90	2,43
Lithuania	5,35	2,73	1,28	0,83	0,06	1,58	4,24	3,53	2,81
Luxembourg	4,77	2,56	1,70	2,74	0,18	0,77	1,72	2,51	3,39
Netherlands	0,19	1,45	1,28	0,25	0,77	0,45	1,26	2,44	2,96
Norway	6,72	3,34	2,56	0,29	-2,85	-1,47	3,95	5,78	-0,62
Poland	3,27	2,36	0,30	0,52	0,97	0,31	1,86	1,20	3,15
Portugal	-0,27	-0,39	2,25	0,70	2,02	1,72	1,51	1,81	1,68
Slovak Republic	1,67	1,26	0,52	-0,19	-0,22	-0,51	1,21	2,04	2,50
Slovenia	1,04	0,48	1,60	0,46	1,01	0,87	1,48	2,16	2,26
Spain	-0,02	-0,11	0,40	-0,22	0,55	0,32	1,30	1,19	1,39
Sweden	1,09	1,00	0,93	1,74	2,12	1,53	2,14	2,40	2,70
Switzerland	0,34	-0,17	0,03	-0,63	-0,63	-0,60	-0,57	0,23	0,40
United Kingdom	2,04	1,66	1,90	1,83	0,58	2,14	1,89	2,14	1,87

Sources: developed by the authors on the basis of (World Bank, 2019b).

– Rent Price Index (Table 9):

Table 9. Rent Price Indices

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	85,6	89,3	92,1	95,8	100,0	103,1	107,3	111,3	114,6
Belgium	94,3	95,7	97,0	99,0	100,0	100,9	102,0	103,1	104,2
Czech Republic	92,3	96,3	98,3	99,2	100,0	101,2	103,4	106,4	110,4
Denmark	92,1	94,5	96,5	98,1	100,0	101,3	103,0	104,2	105,1
Estonia	62,3	73,6	84,0	93,2	100,0	106,5	114,3	121,9	130,7
Finland	88,3	91,5	94,2	97,1	100,0	102,3	104,4	106,4	108,5
France	95,3	96,8	98,3	99,4	100,0	100,3	100,5	100,2	100,7
Germany	95,0	96,1	97,4	98,8	100,0	101,1	102,5	104,1	105,6
Greece	124,2	121,6	113,3	104,6	100,0	97,4	95,2	92,2	92,2
Hungary	92,2	95,8	97,7	98,0	100,0	105,2	108,4	113,9	124,6
Ireland	104,1	100,8	100,0	99,3	100,0	102,7	106,6	111,2	116,4
Italy	96,8	98,9	100,2	99,9	100,0	100,3	100,5	100,9	101,2
Latvia	81,7	89,5	94,6	99,3	100,0	98,6	98,3	102,4	107,1
Lithuania	64,6	71,2	75,8	84,7	100,0	110,4	110,8	117,2	126,2
Luxembourg	94,8	96,1	97,4	98,4	100,0	100,9	102,0	103,3	104,7
Netherlands	87,3	89,3	92,6	96,8	100,0	102,1	103,9	106,0	108,6
Norway	90,2	91,9	94,7	97,3	100,0	101,9	104,1	105,9	107,8
Poland	93,8	96,2	97,6	98,7	100,0	101,3	104,3	108,4	113,7
Portugal	91,7	93,6	94,7	98,9	100,0	101,7	102,7	104,7	108,0
Slovak Republic	99,1	99,7	100,0	100,0	100,0	100,2	100,6	100,8	101,4
Slovenia	101,5	99,8	98,8	98,1	100,0	101,6	107,0	113,6	118,4
Spain	100,8	101,4	101,2	100,5	100,0	99,9	100,3	101,6	103,2
Sweden	92,4	94,7	96,9	98,5	100,0	100,9	101,7	102,6	104,2
Switzerland	97,0	97,6	98,0	99,2	100,0	100,3	101,4	101,8	102,3
United Kingdom	89,7	92,7	95,0	97,2	100,0	101,7	102,7	103,2	103,9

Sources: developed by the authors on the basis of (OECDStat, 2019b).

Due to the dynamic regression model (Arellano-Bond linear dynamic panel-data estimation), it was possible to study the evolution of economic phenomena, avoiding the shift of aggregation. The linear dynamic model of panel data estimation includes time lags of dependent variables as covariates and contains unnoticed effects at the panel, fixed or random. Thus, this regression model helps to consider how a share of affordable housing owners with mortgage or loan or the share of tenants, rent affordable housing at the reduced price or free, of the past period affects the current state. The model's dynamism is achieved by introducing lag variables, and the method of instrumental variables of the GMM method is used in this model to reach adequate estimates.

Table 10 presents the impact assessment results of the annual share change of affordable housing owners with the mortgage or housing loan on the change of GDP at market prices per capita.

Modeling this impact based on Arellano-Bond panel data estimation, the aspect that some regressors are not fully exogenous was considered. They could be affected by past and current variable values (GDP). Only the total economically active labor force indicator could be considered a fully exogenous variable in the model above. Other ones were endogenous.

The level of significance (Prob > chi2 = 0.0000) and p-value of investigated indicators (less than 5%) indicated model adequacy. To confirm the model quality, the Sargan test of overidentifying restrictions was also checked. The test results are below:

H0: overidentifying restrictions are valid.

chi2(78) = 103.8981

Prob > chi2 = 0.1267

Table 10. The results of the impact assessment of the share change of affordable housing owners with mortgage or loan on the change of GDP at market prices per capita based on dynamic panel-data estimation

GDP		Coef.	Std. Err.	z	P> |z|	[95% Conf. Interval]	
GDP	L1	.0244638	.0781687	-0.31	0.754	-.1776717	.1287441
	L2	-.15925	.0653808	-2.44	0.015	-.287394	-.0311061
AHO		-.2938763	.1664109	-1.77	0.077	-.6200358	.0322831
	L1	-.1920722	.2149844	-0.89	0.372	-.6134339	.2292895
	L2	.4378023	.1721164	2.54	0.011	.1004602	.7751443
NIFI		.0471834	.0124141	3.80	0.000	.0228521	.0715146
	L1	.0002443	.0139604	0.02	0.986	-.0271175	.0276062
	L2	.0394836	.0200037	1.97	0.048	.0002771	.0786902
I		.5993665	.1327827	4.51	0.000	.3391172	.8596157
L		.3260738	.1491295	2.19	0.029	.0337854	.6183622
Const.		21.69408	11.28678	-1.92	0.050	-43.81575	.4276014

Wald chi2(11) = 54.08 Prob> chi2 = 0.0000

Note: GDP – gross domestic product at market prices per capita; AHO – share of affordable housing owners with mortgage or loan, NIFI – foreign direct investment (net inflows); I – Inflation (GDP deflator); L – total economically active labour force; L1, L2 – time lags; Const. – constant; Coef. – model coefficients estimate; Std. Err. – standard deviations; P – level of significance; Conf. Interval – confidence interval.

Sources: developed by the authors using STATA 14.2 software

According to most scientists, the recommended p-value by the Sargan test must be greater than 5% or 10% (in such a case, the null hypothesis couldn`t be rejected). Thus, the regression equation constructed according to the Arellano-Bond dynamic model of panel-data estimation has the following form:

$$GDP\,it = 21{,}69 - 0{,}16GDP\,i,t-2 + 0{,}44AHOi,t-2 + 0{,}05NIFIit + 0{,}3Lit + 0{,}6Iit \quad (1)$$

The estimated coefficient β for the share of affordable housing owners with mortgage or loan (AHO) is statistically significant (mistake probability is 1,1%) and positive, determining a direct relationship between gross domestic product at market prices per capita (GDP) and the share of affordable housing owners with mortgage or loan (AHO).

Therefore, the hypothesis that an increase of 1% of the share of affordable housing owners due to housing loans or mortgages causes the rise in GDP per capita of an average of 0.44% with a two-year time lag was empirically confirmed.

Table 11 gives the impact assessment results of the share change of housing tenants with free or reduced rent on the change of GDP at market prices per capita.

The level of significance (Prob > chi2 = 0.0000) and p-value of investigated indicators (less than 5%) indicated the model adequacy. To confirm the model quality, Sargan test of overidentifying restrictions was also checked. The test results are below:

H0: overidentifying restrictions are valid.

chi2(78) = 90.89177

Prob > chi2 = 0.1508

According to most scientists, the recommended p-value by the Sargan test must be greater than 5% or 10% (in such a case, the null hypothesis is not rejected).

Table 11. The results of the impact assessment of the share change of tenants, rent affordable housing at reduced price or free, on the change of GDP at market prices per capita based on dynamic panel-data estimation

GDP		Coef.	Std. Err.	z	P> |z|	[95% Conf. Interval]	
GDP	L1	-.0653303	.076879	-0.85	0.395	-.2160104	.0853498
	L2	-.191576	.0633004	-3.03	0.002	-.3156425	-.0675096
RAH		.073714	.0954064	0.77	0.440	-.1132791	.2607072
	L1	-.0649255	.1162684	-0.56	0.577	-.2928073	.1629563
	L2	-.4953982	.1712693	-2.89	0.004	-.8310798	-.1597167
NIFI		.04087	.012436	3.29	0.001	.0164958	.0652442
	L1	-.0066401	.0133042	-0.50	0.618	-.0327159	.0194356
	L2	.037921	.0194875	1.95	0.052	-.0002738	.0761158
I		.5816483	.1299675	4.48	0.000	.3269165	.83638
L		.6650614	.2457304	2.71	0.007	.1834386	1.146684
RPI		-.0802554	.0401526	-2.00	0.046	-.158953	-.0015578
Const.		35.2418	15.41126	-2.29	0.022	-65.44731	-5.036291
Wald chi2(11) = 66.55 Prob> chi2 = 0.0000							

Note: GDP – gross domestic product at market prices per capita; RAH – share of tenants, rent affordable housing at reduced price or free; NIFI – foreign direct investment (net inflows); I – Inflation (GDP deflator); L – total economically active labour force; RPI – Rent Price Indices; L1, L2 – time lags; Const. – constant; Coef. – model coefficients estimate; Std. Err. – standard deviations; P – level of significance; Conf. Interval – confidence interval.

Source: compiled by the authors using STATA 14.2 software

Thus, the regression equation constructed according to the Arellano-Bond dynamic model of panel-data estimation has the following form:

$$GDP\,it = 35{,}24 - 0{,}19GDP\,i,t-2 - 0{,}5RAHi,t-2 + 0{,}04NIFIit + +0{,}7L\,it - 0{,}1RPIit + 0{,}6I\,it \quad (2)$$

The estimated coefficient β for the share of tenants, rent affordable housing at a reduced price or free (RAH), is statistically significant (mistake probability is 0,4%) and negative, determining an inverse relationship between gross domestic product at market prices per capita (GDP) and the share of tenants, rent affordable housing at a reduced price or free (RAH). So, the hypothesis that an increase of 1% of the share of tenants, rent affordable housing at the reduced price or free, causes the decrease of GDP per capita of an average of 0.5% with a two-year time lag was empirically confirmed. Besides, an increase of 1% of the Rent Price Indices (at market prices) causes the decrease of GDP per capita of an average of 0.1% with a two-year lag. Thus, regression analysis also confirmed that governments should prefer affordable mortgage lending programs over reduced or free rent.

Conclusions. During the investigation of marketing and management fundamentals of providing affordable housing in connection with funding aspects, key trends of housing market segmentation were analyzed based on cross-country analysis (the sample from 25 EU countries for 2011–2019), considering the distribution of the population by tenure status and analytical house prices indicators. The ways to promote more affordable housing by public and local authorities, private investors in affordable housing, and specific social and affordable housing market organizations were described. Main organizational forms of providing affordable and social housing were also characterized. Particular attention was paid to strategic planning for affordable and social housing, especially housing business plans or affordable housing strategy development, as a priority step in marketing, management, and financial providing affordable housing. A SWOT analysis for affordable housing developments was used to show strengths, weaknesses, opportunities, and threats to the affordable housing market.

To empirically confirm some relevant strengths, the impact of indicators of financial providing of affordable housing was formalized based on correlation analysis (calculation of Pearson or Spearman coefficient with time lags based on results of Shapiro-Wilk testing). Thus, the impact of changes in the share of affordable housing owners with mortgage or loan on GDP per capita is statistically significant in 22 from 25 countries. By the nature of the relationship, it is direct in 18 and reversed in 7 countries, in particular, with very high strength in Austria and Portugal (without a time lag), Denmark, Slovenia, Hungary, and Switzerland (with a one-year time lag), Poland (with a two-year time lag), Great Britain, Italy, and Finland (with a three-year time lag); with high strength – in Luxembourg, the Netherlands, and France (with a one-year time lag), in Estonia (with a two-year time lag), in Greece, Spain, Latvia, Norway, and the Czech Republic (with a three-year time lag); with medium strength – in Sweden (without a time lag), Ireland (with a two-year time lag) and Lithuania (with a three-year time lag);

The impact of changes in the share of the tenants, rent housing at reduced prices or free, on GDP per capita is statistically significant in all sample countries. By the nature of the relationship, it is direct in 12 and reversed in 13 countries, in particular, with very high strength in Belgium, Poland, and France (without a time lag), Greece (with a one-year time lag), Spain, Portugal, Slovenia, and the Czech Republic (with a two-year time lag), Austria, Denmark, Latvia, Lithuania, and Hungary (with a three-year time lag); with high strength – in Great Britain, Estonia, the Netherlands, and the Slovak Republic (without a time lag), Italy, Germany and Finland (with a one-year time lag), and Sweden (with a three-year time lag); with medium strength – in Luxembourg, Norway and Switzerland (with a one-year time lag) and Ireland (with a two-year time lag). To determine and formalize these effects, Arellano-Bond linear dynamic panel-data regression models were built by checking the Sargan test of overidentifying restrictions using STATA 14.2 software. The dynamic model made it possible to consider how the share of affordable housing owners due to housing loans, mortgages, or the share of housing tenants with free or reduced rent and the value of GDP of the previous period affects the current situation. The hypothesis that an increase of 1% of the share of affordable housing owners due to housing loans or mortgages causes the rise in GDP per capita of an average of 0.44% with a two-year time lag was empirically confirmed. An increase of 1% of the share of housing tenants with free or reduced rent causes the decrease of GDP per capita of an average of 0.5% with a two-year time lag. It was substantiated that governments should continue and improve their policies for financing social and affordable housing. At the same time, they should prefer affordable mortgage lending programs over programs of reduced or free rental housing.

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References

Am Marcel, D. T. (2019). Impact of the Foreign Direct Investment on Economic growth on the Re-public of Benin. *Financial Markets, Institutions and Risks*, 3(2), 69-78. [Google Scholar] [CrossRef]

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies*, *58*(2), 277-297. [GoogleScholar] [CrossRef]

Bagmet, K. V., & Haponova, O. (2018). Assessing the Impact on Social Sector: A Macroeconomic Approach. *SocioEconomic Challenges*, 3(2), 103-108. [Google Scholar] [CrossRef]

Bagmet, K., & Obeid, H. (2017). Financing social protection in Ukraine and the European Union: current situation and prospects. *SocioEconomic Challenges*, 1(1), 54-59. [Google Scholar] [CrossRef]

Bhowmik, D. (2020). Trends, Cycles and Seasonal Variations of Ukrainian Gross Domestic Product. *Financial Markets, Institutions and Risks*, 4(3), 80-94. [Google Scholar] [CrossRef]

Bilan, Y., Vasylieva, T., Lyeonov, S., & Tiutiunyk, I. (2019). Shadow Economy and its Impact on Demand at the Investment Market of the Country. *Entrepreneurial Business and Economics Review*, 7 (2), 27-43. [Google Scholar] [CrossRef]

Bubny, P. (2017). Five Steps to Promoting Affordable Housing. Retrieved from [Link]

Clapham, D. F., Clark, W. A., & Gibb, K. (Eds.). (2012). *The Sage handbook of housing studies*. Sage. [Google Scholar]

Debrunner, G., & Hartmann, T. (2020). Strategic use of land policy instruments for affordable housing–Coping with social challenges under scarce land conditions in Swiss cities. *Land use policy*, *99*, 104993. [Google Scholar] [CrossRef]

Eurostat. (2019). Distribution of population by tenure status, type of household and income group – EU-SILC survey. Retrieved from [Link]

Eurostat. (2019b). Main GDP aggregates per capita. Eurostat data. Retrieved from [Link]

Ezebilo, E. E. (2020). Evaluation of construction, marketing and management in housing delivery by a private developer: evidence from Papua New Guinea. *Journal of Housing and the Built Environment*, *35*(3), 957-981. [Google Scholar] [CrossRef]

Harrison, D. (2020). 30 Things Municipalities Can Do to Promote More Affordable Housing. Retrieved from [Link]

Hochstenbach, C., & Ronald, R. (2020). The unlikely revival of private renting in Amsterdam: Re-regulating a regulated housing market. *Environment and Planning A: Economy and Space*, *52*(8), 1622-1642. [Google Scholar] [CrossRef]

Jafarzadeh, E., & Shuquan, H. (2019). The Impact of Income Inequality on the Economic Growth of Iran: An Empirical Analysis. *Business Ethics and Leadership*, 3(2), 53-62. [Google Scholar] [CrossRef]

Kamara, R. D. (2017). Creating Enhanced Capacity for Local Economic Development (LED) through Collaborative Governance in South Africa. *SocioEconomic Challenges*, 1(3), 98-115. [Google Scholar] [CrossRef]

National Housing Federation. (n.d.) What housing associations do. Retrieved from [Link]

OECD.Stat. (2019a). Real House Price Indices. Analytical house prices indicators. Retrieved from [Link]

OECD.Stat. (2019b). Rent Prices. Analytical house prices indicators. Retrieved from [Link]

Palienko, M., & Lyulyov, O. (2018). The impact of social factors on macroeconomic stability: empirical evidence for Ukraine and European Union countries. *SocioEconomic Challenges*, 2(1), 103-116. [Google Scholar] [CrossRef]

Pearson, K. (1896). VII. Mathematical contributions to the theory of evolution.—III. Regression, heredity, and panmixia. *Philosophical Transactions of the Royal Society of London. Series A, containing papers of a mathematical or physical character*, (187), 253-318. [Google Scholar]

PSN. (n.d.). State Policy Options for Promoting Affordable Housing. Progressive States Network. Retrieved from [Link]

Salvi del Pero, A., Adema, W., Ferraro, V., & Frey, V. (2016). Policies to promote access to good-quality affordable housing in OECD countries. *OECD Social, Employment and Migration Working Papers*, 176. [Google Scholar] [CrossRef]

Samoilikova, A., & Kunev, R. (2020). The Impact of Health Care Financing on the Economic Growth: EU Countries Analysis. *Health Economics and Management Review*, 2, 24-32. [Google Scholar] [CrossRef]

Sanchez, C. (2020). Poverty And Inequality in Access to Housing in Mexico City During Neoliberalism. *SocioEconomic Challenges*, 4(2), 31-43. [Google scholar] [CrossRef]

Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika*, *52*(3/4), 591-611. [Google Scholar] [CrossRef]

Spearman, C. E. (1904). The proof and measurement of association between two things. *American Journal of Psychology*, 15, 72–101. [Google Scholar] [CrossRef]

Stata. (n.d.) Arellano–Bond linear dynamic panel-data estimation. Retrieved from [Link]

The Corporation of the City of Greater Sudbury. Housing Services Strategic Plan 2011-2015. Retrieved from [Link]

Tiutiunyk, I. V. (2018). Determination of Priority Financial Instruments of Regional Sustainable Development. *International Journal of Ecology & Development*, 33 (3), 11-18. [Google Scholar]

Voss, W. (2012). Promoting affordable housing within market economy. In *Proceedings of the FIG Working Week 2012* (p. 18). Retrieved from [Link]

World Bank. (2019a). Foreign direct investment, net inflows (% of GDP). Retrieved from [Link]

World Bank. (2019c). Labor force participation rate, total (% of total population ages 15-64) (modeled ILO estimate). Retrieved from [Link]

World Bank. (2021b). Inflation, GDP deflator (annual %). Retrieved from [Link]

Zakharkin, O. O., Zakharkina, L. S., Pokhylko, S. V., & Kreshchik, O. S. (2019). Development of crowdfunding as an innovative method of social projects funding. *Financial and credit activity: problems of theory and practice*, 2 (29), 509-517. [Google Scholar]

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У статті досліджено передумови розвитку доступного житла на міжнародному рівні. Автори відмітили, що забезпечення доступним житлом має не лише соціально-етичне значення, але сприяє економічному зростанню, покращенню робочої сили, інноваційності, розвитку сталої та інклюзивної економіки. При цьому систематизація наукових напрацювань з означеної

проблематики засвідчила відсутність єдиного підходу до оцінки потреб у соціальному житлі. Таким чином, аналіз маркетингової політики, менеджменту та фінансового забезпечення доступного житла є актуальною тематикою. Головною метою статті є дослідження особливостей маркетингу, менеджменту та фінансового забезпечення доступного житла на основі аналізу міжнародного досвіду. Для досягнення поставленої мети, у роботі проаналізовано головні тенденції сегментації ринку житла з урахуванням цінових та демографічних факторів. Джерелами даних є статистичні бази Європейського Союзу, Світового банку та Організації економічного співробітництва та розвитку. У роботі висвітлено основні організаційні форми забезпечення доступного та соціального житла. Особливу увагу було приділено стратегічному плануванню доступного та соціального житла, житловому бізнес-плану та розробці стратегії доступного житла як пріоритетів маркетингу, управління та фінансового забезпечення доступного житла. Для визначення сильних та слабких сторін, а також можливостей та загроз на ринку доступного житла було проведено SWOT-аналіз досліджуваного житлового будівництва. Методологія даного дослідження заснована на кореляційному аналізі (розрахунок коефіцієнтів кореляції Пірсона або Спірмена залежно від результатів тесту Шапіро-Вілка з урахуванням часових лагів) та побудови динамічної моделі лінійної регресії оцінювання панелей даних Ареллано-Бонда з перевіркою тесту Саргана на валідність індикаторів та визначення обмежень. Емпіричне дослідження проведено на основі панельних даних, сформованих для вибірки з 25 країн-членів ЄС за 2011-2019 роки. Для практичної реалізації дослідження було застосовано інструментарій програмного забезпечення Excel 2010 та STATA 14.2. За результатами дослідження виявлено вплив окремих показників фінансового забезпечення доступного житла. Авторами побудовано динамічну модель, яка дозволила визначити яким чином власники доступного житла з іпотекою чи позикою або орендарі попереднього періоду впливають на поточну ситуацію (через введення лагових змінних і використання методу інструментальних змінних узагальненого методу моментів). Отримані результати дозволили емпірично підтвердити гіпотезу про те, що збільшення на 1% частки власників доступного житла з іпотекою чи позикою призводить до збільшення ВВП в ринкових цінах на душу населення в середньому на 0,4% (із дворічним часовим лагом). Збільшення на 1% частки орендарів, що винаймають доступне житло за зниженою ціною або безплатно, призводить до зменшення ВВП на душу населення в ринкових цінах в середньому на 0,5% (з дворічним часовим лагом). Результати дослідження дають підстави стверджувати, що державним урядам необхідно вдосконалити фінансову політику для сприяння розвитку соціального та доступного житла. Водночас необхідно віддавати перевагу програмам іпотечного кредитування за доступними цінами порівняно до програм зниженої або безплатної оренди житла. Отримані результати підтвердили, що маркетинг, управління та фінансове забезпечення є рушійними силами політичних та практичних ініціатив щодо доступного та соціального житла. Представлені рекомендації можуть бути корисними для науковців, державних та місцевих органів влади, приватних інвесторів та конкретних організацій на ринку соціального та доступного житла.

Ключові слова: доступні житлові забудови, маркетинг, оренда житла, просування доступного житла, ринок доступного житла, сегментація ринку, соціальне житло, стратегічне планування, фінансове забезпечення, SWOT-аналіз.