



FREE

POLICY

NETWORK

BRIEF SERIES

Oleksii Hamaniuk, Kyiv School of Economics  
Andrii Doshchyn, Kyiv School of Economics  
November 2020

# Do Condominiums Pay Less for Heating?

In Ukraine, a widely shared perception is that housing utility costs are too high. In this policy brief, we study if these costs can be alleviated by introducing a modern form of housing management practice, condominiums. We find that condominiums in old houses (built before 1991) pay 22% less for heating compared to old non-condominiums. Among new houses (built after 1991), we find that condominiums pay 29% less for heating. Considering the dynamics of condominium formation in 2018-2020, old houses do not show any significant immediate effect of condominium formation on heating costs relative to that of non-condominiums. However, condominium formation among new houses leads to a relative 18% decrease in heating costs. In addition, among condominiums in old houses, participation in an overhaul co-financing program is associated with a 15% lower heating bill. The immediate effect of the program in 2018-2020 is a 16% relative decrease in heating costs for old condominiums and 37% - for new ones.

## Heating costs and condominiums

In recent years, the cost of housing utilities has been a common concern among Ukrainians. According to a [recent survey](#), 80% of Ukrainians believe that tariffs on utilities are too high.

The form of housing management is a factor that could affect utility costs. Experiences from Slovakia, Hungary, Poland, and Romania in the 1990s suggest that state-owned housing maintenance companies are often associated with inefficient management. Residential buildings that are owned and managed collectively by its dwellers (hereafter referred to as condominiums) are more likely to choose a more efficient private housing maintenance company (Banks, O'Leary et. al., 1996). For instance, in Slovakia's second-largest city, Kosice, one-third of houses that were privatized in the 1990s chose private maintenance companies with competitive prices. Residents perceived the services as "far more effective" (ibid).

This brief summarizes our analysis of the relationship between heating costs and the form of housing management in Ukraine. Analyzing a large sample of houses in Kyiv, we show that condominiums are associated with lower heating costs, both among the older houses, built before Ukrainian independence in 1991, and among newer houses.

### Types of housing management practices in Ukraine

The different housing management practices in Ukraine can be roughly divided into three types. The most commonly used practice is when housing maintenance is carried out by a municipally owned company (commonly referred to as ZhEK – "zhilischno-eksploatacionnaja kontora", housing maintenance office). Usually, houses that have the ZhEK-type management were built before Ukrainian independence and

have kept this practice since Soviet times. The second practice is when housing maintenance is done by a private company affiliated with the building developer. This management type is usually used by houses built after Ukrainian independence that did not form condominiums. These two practices are similar in the sense that dwellers are not directly involved in the decision-making, all decisions are made by the municipal or private company, respectively.

The third type of housing management practice, relatively new for Ukraine, is condominium ownership (the Ukrainian term for it is ОСББ, translated as "Association of Co-owners of Multi-Apartment House"). In a condominium, unlike in the previous two types, the house is managed collectively by the dwellers; in particular, they have the freedom to choose and/or change utility providers, invest in major overhaul, and participate in co-financing programs.

### Houses with condominiums pay less for heating

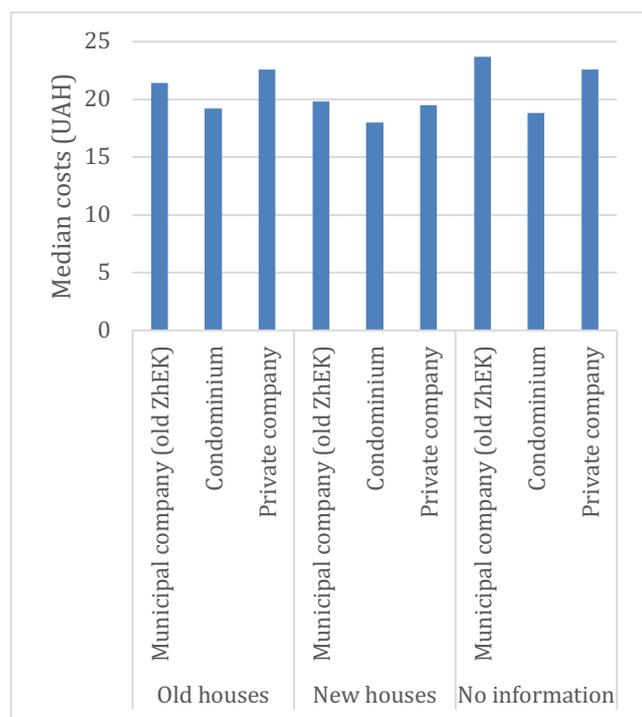
In our analysis, we use monthly data on housing costs between 2018 and 2020 collected from the Ukrainian municipal enterprise [Kyivteploenergo](#). The data covers more than 70% of residential buildings in Kyiv and includes information on heating costs per square meter, whether or not the house is a condominium, and other house-characteristics (including the source of heating production; the presence of the meter; type of the meter number of service days per month; and share of heat consumption by legal entities).

In addition, we have information on the year of building construction retrieved from the real estate portal [LUN](#), and condominium formation date between 2018-2020, as well as data on house participation in overhaul co-financing programs obtained from the Kyiv state administration.

Our final sample contains 7957 houses. Since we only are interested in apartment housing, we exclude residential buildings with an area below 500 m<sup>2</sup>, which would normally correspond to a

small private house (these constitute only a small part of our sample). The share of condominiums in the sample is 11%, the share of houses with ZhEK is 81% and the share of houses managed by private companies is 8%.

Figure 1. Median costs for heating per m<sup>2</sup> across housing management types and house age.



Source: Authors' calculations. Old houses are those built before 1991, the year of Ukrainian independence, and new houses are built after 1991.

Figure 1 provides preliminary evidence towards our hypothesis, showing that the median heating costs are lower in condominiums, independent of the year of construction.

In our first econometric model, we use an OLS-approach to compare utility costs across different types of housing and management models, while controlling for a number of observable characteristics. We find that condominiums in old houses pay 22% less for heating than old non-condominium. Similarly, we find that condominiums in new houses pay 29% less for heating compared to new non-condominiums.

The lower heating costs observed in condominiums may have several explanations:

- First, condominium-type management could be more flexible in its response to weather conditions. Considering that they are profit-maximizing, heating providers in Ukraine tend to overheat houses during the heating season; it could be that condominiums reduce consumption of heating on the warmer days to a greater extent than other houses. In other words, condominiums could increase the efficiency of heating use.
- Second, it could be that condominiums have lower heating costs because they improve energy efficiency, for example, by installing individual heating points (an automatized unit transferring heat energy from external heat networks to the house heating, hot water supply, ventilation, etc.), new windows, or even insulating the house.

### Is there an immediate effect?

The next step in our econometric analysis is to study the effect of condominium formation during 2018-2020. Here, we investigate whether non-condominium houses that became condominiums experienced changes in heating costs by utilizing a fixed-effects regression model. This approach not only allows us to assess the immediate effect of condominium formation but also controls for unobservable house-specific characteristics that are constant over time, such as differences in building materials.

For new houses, we find that condominium formation decreases heating costs by 18% compared to other new houses. For old houses, we find that the corresponding effect is statistically insignificant.

This estimation only evaluates the effect of condominium formation in a relatively short timeframe, between 2018 and 2020. While the data coverage does not allow us to give a precise quantitative assessment for a long-run effect, we argue that the positive impact of condominium formation on heating costs could potentially be higher in the longer-run. Indeed, our previous

OLS estimation assesses the average utility costs for all condominiums in the sample (including those formed prior to 2018). It shows that the gap in heating costs between all condominiums and non-condominiums is higher than the corresponding gap derived from our fixed-effects estimation (22% for the old houses and 29% - for the new ones). While this difference in results can be driven by several reasons (e.g., fixed effect estimation taking into account unobservable house-specific characteristics), a stronger long-term effect could be among them.

Concerning the results for new vs. old houses, it might be the case that new houses are technically equipped to be more flexible when it comes to adjusting costs (e.g., are able to switch the heating on/off), while old houses might be inferior in this regard. If this is the case, old houses would only experience lower costs after some thermo-modernization, such as installing individual heating points.

## Heating costs and the co-financing program

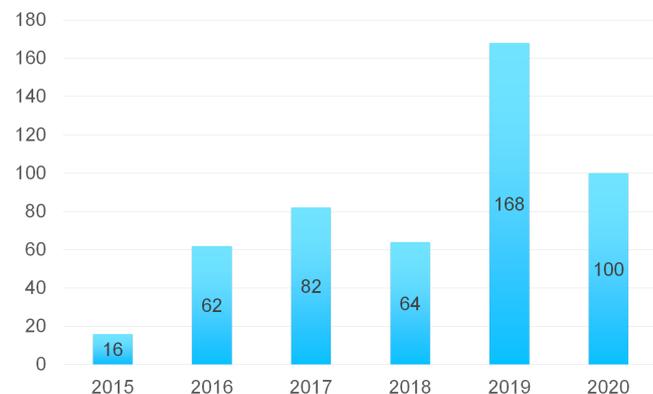
Since 2015, the Kyiv city council offers a program that helps condominiums to finance major overhauls with the intent to improve the energy efficiency of the residential sector. Applicants compete in planning thermo-modernization projects where winning condominiums are awarded financing covering 70% of the overhaul cost.

Our results show that for old houses with condominiums, those who at some point participated in the co-financing program pay on average 15% less for heating compared to non-participants. The corresponding effect for new houses with condominiums is not significantly different from zero.

However, the immediate effect of program participation is present in both new and old houses with condominiums. Old and new condominiums that took part in the program in

2018-2019 experienced an immediate reduction in heating costs by 16% and 37% respectively.

*Figure 2. The number of houses participating in the 70/30 co-financing program across years.*



There are several potential explanations as to why we observe an immediate effect but no effect of ever participating in the program for the new houses with condominiums.

First, it could be that new houses with condominiums that are not participating in the program are investing in overhaul anyway, although somewhat delayed compared to investments made by participating new condominiums. The average difference in heating costs between participants and non-participants would then be visible in the short-run and fade away after a few years. If this is the case, the program is financing houses that would have invested in overhaul anyway, even without co-financing. This explanation is partly supported by the fact that the share of the new houses condominiums among participants is 32%, while the corresponding share is 15% among all houses. In other words, old houses with condominiums, that are usually in a worse condition, are underrepresented in the program.

If this is the case, the share of old houses with condominiums among participants should be increased. Given that the purpose of the program is to improve the energy efficiency of residential buildings, its efficient implementation implies encouraging overhauls in houses that are otherwise unable to fund it. In other words, the

program should incentivize people living in energy-inefficient housing to form condominiums and undertake overhauls to improve their energy efficiency, rather than finance houses who are already doing well in that regard. To improve on such selection issues, the program could change the co-financing proportions, making participation more beneficial to old houses with condominiums, e.g. 80/20 - for old and 60/40 - for new condominiums.

Second, the new houses with condominiums that participate in the program might be in a much worse state before participation than those that do not. Program part-taking could make participants catch up to the average level of energy-efficiency (or perhaps do slightly better). If this is the case, the program fulfills its function in the sense that it targets the most energy-inefficient houses.

## Government policies that should be changed

Above, we argue that the formation of condominiums leads to efficiency gains in energy use and cuts utility costs for dwellers. Given the design of the overhaul co-financing program, the Kyiv city council seems to recognize these benefits as well. However, there is a range of government policies currently in place that discourage people from condominium formation.

For example, there are cases when the government finances 100% of overhaul costs using a subvention ("subvention for socio-economic development"). In 2020, 17 houses in Kyiv got overhaul expenses funded by this type of subvention. At the same time, 85 houses that participated in the co-financing competition did not receive any state funding (there were 100 winners among 185 participants).

Considering that this type of subvention predominantly finances non-condominiums, we argue that this policy creates the wrong incentives. Dwellers will likely refrain from forming condominiums in the hope of eventually being

selected for an overhaul fully financed by the state, instead of forming condominium and getting only part of overhauls expenses covered (70% of the overhaul funding if winning co-finance program competition, and no funding otherwise).

In addition, this subvention typically has a "pork-barrel" nature since it is often allocated to the constituencies of the ruling party's MPs. State financed overhauls are often used as an advertisement tool to get popular support. This creates an additional problem in the sense that subvention is targeted to politically loyal regions and not necessarily to regions in need of support.

Along this line of reasoning, we suggest that this pork-barrel subvention should be canceled and housing-overhauls should instead be funded through co-financing programs. The government should implement programs similar to the "70/30" and further encourage people to adopt condominium ownership.

## Conclusion

Motivated by the common perception that utility costs are excessively high, we study one possible way of reducing the utility bill – condominium housing management.

Our analysis shows that old houses with condominiums pay 22% less for heating compared to old non-condominiums. For new houses, we find that condominiums pay 29% less in heating costs than non-condominiums. In addition, old houses with condominiums that participate in Kyiv's co-financing program pay 15% less than other old condominiums. That is, condominium formation combined with the co-financing program could save more than one-third of a resident's heating costs.

Our analysis suggests the following policy implications:

- Condominiums have a positive effect on energy efficiency, and utility cost savings, and should thus be promoted to the population as a preferable form of house management practice.

- State and municipal governments should provide incentives for condominium formation through, e.g., overhaul co-financing programs. Other state-provided forms of overhaul financing, such as pork-barrel subvention, should be canceled.
- Co-financing programs should combine better targeting (e.g., to those houses that are in greater need of overhaul) with sufficient incentives for condominium formation.

## References

Hamaniuk, Oleksii; and Andrii Doschyn, 2020. "Let's reduce the cost of heating by a third!" – ACMH and co-financing program for buildings". <https://voxukraine.org/en/let-s-reduce-the-cost-of-heating-by-a-third-acmh-and-co-financing-program-for-buildings/>

Banks, Christopher, Sheila O'Leary, and Carol Rabenhorst, 1996. Review of urban & regional development studies, vol. 8, issue 2. <https://doi.org/10.1111/j.1467-940X.1996.tb00114.x>



## Oleksii Hamaniuk

Kyiv School of Economics (KSE)  
ohamaniuk@kse.org.ua  
www.kse.ua

Graduated from the Kyiv School of Economics in 2018. Worked with economic research in NGOs in 2017-2020. In 2019-2020 - researcher in Kyiv School of Economics.

Started to study in a PhD program at the Bonn University in October 2020.



## Andrii Doshchyn

Kyiv School of Economics (KSE)  
adoshchyn@kse.org.ua  
www.kse.ua

Graduated from Kyiv-Mohyla Academy in 2018.

From 2019 - student at Kyiv School of Economics in the program "Economic Analysis".

## [freepolicybriefs.com](http://freepolicybriefs.com)

The Forum for Research on Eastern Europe and Emerging Economies is a network of academic experts on economic issues in Eastern Europe and the former Soviet Union at BEROE (Minsk), BICEPS (Riga), CEFIR (Moscow), CenEA (Szczecin), KEI (Kiev) and SITE (Stockholm). The weekly FREE Network Policy Brief Series provides research-based analyses of economic policy issues relevant to Eastern Europe and emerging markets. Opinions expressed in policy briefs and other publications are those of the authors; they do not necessarily reflect those of the FREE Network and its research institutes.