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The Impact of Ukrainian War Refugees on Rental Prices in Europe: A Panel Data Analysis

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Abstract: *This study examines the impact of Ukrainian war refugees on actual rental prices in 27 European countries. Using panel data regression analysis for the period 2017Q1-2023Q1, the study found that inflation, house price growth, and interest rates were the primary drivers of rental price growth after February 2022. The study also showed that an inflow of Ukrainian refugees equal to 1% of the host country's population translated into an increase in rental price growth of 0.2-0.3%, but this effect was not statistically significant at the 5% probability threshold. Auxiliary estimations revealed the statistical significance of Ukrainian migration when adjusting for the stringency of rent controls and size of the rental market.*

Keywords: Ukraine; refugees; rental prices; panel data; housing market.

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Introduction

Russia's military aggression against Ukraine in February 2022 triggered population migration on a scale not seen in Europe since the end of the Second World War. More than eight million refugees fleeing the war left Ukraine for other countries, most of whom emigrated in the first weeks of the conflict (UNHCR 2023). Migrations of this scale have not only caused a major humanitarian crisis, but have also had a strong impact on a number of aspects of the socio-economic lives of citizens of refugee-hosting countries (Niedziółka and Próchniak 2023). Indeed, one of the basic needs of families fleeing war is the need for a roof over their heads, which is only temporarily able to be met in refugee camps or through the charity of the citizens of host countries. The impact of the conflict on housing markets was a topic of discussion among academics and the public from the early days of military aggression. Initial research suggested that the inflow of migrants triggered a spike in rental prices in host countries (Trojanek and Gluszak 2022; Wojdat and Cywiński 2022; Poliaková and Kameníková 2023), especially in big cities of Central and Eastern Europe (CEE).

The humanitarian crisis in the region, coupled with the end of a housing boom and a post-pandemic rise in inflation, has been further exacerbated by a war-induced energy crisis and the abrupt tightening of monetary policy by central banks, leading to a fall in housing credit affordability (Czerniak et al. 2022). All of these factors could have a substantial effect on rental prices. This study seeks to examine the short-term effect of Ukrainian war migration on rental prices across Europe and disentangle the various factors that may have contributed to any observed changes.

Data Description

The analysis encompassed 27 European countries, including Norway, Switzerland, the United Kingdom, and all member states of the European Union, except for Malta, Cyprus, and Luxembourg. These countries were dropped from the panel because of the limitations imposed by the small population, the large inflow of tourists to Malta and Cyprus, and the fact that Luxembourg is a city-state with suburbs extending to neighbouring countries. The study period spanned from 2017Q1 to 2023Q1. To control for the effects of coinciding shocks after the Russian attack on Ukraine, quarterly data prior to February 2022 were included in the analysis. The panel dataset comprised the actual quarterly rental price growth rate (*rents*) as the dependent variable, the number of Ukrainian refugees per 1,000 inhabitants (*refugees*) as the main independent variable of interest, and six control variables chosen in line with previous research on rent price dynamics and price-to-rent ratios in the housing market (Cochrane and Poot 2021; Pourcelot et al. 2020; Benjamin and Sirmans 1994; DiPasquale and Wheaton 1992). These control variables are HICP index quarterly growth rate (*inflation*), quarterly growth rate of house prices (*house price growth*), quarterly growth rate of median equivalised net income (*income growth*), average interest rates on new housing loans (*interest rates*), share of owner-occupied houses in the housing stock (*owner-occupied housing share*), and an index that measures the stringency of rent controls (*rent control index*). Below is a brief description of the data together with a justification of the data sources.

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The largest problem with data source selection arises for rent prices, as there are three main data collection methods: the first is based on average offer prices at a given moment; the second is based on actual transaction prices, that is, average rents agreed upon in new contracts signed over a given time period; and the third is based on actual rent prices, i.e. average rents in all running contracts within a given time period, both new, renegotiated, and unchanged from the former period. All three approaches have their advantages and disadvantages. Offer and transaction prices are the easiest to collect, and immediately indicate all changes in the rental market. On the downside, however, they are subject to sample selection bias, as in times of supply shortages, only very expensive rental houses remain in offer and the number of transactions drops substantially. As a result, the rents are calculated only for a small biased sample of all rental housing. This problem is omitted when calculating actual rental prices, because they include all outstanding rental contracts calculated for a representative sample (Eurostat 2015). However, these prices are less prone to rapid shifts in market demand or supply, and exhibit a strong drift component, especially in countries with rigid rent controls that do not allow for the correction of outstanding contracts to the actual market situation.

Balancing these pros and cons, the latter approach was chosen as the best suited for analysing the Ukrainian migration shock. The inflow of refugees caused a rapid shift in the demand for rental housing and reduced the number of offers and transactions to unprecedented levels. For example, in Poland, the number of rental housing offers in the biggest Polish housing e-marketplace dropped at the end of 2022Q1 to 8.7 thousand, the lowest number ever recorded (Czerniak 2022). As a result, both transaction and rental prices have become unreliable sources of statistics. The actual rental prices were obtained from the Eurostat and the UK's Office for National Statistics (ONS) monthly data on the HICP inflation component 04.1.1. The transformation to quarterly frequency was made by taking the last monthly index for a given quarter. Quarterly growth rate was used as the dependent variable.

This data source has one disadvantage: the low quality of data for some EU member states due to data collection limitations, especially for countries with underdeveloped and dispersed private rental markets (e.g. up to 2021 in Slovakia, only rental prices of housing rented out by municipalities were covered). However, recent improvements in data collection, including the use of new data-gathering techniques such as web scrapping, as well as increased cooperation with organisations of real estate agencies and online rental offer platforms, have substantially increased the reliability of actual rental prices[1] in recent years. In addition, using the HICP component for further analysis has the benefit of high comparability across member states in terms of methodology and data collection frequency. Using country-specific commercial data sources of actual rental prices or transaction rental prices would make the estimation prone to possible bias steaming from a diversity of data collection and aggregation methods. This benefit has already been acknowledged by other empirical panel data studies that use the actual rental index as the denominator for calculating price-to-rent ratio development (Frayne et al. 2022).

Another data problem arises when one attempts to properly assess the main independent variable of interest, the number of refugees migrating to a given country. The very nature of the process is that many refugees migrate both domestically and internationally for a longer period (Wojdat and Cywiński 2022). The largest direct migrations are usually to adjacent countries where refugee camps are being raised. Subsequently, migrants seek accommodation in a given country or travel farther away from their homeland. According to the United Nations Refugee

[1] See HICP compliance monitor follow-up reports (Eurostat 2023a).

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Agency (UNHCR), between February 2022 and the beginning of April 2023, over 8 million Ukrainian refugees were recorded across Europe, including Russia and Belarus (UNHCR 2023), out of which many registered in several European countries looking for public support. This poses a substantial problem in assessing the actual number of migrants looking for accommodation in a given country. There are two common ways to gather data on large-scale migrations. The first is based on border control data; the number of migrants is calculated as the net inflow of people from a given country over a given period. This measure is very reliable because it is based on public registers and can be updated with a daily frequency. However, it does not consider the nationality of migrants or their travel purpose. It is also prone to be inflated by transit migration (refugees that only travel through a given country to a farther destination), and various types of aid workers commute back and forth through the borders of many countries. The second way of measuring the number of refugees staying in a given country is by taking the number of people with a given citizenship who applied for a temporary protection scheme to get access to public services such as healthcare or schooling. This method is more relevant for the purpose of analysing the number of refugees that may add to the demand for rental housing, as they most likely look for accommodation opportunities. However, this method also has disadvantages, because some refugees register for temporary protection in several countries during their voyage. As a result, the sum of all registered refugees is larger than the actual number. Fortunately, many European countries have introduced regular verification procedures into temporary protection schemes to correct for this effect. As a result, the current data provided by public institutions on temporary protection for Ukrainians are smaller than the total data on Ukrainian refugees provided by the UNHCR. For this analysis, the former was used. The data sources were Eurostat for the EU and EFTA countries and the UK's Home Office for the UK. The methodology for gathering information on the temporary protection of migrants was specially drafted for the purpose of analyzing the mass influx of displaced persons within the meaning of Article 5 of Directive 2001/55/EC. These data were obtained from public registers and were supplied to Eurostat by the national Ministries of the Interior, National Statistical Institutes, and related immigration agencies[2]. In most cases, the data were identical to the numbers provided by the UNHCR; hence, its quality should be viewed as relatively high.

The number of Ukrainian refugees registered for temporary protection in a given country was divided by the country's population as of 1st January 2022 as provided by Eurostat and ONS. The transformation to quarterly frequency was made by taking the last monthly value for a given quarter. Graph 1. presents data on this indicator for 2023Q1 on the backdrop of actual rental price growth between 2022Q4 and 2023Q1.

[2] For more details on data quality see Eurostat (2023b).

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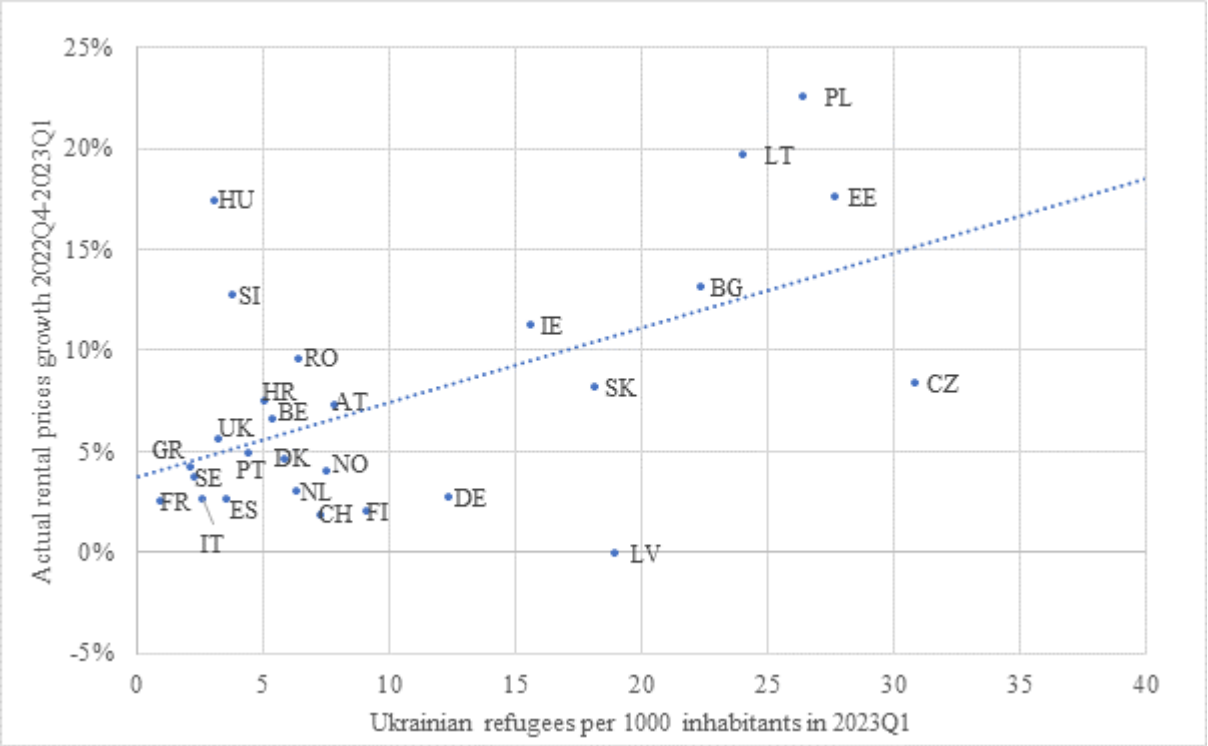
Figure 1: Actual rental prices and number of Ukrainian refugees



Source: Eurostat, ONS, UK Home Office, Author's calculations.

The set of control variables was constructed as follows. The *inflation* measure was calculated as the growth rate of the total HICP index between the last month of the current quarter and the last month of the previous quarter (data source: Eurostat and ONS). House *price growth* was calculated as the quarterly growth rate of the average nominal market house price index, as provided by Eurostat, the ONS, and the Swiss Bundesamt für Statistik (BFS). *Income growth* was calculated based on the median equivalised net income in PPS obtained from Eurostat EU-SILC database and ONS household budget survey. The time series was linearly interpolated to obtain a quarterly frequency. Eventually, the quarterly growth rate was included in the final panel dataset. The *interest rate* time series is the end-of-period value for monthly average interest rates on new housing loans issued in national currency[3] to households, as collected by the EBC, Swiss National Bank, Bank of England, and Statistics Norway. Data on *owner-occupied housing share* were obtained from Eurostat's EU-SILC database, the ONS household survey, and data on *rent control index* from the Kholodilin et al. (2018) rental market regulation database. Both time series were linearly interpolated from annual data to obtain a quarterly frequency.

[3] For Croatia the interest rates are for loans denominated in Kuna for the time period 2017-2020 and in Euro from 2021Q1 onwards.

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Panel Regressions Specification and Estimation Strategy

To estimate the impact of Ukrainian refugee migration on the actual rental price growth, the following model was estimated:

$$\Delta rents_{it} = \alpha_1 constant_{it} + \alpha_2 \Delta rents_{i,t-1} + \alpha_3 refugees_{it} + \boldsymbol{\beta control}_{it} + \phi_i + \epsilon_{it} \quad (1)$$

where *i* and *t* are country and time indices, ϕ_i denotes country fixed effects, and ϵ_{it} represents the error term. Model (1) describes the growth rate of actual rental prices (*rents*) as a function of the number of Ukrainian refugees registered for temporary protection in a given country per 1000 inhabitants (*refugees*) and the set of control variables defined in the previous section. Additionally, to correct for possible autoregression of actual rental prices growth the lagged dependent variable was included[4]. The estimation procedure consisted of three steps. First, fixed-effects panel data regressions with a general least-squares estimation procedure and robust standard errors (FE_GLS) were performed to analyse the impact of adding additional control variables on the value and statistical significance of parameter α_3 estimates. The results of this regressions are presented in Table 1.

Second, a sensitivity analysis was performed and was based on comparing results of various estimation procedures:

- fixed-effects estimator with bootstrap standard errors (FE_BS) were used to additionally verify the robustness of the robust standard error computations,
- random-effects estimator with robust standard errors (RE_GLS) were performed to check whether the fixed-effects assumption might have influenced the parameter and standard error estimations,
- Bruno fixed-effects estimator (FE_BC) was applied to correct for the Nickel bias (Bruno 2005),
- first-difference instrumental variable estimator proposed by Anderson-Hsiao (1982) (AH) were used to correct for possible endogeneity between actual rental price growth and house price growth and inflation rate,
- the Arellano-Bond GMM estimator (1991) (AB) should correct for possible bias caused by including the lagged dependent variable in the model specification,
- the system-GMM Blundell-Bond (1998) procedure for dynamic panel-data estimation (BB) was performed to correct simultaneously for autoregression and endogeneity bias,
- the system-GMM Blundell-Bond procedure for dynamic panel-data estimation with limited number of instruments was used to reduce the risk of overidentification of the BB estimation procedure as suggested by Roodman (2009) (BBR).

Auxiliary sensitivity analysis consisted of comparing FE_GLS robust estimates for two sets of countries: 9 countries that experienced a large inflow of Ukrainian refugees, that is more than 10 migrants per 1000 inhabitants (*large inflow*), and 11 countries comprising the Central and Eastern European group of new EU member states (*CEE*). The results of the sensitivity analysis are listed in Table 2. Finally, to test for a structural break in the panel data estimation during the pandemic and after the Russian attack on Ukraine, the Karavias-Narayan-Westerlund (2021) test was performed. Such a structural break might result from the *refugees* variable being equal

[4] Two unit roots tests on data corrected for panel means were performed – the Levin-Lin-Chu (2002) and Harris-Tzavalis (1999). None of them indicated that the dependent variable is non-stationary.

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to zero before 2022, as well as by the COVID-19 pandemic, which might have altered the relationship between the dependent variable and some control variables, such as inflation, house prices, and interest rates.

Third, interaction variables (*inter*) were added to model (1) specification to test for possible indirect effects of two structural factors: share of owner-occupied housing and rent control stringency. The following auxiliary model was estimated using the FE_GLS procedure on the full sample of countries and both subsamples (*large inflow* and *CEE*):

$$\Delta rents_{it} = \alpha_1 constant_{it} + \alpha_2 \Delta rents_{i,t-1} + \alpha_3 refugees_{it} + \boldsymbol{\beta control}_{it} + \gamma\, inter_{it} + \phi_i + \epsilon_{it} (2)$$

where *inter* is one of two: (1) the result of multiplication of the number of Ukrainian refugees and the owner-occupied housing rate (*Interaction variable OOH*), which describes how scarcity of rental housing amplifies the effect of Ukrainian migration on actual rental price growth; and (2) the result of multiplication of the number Ukrainian refugees and the rent control index (*Interaction variable RCI*), which describes how restrictive rent controls influence the impact of Ukrainian migration on actual rental price growth. To respect the strong-heredity principle, apart from adding the interaction variable $x_1 \times x_2$ to the model, both variables x_1 and x_2 were added as control variables (Nelder 1998). Otherwise, restrictions imposed on the regression parameters are often unjustifiable, leading to estimator bias or inefficiency. The results of the above described regressions with interactive variables are presented in Table 3.

Results

The initial results corroborate previous findings that there is a correlation between the inflow of Ukrainian refugees and rent price increases across Europe. An inflow of refugees equal to 1% of the host country population coincided with a 0.6% increase in rent prices, smaller than the 1-1.5% impact indicated by worldwide studies on migration (Cochrane and Poot 2021). Adding control variables to the model specification reduces the scale of the impact of Ukrainian refugees to 0.3-0.2% (see Table 1) and pushes the statistical significance over the 5% threshold. In other words, the majority of the upswing in actual rent prices across Europe – also after February 2022 – can be explained by an increase in the general price level as well as the growth of house prices and an increase in interest rates on housing loans, which forced many domestic households into the rental market as ownership housing became unaffordable for them. This effect is especially strong in CEE countries (Czerniak et al. 2022). All of these factors are important drivers of rental price dynamics at the 5% significance threshold. Only the income growth rate was a weakly significant explanatory variable.

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Table 1: Actual rental prices quarterly growth rate regression results

Variables	(1)	(2)	(3)	(4)	(5)
Lagged dependent variable	-0.0420	-0.0766	-0.0781	-0.0789	-0.0836
	(0.0637)	(0.0662)	(0.0621)	(0.0623)	(0.0556)
Refugees	0.000639***	0.000195	0.000369*	0.000366*	0.000191
	(0.000150)	(0.000231)	(0.000190)	(0.000192)	(0.000174)
Inflation		0.387**	0.312**	0.314**	0.308**
		(0.158)	(0.132)	(0.133)	(0.134)
House price growth			0.186***	0.190***	0.222***
			(0.0660)	(0.0675)	(0.0664)
Income growth				0.00497*	0.00390
				(0.00257)	(0.00237)
Interest rates					0.00248***
					(0.000780)
Constant	0.00669***	0.00387***	0.00121	0.00114	-0.00497**
	(0.000558)	(0.00107)	(0.00173)	(0.00176)	(0.00223)
Observations	648	648	648	641	632
Number of countries	27	27	27	27	27
Adjusted R2	0.042	0.149	0.188	0.187	0.195
F-statistic	10.00	7.29	8.06	6.33	17.77
Log Likelihood	1,808	1,847	1,863	1,840	1,814

Robust standard errors in parentheses
**** p<0.01, ** p<0.05, * p<0.1*
Source: Author's calculations.

Alternative estimation procedures (see Table 2) confirm the finding that Ukrainian refugee migration was a minor factor in explaining rent price growth across the region. These regression results also indicate that using the fixed-effect GLS estimator is justified, as the lagged dependent variable is statistically insignificant, different from zero, which shows that rent prices exhibit little inertia. Within the sensitivity analysis special attention should be devoted to the results of estimations that use instrumental variables (AH, BB, BBC) as some of the control variables are interdependent – interest rates, income growth and house price growth are influenced by the growth in general price levels; interest rates impact the growth rate of incomes and prices; and the rapid immigration of Ukrainians posed inflationary pressure. However, only the AH estimation indicates that including instrumental variables might increase the statistical significance of Ukrainian refugees' impact on rental prices. Nevertheless, this result should be treated with caution, as the same regression result indicates that the impact of interest rates on rents is negligible, which contradicts the well-established DiPasquale–Wheaton model (DiPasquale and Wheaton 1992). There was also no indication that the estimators might have been biased by the structural break. The Karavias-Narayan-Westerlund sequential test for multiple breaks at unknown breakpoints did not reveal any breakpoints in the entire estimation sample[5].

[5] The results of the test statistics for pre-defined breakpoints at 2020q1, 2020q2, 2022q1, and 2022q2, did not suggest the rejection of the null hypothesis that there were no breaks in the data, at a 5% significance level.

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Table 2: Sensitivity analysis for actual rental prices quarterly growth rate regressions with respect to the estimation methods and sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lagged dependent variable	-0.0836	-0.0836	-0.0237	-0.0461	-0.0437	-0.0884*	-0.0856	-0.0193	-0.158***	-0.127*
	(0.0556)	(0.0950)	(0.0749)	(0.0377)	(0.142)	(0.0512)	(0.0611)	(0.0803)	(0.0445)	(0.0574)
Refugees	0.000191	0.000191	0.000262	0.000160	0.000322*	0.000132	-0.000188	0.000332	2.13e-05	2.23e-07
	(0.000174)	(0.000194)	(0.000160)	(0.000145)	(0.000171)	(0.000179)	(0.000287)	(0.000210)	(0.000325)	(0.000250)
Inflation	0.308**	0.308**	0.293**	0.304***	0.284**	0.324**	0.400**	0.238***	0.536*	0.498**
	(0.134)	(0.130)	(0.128)	(0.0469)	(0.128)	(0.133)	(0.158)	(0.0866)	(0.274)	(0.209)
House price growth	0.222***	0.222***	0.221***	0.220***	0.201***	0.234***	0.264***	0.207***	0.360***	0.300**
	(0.0664)	(0.0658)	(0.0606)	(0.0347)	(0.0594)	(0.0727)	(0.0755)	(0.0513)	(0.0960)	(0.0980)
Income growth	0.00390	0.00390	0.00432*	0.00418	0.00768***	0.00795	0.00737	0.00391	0.0817	0.130
	(0.00237)	(0.0545)	(0.00245)	(0.0105)	(0.00269)	(0.00898)	(0.0122)	(0.00262)	(0.0931)	(0.115)
Interest rates	0.00248***	0.00248***	0.00167***	0.00242***	0.000766	0.00316***	0.00411***	0.00178**	0.00214	0.00192
	(0.000780)	(0.000949)	(0.000486)	(0.000861)	(0.000516)	(0.00100)	(0.00116)	(0.000736)	(0.00188)	(0.00124)
Constant	-0.00497**	-0.00497*	-0.00340**			-0.00689**	-0.00993**	-0.00326	-0.00875	-0.00831
	(0.00223)	(0.00292)	(0.00134)			(0.00297)	(0.00386)	(0.00211)	(0.00751)	(0.00551)
Observations	632	632	632	632	595	604	632	632	213	258
Number of countries	27	27	27	27	27	27	27	27	9	11
Sample	total	total	total	total	total	total	total	total	large inflow	CEE
Estimation method	FE_GLS	FE_BT	RE_GLS	FE_BC	AH	AB	BB	BBR	FE_GLS	FE_GLS
Adjusted R2	0.195	0.195	0.239		0.366				0.316	0.265
F-statistic / Wald Chi2	17.8	80.7	105.2		33.8	173.7	50.4	27.0	16.4	5.6
Log Likelihood	1,814	1,814			1,672				547	650

Robust standard errors in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$
Source: Author's calculations.

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Table 3: Additional results for actual rental prices quarterly growth rate regressions

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged dependent variable	-0.0850	-0.0854	-0.0872	-0.163***	-0.131**	-0.138**	-0.158***
	(0.0543)	(0.0535)	(0.0546)	(0.0401)	(0.0544)	(0.0537)	(0.0420)
Refugees	0.000190	-5.53e-05	9.53e-05	-8.66e-05	8.25e-05	-0.00365*	1.30e-05
	(0.000171)	(0.000796)	(0.000180)	(0.000352)	(0.000257)	(0.00188)	(0.00175)
Inflation	0.308**	0.308**	0.311**	0.541*	0.500**	0.495**	0.537*
	(0.135)	(0.133)	(0.136)	(0.280)	(0.209)	(0.212)	(0.273)
House price growth	0.220***	0.219***	0.223***	0.361***	0.295**	0.288**	0.359***
	(0.0667)	(0.0697)	(0.0658)	(0.0964)	(0.101)	(0.0973)	(0.104)
Income growth	0.00383	0.00378	0.00400*	0.0769	0.00188	0.169	0.00216
	(0.00235)	(0.00248)	(0.00226)	(0.0868)	(0.00122)	(0.118)	(0.00185)
Interest rates	0.00250***	0.00252***	0.00246***	0.00220	0.157	0.00149	0.0809
	(0.000764)	(0.000749)	(0.000771)	(0.00197)	(0.119)	(0.00105)	(0.0957)
Owner-occupied housing share	0.000418	0.000350				-0.000130	0.000121
	(0.000453)	(0.000486)				(0.000960)	(0.00162)
Rent control index	-0.00255		-0.00669***	-0.00859**	0.0539		
	(0.00224)		(0.00165)	(0.00344)	(0.0555)		
Interaction variable OOH		2.99e-06				0.000044*	6.94e-08
		(1.03e-05)				(0.000023)	(2.23e-05)
Interaction variable RCI			0.000574***	0.000632*	-0.000164		
			(0.000164)	(0.000298)	(0.000570)		
Constant	-0.0353	-0.0310	-0.00321	-0.00661	-0.0176	0.00386	-0.0184
	(0.0326)	(0.0356)	(0.00228)	(0.00805)	(0.0112)	(0.0803)	(0.126)
Observations	632	632	632	213	258	258	213
Number of countries	27	27	27	9	11	11	9
Sample	total	total	total	large inflow	CEE	CEE	large inflow
Adjusted R2	0.193	0.193	0.195	0.313	0.260	0.264	0.309
F-statistic	16.4	19.5	25.2	505.2	.	9.4	42.17
Log Likelihood	1815	1814	1815	548	650	651	547

Robust standard errors in parentheses
**** p<0.01, ** p<0.05, * p<0.1*
Source: Author's calculations.

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The regression results of the auxiliary model specification that includes interaction variables shed additional light on the mechanisms of migration impact on rental prices (see Table 3). First, in countries with more stringent rent controls, the impact of war refugees on rent prices was stronger, and this finding was statistically significant at the 1% p-value. This can be explained as a statistical phenomenon: the inflow of new tenants translates into an increase in the share of new rent contracts and an increase in offer prices. This leads to an increase in the benchmark rent prices used in rent controls. As a result, landlords can increase rental prices, even in areas not directly affected by immigration. Such effects cannot be observed in deregulated markets, where many landlords use fixed-rent contracts that expire after the initial migration shocks fade.

Second, in the CEE region, characterised by an underdeveloped rental market, the impact of Ukrainian war refugees on rental prices was stronger in countries with a higher share of owner-occupied housing. However, this result was significant only at the 10% p-value and did not hold when Western European countries were included in the sample. The rationale behind this finding is rather straightforward, as in countries where the share of owner-occupied housing is large, the number of available rental units is lower, which makes supply rigidity even more binding. As a result, even a small increase in the number of migrants may translate into a larger impact on rental prices.

Discussion

The findings of this study suggest that the impact of Ukrainian war refugees on rental prices across Europe was less significant than commonly assumed. First, some rental price measures provide a false picture of a very large increase in rents. This was a statistical effect of the rental market squeeze – the average offer and transaction prices rose more strongly than the actual rental prices due to a sample bias (i.e. only expensive properties remained on the market as the rest was occupied by tenants). Second, many landlords exploited the shortage of supply and increase in offer prices to justify rent increases motivated by factors such as rising inflation, particularly energy prices and maintenance costs, as well as an increase in the cost of capital. This is particularly true for countries with rigid rent controls. Third, the inflow of Ukrainian refugees was accompanied by a post-pandemic recovery in the domestic demand for rental housing, which was further accelerated by a credit crunch.

Nevertheless, this research suggests that a weak impact of Ukrainian immigration on rental prices was present. As indicated by Trojanek and Gluszak (2022), this impact was likely stronger at the city level than at the country level, particularly in the CEE region. Given these considerations, further research is necessary to assess the medium- and long-term impact of Ukrainian refugees on actual rental prices as well as the spillovers of prices between the rental and housing markets and between large cities and other regions that did not experience such an inflow of migrants.

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