The post-Soviet urban poor and where they live: Khrushchev-era blocks, "bad" areas, and the vertical dimension in Luhansk, Ukraine

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Abstract: Using a combination of descriptive and multivariate regression methods applied on a sample survey (n=4000) conducted in Luhansk (Ukraine) during Fall 2013, this paper investigates demographic, socio-economic, housing-specific and geographical factors that predict urban poverty in countries undergoing economic, political and institutional transition from state socialism to the market with a specific focus on Ukraine. By doing so, it contributes to the literature on poverty under and after transition, which has a strong position within economics, and to the literature on the spatial expressions of poverty after state socialism, which is particularly prominent within geography. Inspired by Amartya Sen’s notion that poverty contains an irreducible absolute core, as well as a relative component, this paper makes use of a poverty index based on multiple thresholds that reflect the respondents’ capabilities to meet different needs. A fascinating result of this exercise is that poverty under transition is not only predicted by such classical factors as sex, personal and parental education, and socio-occupational status, but also by housing-specific details such as location in vertical space and by classical geographical factors such as relative horizontal location and neighborhood prestige. Accordingly, this paper responds to recent calls for increased sensitivity towards the third dimension of space in contemporary urbanism, while at the same time making a substantial contribution to our hitherto incomplete knowledge of the patterns and sources of urban poverty and inequality in post-socialist transition.

Keywords: Ukraine, post-socialism, Former Soviet Union, cities, poverty, vertical space, quantitative methods.
This article investigates the factors that predict urban poverty in the former Soviet Union with a specific focus on Ukraine, the region’s most populous country after Russia. At a general level, the intention is to contribute to the literature on poverty under and after transition, which has strong traditions within economics. For various reasons, this literature rarely considers the topic from a spatial perspective, despite the fact that poverty and socio-economic inequalities are regularly mirrored in multi-scale patterns of spatial differentiation. With this in mind, this article treats urban poverty as a geographical topic of inquiry.

The economic collapse associated with the demise of the Soviet Union caused a staggering decline in the population’s real incomes, triggering widespread poverty across the region (Round and Williams 2010). With a GNI per capita (at PPP) drop of almost 50 percent between 1991 and 1999 Ukraine was hit particularly hard (World Bank 2014a). Recovery was fast in the early and mid-2000s, yet by late 2008 the global economic crisis unleashed a cascade of further macroeconomic misfortunes, reversing the poverty reduction trend of the new millennium (UNDP 2009). Since then, the Ukrainian economy has shown signs of recovery, but political instability and the poorly reformed state of the economy pose severe limits to growth and future welfare. Most recently, the Euromaidan1 revolution, the Russian annexation of Crimea, and a rapidly escalating armed conflict in the Donbas have made future developments even more uncertain, and the country has plummeted back into deep economic crisis.

The determinants of poverty in post-communist transition economies have usually been investigated through econometric or descriptive analyses applied to national-level sample surveys using various measures of poverty (see Brück et al. 2010; Gustafsson and Nivorozhkina 2004; Grushetsky et al. 2009). Despite their invaluable input to our understanding of post-Soviet

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1 This term refers to the pro-European protests that began in November 2013, ending with the massacre of approximately 100 people in Maidan Nezalezhnosti (Independence Square) in Kiev around 20 February 2014, followed by former president Viktor Yanukovich’s escape to Russia.
poverty patterns at the macro-level, such studies do not address local context (except perhaps rough distinctions such as urban and rural or macro-region, cf. O’Hara et al. 2009; Macours and Swinnen 2008). To understand local processes, the scale and approach of analysis need to be more detailed, but also different questions need to be asked. Such a shift in focus comes at the cost of generalization, but is compensated by a deepened understanding of the micro-level contextual differences that may influence, or be influenced by, poverty.

In the context of the transition economies, data limitations often preclude intra-urban analyses. In many cases, including Ukraine, census microdata are simply unavailable. In other cases, the data are available either freely or for purchase, but they often exclude crucial geographical information, or include it at the expense of microdata. The only way to circumvent this problem is to tailor an appropriate survey instrument that offers both the possibility to work with the attributes of individuals and of the places where they live. This strategy was the one chosen here, in the form of a sample survey (the Luhansk Population and Housing Survey 2013, or LPHS2013) conducted in Luhansk in late 2013 by the author in cooperation with the Luhansk regional statistical administration. Until the very recent extraordinary political unrest in the Donbas, Luhansk was a rather ordinary eastern Ukrainian regional capital, with a mixed economic base and an overwhelmingly Russian-speaking population, sharing important similarities with comparable regional capitals across the post-Soviet realm.

This article begins by reviewing the literature on the predictors of poverty under post-communist transition with emphasis on the former Soviet Union and on Ukraine in particular. A description of the field site precedes the introduction of the data, methods and analysis. As the results unfold,

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2 Russian is widely spoken in southern and eastern Ukraine, and it is the mother tongue of a great majority of the population of the Donbas and Crimea. However, it does not necessarily overlap with ethnicity: according to the LPHS2013, more than 60 percent of Luhansk residents self-identify as Ukrainians, that is, Russian-speaking Ukrainians.
the analysis will highlight the three-dimensional geographical and housing-specific predictors of poverty, which represent the core value-added of this contribution.

**Poverty in transition**

The dramatic rise in poverty experienced since the end of socialism in Central and Eastern Europe (CEE) rapidly became the focus of attention among both donor organizations and the academic community. Accordingly, the problem is relatively well described and understood. Measured using poverty headcounts, the general trend across the post-Soviet realm is that poverty peaked sometime after the August 1998 crisis (World Bank 2014b), followed by a subsequent steady decline until the next major crisis a decade later. Under socialism, being concentrated among the elderly, women and low-skilled workers, poverty was relatively predictable (Ofer and Vinokur, 1992). During the first decade of transition, it spread across larger segments of the working population, particularly among families with children (Stenning et al. 2010). This has been explained by the frequency of wage arrears and non-monetary retribution (Brück et al. 2010), leading to a situation where “the determinants of poverty have become blurred” (Habibov 2011, p. 54).

During the 2000s, the penetration of poverty among the population became less random, statistically speaking, yet the parameters differ somewhat when compared to the socialist period. The returns on education, for example, became more evident (UNDP 2009, p. 22; see also Brück et al. 2010). Education also prevented poverty and encouraged wellbeing under socialism (for example through its impact on the so-called “neutral” housing allocation process, cf. Gentile and Sjöberg 2013). With the growing importance of education on the labor market, rural areas typically fell behind during the new millennium (Brück et al. 2010; Chakars and Sweet 2014).
These studies largely base their findings on the visible outcome of the formal economy. The economies of the countries of the Former Soviet Union (FSU), however, have historically been complemented by various types of “second economy” activities (Arnstberg and Borén 2003). This tradition is deeply rooted in the everyday practices of the population during the socialist period, when endemic shortages plagued the economy and the authorities turned a blind eye on the ensuing alternative economies of barter, informal service provision, contacts, bribery, corruption, and mutual back-scratching (Matthews 1989; Ledeneva 1998). During transition, when the problems suddenly jumped over from the supply to the demand side, the role of this parallel economy became no less important. Arguably, it ensured survival at a time when income levels for many had dropped far below subsistence, encouraging the development of an influential body of literature that emphasizes the diversity and multiplicity of the everyday economic and coping practices in transitional countries. Moreover, recognizing that “informal practices [are] entwined with everyday life”, Round and Williams (2010) note that “such practices are an important part of everyday life for a far greater number of households than they are in more mature economies” (p. 184). The same authors suggested that “non-capitalist economic practices [in Ukraine] are not some traditional, stagnant, declining, backward, marginal sphere but instead, are large, extensive and widespread” (Williams and Round 2007, p. 425), implying that the penetration of capitalism in the Ukrainian economy was in fact far weaker than much of the transition literature had been suggesting until then. Within this diverse economy context, urban coping strategies (see Pavlovskaya 2004), and especially their connections with the rural economy, have been explored more deeply in light of the importance of kitchen gardening and dacha-based subsistence agriculture (Rose and Tikhomirov 1993; Zavisca 2003; Ries 2009). While these works approach the issue from different angles, they all emphasize that such subsistence agriculture alleviated the income-related poverty of the 1990s, fostering the growth of a peculiarly post-communist brand of social capital where the presence of kin and friend networks enabled "the
connections between individuals and the sites where social capital is created and accumulated” (Round and Williams 2010, p. 188).

While both poverty and socio-economic inequalities have risen since the end of state socialism in Central and Eastern Europe (CEE) (Stenning et al. 2010), any account of the expansion of poverty during transition needs to be gauged against the backdrop of the material deprivation resulting from decades of the Soviet socio-economic model that imposed short-term consumer abstinence in exchange for indefinitely postponed Communist bounty. Unlike under capitalism, where goods are rationed through pricing, the socialist poor were (more) deprived (than others) because they were somehow less able to navigate a system where scarce resources were rationed the socialist way. And who were these people? To a large extent, the same groups that are likely to experience economic duress under capitalism. Using an income threshold to define poverty, Ofer and Vinokur (1992, p. 204) stress that poverty in the 1970s’ Soviet Union was found among all household types, but that it was particularly evident among the retired (especially women), the economically inactive, and among large and/or “incomplete” (e.g., single-parent) households. However, and contrary to earlier observations (McAuley 1979), the Soviet Union also hosted a “non-negligible” (Ofer and Vinokur 1992, p. 225) class of working poor where the unskilled and service sector occupations were most prevalent and the skilled white collar occupations nearly absent (ibid., pp. 208-209).\(^3\) Seen in this light, poverty under transition was rooted in the social stratification order of the socialist past: those who were poor during socialism remain poor to date, with some more having joined their ranks during recent years.

Material deprivation under socialism was a function of both income poverty and the administrative accessibility of certain goods. The latter most notably concerned housing. In his

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\(^3\) Of course, engaging in second economy activities would have brought some relief, but the opportunities for this were unequally distributed and – for the poor – unfavorably.
seminal study on urban inequalities under state socialism, conducted in the late 1960s in the mid-sized Hungarian cities of Pécs and Szeged, Szelényi (1983) noted that the poor tended to be excluded from the new apartment allocation process altogether, limiting them to the village-like single-family housing sector or to the decaying XIXth century inner-city tenements. Similar findings appeared in the later works on the socialist city, including (generically) the Soviet Union (Morton 1979; Bater 1980; French 1995), and the Upper Silesian industrial region of Poland (Domański 1997).

From a geographer’s perspective, poverty is a highly spatialized phenomenon that needs to be properly described and understood, not least in view of the contention that the geographical concentration of poverty may – or may not – reproduce poverty (through neighborhood effects, see Wilson 1987; Friedrichs et al. 2003). Also, the way poverty is unequally distributed in space raises questions about inequality in access to societal resources or in the exposure to negative externalities such as hazardous environmental conditions (Harvey 1996). It also relates to important immaterial inequalities (with material consequences) in social integration, social participation, and power (Middleton et al. 2005) and, ultimately, to the degree of social cohesion (Bolt et al. 1998; Forrest and Kearns 2001).

The post 1989 introduction of neoliberal structural reforms, socio-spatial differentiation in CEE countries has come to the attention of numerous scholars. Increasing residential segregation is intuitively appreciated by many as the inevitable consequence of the new order (Szelényi 1996; Węclawowicz 1998; Vendina 2002; Brade et al. 2009; Smith and Timár 2010). However, some evidence to the contrary suggests that the situation might be best described as status quo (Ruoppila and Kährik 2003; Sýkora 2009; Marcińczak 2012; Marcińczak et al. 2013 and 2014a), indicating that the process of market-led urban transformation is far more elusive than at first was thought, and that transition involves a wide array of social, economic, and institutional
influences that combine to produce indefinite outcomes. Invoking Harvey (2000, p. 78), “it is just as important to consider how geographical differences are being produced in the here and there as it is to dwell upon the historical-geographical raw materials handed down from previous rounds of activity”. In the CEE context, this means that there is reason to reexamine how the socialist left-overs are metabolized by the neoliberalizing, globalizing, commodified post-communist city, which means that these residues need to be properly described and understood without falling into the discursive trap of using the Western European model(s) of urban development as point of reference (cf. Wiest 2012; Ferencuhová 2012). Such an exercise has theoretical consequences that require reflection: is the socialist legacy simply an obsolete relic of the past, bound to meet the same destiny as the system that created it (Šýkora and Bouzarovski 2012), or does it engage with and within the transformations induced by the capitalist order, almost as a Latourian actant, creating a new form of hybrid urbanism (Golubchikov et al. 2014) that transcends any given categorizations?

Šýkora and Bouzarovski’s (2012) evolutionary take on “multiple transformations”, despite this label, conduces in the single direction of a post-communist catch-up with the western European models based on political and economic freedom. In this sense, it is a model of what could or should be, rather than of what actually is, in many countries across the region. Moreover, as Grubbauer (2012) charges, it tends to be on the material side, downplaying the role of “culture, meaning, and agency” (p. 51). Conversely, Golubchikov et al. (2014) are deliberately vague in positing that capitalism absorbs the socialist past while maintaining the upper hand in molding the course of urban development in CEE. Somewhere in between these two positions we find “heteropolitanization” (Gentile et al. 2012), a concept used to describe the process of increasing diversification that underlies the growing complexity of post-communist urbanism. While heteropolitanization assumes that the transition of the 1990s brings about a unidirectional move towards greater diversity, the concept is not deterministic, because it allows changes in the social,
political, and economic environment to alter its course at any moment. Nevertheless, it suffers from the same weakness as do Golubchikov et al.’s (2014) hybrid spatialities: they are both resistant to empirical assessment.

Under the influence of policy-makers, which giftwrapped Washington consensus-style neoliberal ideology into a hard package of transition, the dominant discourse of post-communist urban change during the 1990s revolved around the idea of a historical break from the near past and, to some extent, of a historical reconnection to the more distant past, as evoked in metanarratives such as “Return to Europe” (e.g., Bunkšė 2004). Overall, this implied the expectation of a rough ride towards convergence in social, political, and economic terms (cf. Sýkora and Bouzarovski 2012).

As time passes, however, it becomes more and more apparent that the post-communist cities are not developing in accordance with this vision of convergence, and that understanding why this is the case requires a careful valuation of the breadth and depth of the socialist legacies, as well as of the path dependencies that they may have created on their own account or by hybridizing with elements of the new system (Borén and Gentile 2007; Grubbauer 2012). Also, and perhaps more importantly, it is not enough to merely recognize the diverse urban experiences of socialism and transition: they must be dealt with both theoretically and empirically. Sometimes, addressing simple questions can go a long way in doing so; therefore, and reflecting what is currently known about the determinants and urban geographies of poverty under transition, this analysis poses two basic questions:

1. *Who* is poor in the Ukrainian city?
2. *Where* are the poor in the Ukrainian city?
These questions are only superficially trivial. In reality, they address substantial gaps and uncertainties in our knowledge about the impacts of transition and of certain socialist legacies on the Ukrainian population and, more generally, on the population of the post-Soviet region. Of course, a study that is limited to the case of a single city does not allow free generalizations beyond the case study itself, but it has an important virtue that is absent in cross-national studies such as the Ukrainian Longitudinal Monitoring Survey (Lehmann et al. 2012): it sheds light on the impact of local context.

Figure 1: Map of Ukraine showing location of Luhansk and of other major cities (English-language city names used where applicable).

The Luhansk case study

Luhansk (Russian: Lugansk, formerly Voroshilovgrad) is located within the densely populated Donbas region of eastern Ukraine, 150 km to the north-east of Donetsk and only 25 km from the Russian border (Figure 1). With a 2013 population of 426,000 inhabitants in the urban core and 465,000 within the city limits, Luhansk is similar in size to Tallinn or Leipzig, which are both
giants of the post-socialist urban studies literature. As capital of the Luhansk oblast (a province-level administrative unit with ca 2.25 million inhabitants in 2013), it hosts important regional administrative and higher-order service functions. Luhansk was heavily industrialized: train locomotives, weapons, mining equipment, textiles, furniture, construction materials and bakery products were all part of the city’s relatively diversified production portfolio. The absence of coal mines sets the city apart within the Donbas context, but it also makes Luhansk more representative from a post-Soviet regional capital perspective. Today, industrial employment has been cut substantially, but the city’s labor market remains moderately active because of the growth in the trade and service sectors as well as the preservation of the overstaffed public
administration. Some industries are still active, most notably Luhansktreplovoz, the largest train and train locomotive factory in the Former Soviet Union.

By Ukrainian standards, poverty in Luhansk is average. The mean net monthly salary in the oblast is slightly higher than the Ukrainian average (3090 hryvna [UAH] = 300 Euros in 2012, down to about 180 EUR in the current [July 2014] volatile currency market, vs. 3026 UAH for Ukraine), but 56.4 percent earned a monthly salary of under 3000 UAH and 4.4 percent earned the minimum wage of 1134 UAH in December of the same year. However, the mean salary within the city of Luhansk was lower than the oblast average because the city does not host any active coal mines, whose workers are relatively well-paid (Golovne 2013a). In comparison with the rest of the country, oblast level figures suggest that only the city of Kiev⁴ and Donetsk oblast report higher mean salaries than in Luhansk oblast (Derzhavna 2013). Within the latter, however, there are specific cities where the mean salaries are much higher than in the regional capital (e.g., Krasnodon, Antratsyt, Sverdlovsk and Rovenki)(Golovne 2013a).

While information on the consumption side of poverty within individual cities is not available, the statistical office has published useful figures for oblasts. Figure 2 illustrates how the consumption of differently priced food items has developed over time in Luhansk, broken by different income groups (IG1-10). The overall trend is that food consumption has increased since 2000, but it is noticeable that higher income groups consume more of everything, including potatoes, Ukraine’s staple food. The consumption gap between IG10 (richest) and income-poor (IG1) is most dramatic for meat and fruit, which are typically more expensive goods. Over time, the consumption gap between rich and poor narrowed considerably; the year 2007 marked the apex of this dietary convergence. The prolonged post-2008 crisis is evident in the sharp decline in

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⁴ Kiev and Sevastopol (on the Crimean peninsula) are special status cities. Among oblast-level statistics, figures for these two cities are always reported separately.
the consumption of meat and fruit among IG1 and IG6 between 2007 and 2011, reversing the previously observable trend of shrinking consumption inequality. In other words, during recent years the poor have been getting poorer again.

Security crisis

Shortly after the fieldwork for this study was completed, Luhansk became one of the epicenters of a violent separatist movement aimed at breaking away Luhansk from Ukraine, with the expectation of a subsequent incorporation into the Russian Federation. As such, it has also become one of the epicenters of the reborn geopolitical struggle between Russia and the West. Since early March, what initially appeared to follow the Crimean annexation template gradually morphed into an escalating armed conflict between Ukrainian governmental forces and separatist troops (partly originating from Russia) fighting for the independence of the so-called Lugansk People’s Republic (LPR). Starting from the regional headquarters of the Ukrainian security services (the SBU) all key buildings in the city have been occupied by separatists. In the meantime, as in neighboring Donetsk, separatist forces staged a widely condemned referendum for independence on 11 May, with over 96 percent of Luhansk’s population allegedly voting for the national sovereignty of the Lugansk People’s Republic, despite the fact that over 60 percent of the city’s residents consider themselves Ukrainian (LPHS2013). Based on these results, and assuming a Russian military intervention in the near future, the separatists declared the region’s independence from Kiev on the next day, expecting prompt recognition by Moscow. That, however, was not forthcoming. Instead, under increasing international pressure, the Kremlin appeared to step back, but all attempts at negotiating a peaceful solution to the conflict have been

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5 This section is based on my interpretation of the daily coverage of the "Ukrainian crisis" in the media. I rely particularly on materials presented by Ukrainian, Italian and Nordic sources, as well as by the main international newspapers and news or news broadcasting agencies. I have also been following and comparing with the Russian sources (including Pervyi Kanal and Russia Today), but by now their credibility has become minimal.

6 When referring to this organization, it is more appropriate to use the Russian spelling, i.e., Lugansk rather than Luhansk.
to no avail, and the situation has once again rapidly deteriorated. With the missile attack on Malaysian Airlines flight MH17 perpetrated by the separatists on 17 July, the conflict turned international, and the political implications of this event are not yet clear. Meanwhile, Ukrainian troops are engaged in a battle to regain control over Luhansk, with an increasing number of casualties among civilians. Effectively beyond the Ukrainian government’s control, the situation in the city at the time of writing is highly volatile, markedly unstable, and extremely dangerous, with new victims now being reported on a daily basis, some as a result of landmines. As a result of the conflict, few residents of the Donbas were able to vote in the recent 25 May presidential elections that put Petro Poroshenko into power; there were no electoral constituencies open in Luhansk.

**Housing in Luhansk**

With respect to its housing supply, Luhansk has not changed much since Soviet times. The only exception is that the housing stock has been almost completely privatized: in 2012, 92.6 percent was in private ownership, 6.2 percent remained in municipal ownership, and 1.2 percent belonged to the state (Golovne 2013b). These figures are approximately the same as in Ukraine as a whole (Zapatrina 2013), while neighboring Russia’s public rental share is more than twice the size (Puzanov 2013). A characteristic of the socialist system that has a strong lingering presence in Luhansk is low residential mobility: once they were housed, Soviet citizens tended to stay put (Borén 2009; French, 1995). According to the LPHS2013, 68 percent of those aged 23+ lived in the same dwelling in 1990 and 2013.

There has been little new housing construction in the city (yearly average of 117 m$^2$ per 1000 inhabitants between 2009 and 2012, compared to 197 m$^2$ for Ukraine as a whole, but only 52 m$^2$ for the *oblast*).(Golovne 2013a). Ukraine’s prolonged economic crisis has deterred investment in new residential developments, bar a handful of new inner-city apartment blocks and the
occasional individual projects or small clusters of detached housing in the urban fringe. These small developments have also spilled over into the neighboring Stanichno-Luhanske, Novoaidar, Slovianoserbsk, Krasnodon, and Bilovodsk rayony (districts), which report similar (low) levels of new construction, suggesting the presence of an embryonic form of suburbanization. Indeed, in 2005, before the crisis, most rayony experienced greater new construction than the core city of Luhansk on a per capita basis (Golovne 2013a). However, while new construction has been limited, most changes in the housing stock have been made through in situ improvements such as renovations and – in the detached housing sector – extensions, similar to other relatively poor post-socialist countries, such as Romania (Soaita 2012) and Georgia and Macedonia (Bouzarovski et al. 2011).

Luhansk has a somewhat poorly defined city center of Soviet vintage, with traces of the city’s 18th century roots scattered within it. Overall, the city is very Soviet in the sense that there are very few remnants of the pre-revolutionary tissue and even fewer structures erected after socialism, apart for the façade layer’s newly grown commercial crust. The LPHS2013 found that the most prestigious areas of the city are the ones surrounding the main axial throughfares, Soviet Street and Defense Street, which are also the least poor according to the poverty measure used in this study (Figures 3a and 3b, see data and methods for details, Figure 4). The least prestigious neighborhoods (Figure 3b) are low-lying and/or peripheral areas characterized by a large share of single-family housing, often juxtaposed with industry (mostly now brownfields)(Figure 3c, Figure 5).
Figures 3a-3c: Neighborhood-level poverty index means (left), mean neighborhood evaluation (middle) and neighborhood-level share of single-family housing (right). Source: LPHS2013.

Figure 4: Prestigious housing in the vicinity of the intersection of Luhansk’s two main arteries. Photo by author, July 2013.
Approximately 30 percent of the housing stock is in the form of single-family dwellings of varying, but generally low, standard. Pockets of well-to-do villas in the inner city are nested within an overall landscape of primitive housing dotted with sporadic luxury renovations. The public infrastructure in single-family housing areas (known as the “private sector” in local parlance) is usually very poor: numerous streets are only accessible with jeep-grade vehicles, streetlights are broken or absent in many areas, and running water and the sewerage system reach about one third of the single-family houses (Golovne 2013b). Conversely, most apartments are located in well-equipped microdistricts (neighbourhood units), but the quality of the buildings themselves varies significantly, a fact that is concealed by the superficial homogeneity of the city’s predominantly Soviet texture. For example, the first-generation low-rise prefabricated panel apartment blocks built in the 1960s are in considerably inferior condition than the late-Soviet high-rise blocks. This difference is partly due to ageing and poor maintenance, and partly to the poor construction quality standards of the Khrushchev époque.
Floor | n  | Percent | Cumulative percent
-----|----|---------|---------------------
1    | 397| 14.2    | 14.2                |
2    | 465| 16.7    | 30.9                |
3    | 480| 17.2    | 48.1                |
4    | 420| 15.1    | 63.2                |
5    | 396| 14.2    | 77.4                |
6    | 142| 5.1     | 82.5                |
7    | 125| 4.5     | 87.0                |
8    | 141| 5.1     | 92.0                |
9    | 133| 4.8     | 96.8                |
10+  | 89 | 3.2     | 100                 |

Table 1: vertical distribution of the population living in apartments.
Source: LPHS2013.

In the vertical dimension, the population living in apartments or (more rarely) dormitories and communal dwellings is rather evenly distributed between the 1st (ground) and 5th floor, and at a lower volumes between the 6th and 9th floors, signaling the ubiquity of the 5-storey elevatorless concept in Soviet cities of Luhansk’s size (Table 1). 9-storey blocks are more common in the newer (chiefly 1970s and 1980s) and usually more peripheral microdistricts. Accordingly, the highest population densities are found at the eastern edge of the compact built-up area, attracting commercial and other functions that one would normally expect to find in the city center, including the city’s only McDonald’s restaurant.

**Data and methods**

The exploratory nature of this study called for the use of a quantitative approach supported by the collection of survey data -- the LPHS2013. Given the overall paucity of available data in Ukraine, there are few alternative data sources at present. The survey was conducted on a contractual basis in cooperation with the Luhansk regional statistical authority under the author’s supervision. The questions were heavily geared toward the housing situation of the population, but the survey also touched upon health, social welfare, and work life.

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7 The 2011 population census was canceled; a new attempt is expected in 2016.
The primary sample was extracted systematically (every 40th dwelling) from an alphabetically ordered list of addresses and dwelling units maintained by the statistical authority with the assumption that each address or dwelling unit (which included rooms within communal apartments or dormitories) is equivalent to one household. Within each household, an eligible respondent (aged 18+) was selected using the next-birthday method, which is less intrusive than other within-household sampling techniques (see Gaziano 2005). Despite these measures, men and younger cohorts are under-represented compared to the official statistics. This under-representation is partly caused by the fact that the sample was drawn from a list of households rather than of individuals (many households consist of lone elderly women), and because the official statistics over-estimate the presence of young men, who happen to be the ones most engaged in unrecorded labor migration flows directed, for the most part, towards Russia (O’Hara et al. 2009; Gentile and Marcińczak 2012). Unfortunately, legal restrictions precluded the use of individual-level sampling frames.

Together with the main sample, two additional equally sized non-response replacement samples were created using the same method. The primary response rate (i.e., from the first sample) was of 77.1 percent. The remaining 22.9 percent who did not, could not or would not participate after at least three (and up to eight) attempts by the interviewer, were thus replaced by a respondent from the second or, when needed, the third samples. The main non-response causes include vacant dwellings or long-term absence from home (45 percent), refusal to enter into communication with the interviewer (i.e., would not open the door, 21 percent), and refusal to

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8 While this is not necessarily always the case, the interviewers reported extremely few cases where dwelling units contained multiple households. A far more frequent occurrence are the multi-generational households, which do not always adhere to the standard household definition (i.e., persons with shared place of residence and shared expenditure, see OECD 2013, pp. 46-47). Rather than being examples of extended households, such arrangements may mean that the shared place of residence is in fact divided within, and/or that not all expenditures are shared the way they usually would be in a single- or two-generation household. In the absence of any viable alternative, such households are treated as regular households that can be controlled for using a ‘number of generations’ independent variable.
take part in the survey (28 percent). Sampling errors, inaccessible properties (e.g., dog-guarded) and respondent physical inability (e.g., because of intoxication, illness, deafness, etc.) to take part accounted for the remaining 6 percent of non-responses. Because the three samples do not differ in any meaningful way, the paper proceeds by using both primary sample respondents and replacements.

The field stage, during which the survey responses were collected, ran between July and October 2013. Following praxis in the post-Soviet region (e.g., Ferlander and Mäkinen 2009; Gentile and Marcińczak 2012; Gustafsson and Nivorozhkina 2004; O’Hara et al. 2008), the survey questionnaires were administered using face-to-face interviews conducted in Russian. The average interview took approximately one hour to complete, but there was plenty of variation. Thirty trained interviewers – all employees of the statistical authority – participated in this process, mostly during the evenings and weekends or by prior agreement with the respondent.

The field stage of the survey involved several steps. First, it was advertised in the local media. Second, the interviewers identified the target dwellings and posted a notice (of household selection) near the main entrance of apartment blocks, the majority of which were made inaccessible by code locks. The notice explained that a particular dwelling was going to be visited for the purpose of the survey and kindly asked the respondent to call the interviewer by phone, if possible. (When this did not happen, the interviewer simply showed up hoping for the best; the code lock was often circumvented using the help of neighbors.) Accordingly, many interviews were made by appointment. Households living in detached housing units were usually approached directly: because the survey was conducted in the summer and early autumn, many respondents were easily approachable in their gardens. Third, the respondents were given the opportunity to call the statistical authority’s main office at any time in order to clarify any possible misunderstandings. This opportunity was used approximately 5-10 times a day.
Data analysis includes a first stage of means comparisons, followed by three sets of multivariate binary logistic regression models, and a multinomial model. The dependent variables in the models measure different degrees of poverty, whereas the independent variables include demographic, social, geographic, and housing-related indicators that may predict poverty outcomes. The following section motivates the choice and inclusion of the variables captured by the models.

**Variables**

Poverty can be studied from different angles, and the studies discussed in the literature review primarily use income or consumption data to determine particular levels of relative or absolute poverty. Consumption and, especially, income are notoriously difficult indicators to work with because of the significant risk of intentional or accidental underreporting. At the high end of the scale, many respondents have little incentive to be completely honest. Conversely, at the low end, there is a slight risk of over-reporting for reasons of social prestige (Tourangeau and Yan 2007), while the economies of mutual assistance so typical of post-Soviet societies (Round and Williams 2010) would be made invisible using a poverty radar solely based on income. Finally, income and explicit consumption questions are missing value magnets, and so too is the case in this study. Initial experimenting with income being used as a dependent variable produced erratic and largely inconclusive results.

Accordingly, following Sen (1983), it is assumed that poverty has an absolute core, and that this core is based on capabilities rather than on commodities per se. Thus, the study’s dependent variable consists of a poverty index that captures the population’s capabilities in relation to a set of needs. The index is based on four questions, each relating to a particular level of need, with the answers being summed up to a value ranging between 4 (absence of poverty) and 16 (extreme
poverty. The questions upon which the poverty index is based are: As a result of material difficulties (original emphasis), during the last 12 months, have you had to: (1) Borrow money for house-related costs or food? (2) Abstain from eating meat or fish? (3) Abstain from buying necessary clothes or footwear? (4) Abstain from going to the movies, to the theatre, or to concerts? The answering options to each of these questions were (a) never, (b) rarely, (c) sometimes, (d) often or (e) don’t know. “Don’t know” answers are treated as missing values in this paper, and are therefore excluded from the index.

A three-question version of the index (using the first, third, and fourth questions) was also tested, producing largely identical results; the decision to settle for the four-question version stems from a desire to harmonize the index used in this article with the one used (as independent variable) in other works relating to the region, e.g., Vågerö and Kislytsina’s (2005, p. 420) study of the impact of poverty on self-rated heart condition in Taganrog, Russia, and Petrova et al.’s (2013) analysis of indoor temperature in Stakhanov, Ukraine.

In the descriptive part of this paper, the poverty index values have been transposed into a 0-10 scale to make them easier to interpret. In the subsequent multivariate analysis, three binary thresholds were defined to distinguish the “at least somewhat poor” (index ≥ 9 on the original scale), the “at least significantly poor” (index ≥ 13) and the “extremely poor” (index ≥ 15) from the rest of the population. For the multinomial analysis, these thresholds were used as cut offs to distinguish between four separate categories. In the full sample, excluding values treated as missing, nearly 60 percent falls under the category of the at least somewhat poor, whereas more than one quarter would be classified as significantly poor and almost one tenth as extremely poor.

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9 This strategy implies that the dependent variables in the binary models overlap. The advantage of choosing this strategy is that the data are broken down in fewer cells, producing more solid results with higher significances. The subsequent multinomial model compensates for the potential loss of information relative to the differences between the more distant ends of the dependent variable.
(Table 2). Because the multivariate analysis includes variables that inherently pertain to the multi-family housing stock, residents of single-family housing (30 percent of the total, \( n=1212 \)) are excluded from this part of the study. The multi-family housing subsample (\( n=2402 \)) is slightly less poor than the overall sample, which is in line with previous observations that the residents of single-family housing in (post-)socialist cities tend(ed) to be disadvantaged (e.g., Szelényi 1983; Alexandrova et al. 2004).

Table 2: descriptive statistics for the dependent variables.

| Dep. variable 1: Under somewhat poor threshold | Overall descriptives | | | | Logit model descriptives | | | | | n | % of total | valid % | n | % of total | |
|-----------------------------------------------|---------------------|---|---|---------------------|---|---|---------------------|---|---|---|
| Dep. variable 2: Under significantly poor threshold | 857 | 21.4 | 25.3 | 588 | 24.5 | |
| Dep. variable 3: Under extremely poor threshold | 324 | 8.1 | 9.6 | 220 | 9.2 | |
| Missing | 617 | 15.4 | 15.4 | 617 | 25.6 | |
| TOTAL | 4000 | 100 | 100 | 2402 | 100 | |

Note: the dependent variable missing values (\( n = 396 \)) and the residents of single-family housing (\( n = 1202 \)) are excluded from the logit models. Source: LPHS2013.

The independent variables in the multivariate analysis belong to four main groups: (a) demographic, (b) socio-economic and (c) housing-specific and (d) locational. The demographic variables include age in six categories, sex, and number of generations present in the household. As discussed above, age and sex have been shown to predict poverty in both the Soviet Union (Ofer and Vinokur 1992) and post-Soviet Ukraine (Brück et al. 2010), but the impact of (old) age has varied over time (Gustafsson and Nivorozhkina 2004). The number of generations, is a new variable in the context of post-communist poverty studies. The assumption is that the number of generations in the household may reflect resource constraints, but it should not be accepted *prima facie*: multi-generational households may well reflect conscious choices aimed at decreasing household fixed costs and thus at increasing welfare. Whatever the case, it is not probable that the wealthier groups would choose to live in such conditions.

The socio-economic variables include the respondent’s level of education (primary, secondary, tertiary), his or her socio-professional status using a somewhat simplified ISCO major groups
classification (see ILO 2014) and whether or not both the respondent’s parents are/were higher educated. Both education and socio-occupational status are important predictors of income and relative wealth – even in the egalitarian Soviet society (cf. Ofer and Vinokur 1992). The dichotomous parental higher education variable aims at detecting social class reproduction (cf. Lareau, 1987).

The housing-related variables include tenure, living in a Khrushchev or Brezhnev type of apartment block vs. other (built 1958-1979 – years that refer to a particular type of housing paradigm, not to the actual duration of these leaders’ rule) and living on the top floor. While tenure is a relatively undisputed predictor of household wealth, the Khrushchev-Brezhnev style apartment blocks are usually considered to be of inferior quality compared with the Stalin-era buildings and the newest panel blocks from the 1980s and early 1990s (Kährk and Tammaru 2010).

Even at the very micro-level, studies concerned with the diverse spatial expressions of poverty in high-rise estates are horizontal in nature (Temelovaná et al. 2011). By introducing the top floor variable, the analysis responds to recent calls to sensitize urban research to the vertical dimensions of urban social space (Graham and Lewitt 2013). While the meaning of the top floor may differ across contexts, in the post-Soviet region, it is often associated with roof-leakage problems, whereas the bottom floor is thought of as being an easier target for burglars. However, the latter has become valorized under transition because of its potential for conversion to commercial purposes, which is why it is not included as a separate variable (it was tested, however, without revealing any significant effects, see also Table 4).

The locational variables are “living in the city center” and “living in a bad area”. The relative location variable dichotomizes an existing more refined variable by selecting the region that was
most statistically meaningful and comparing it to the rest of the city. The definition of “bad area” was created by the respondents themselves, who were asked to evaluate a list of 31 well-defined regions on a 1-5 rating scale. The mean of these evaluations was then calculated for all areas, allowing the identification of “bad” (up to 2.99 points) and ‘good’ areas (3 or more points) (for more on this method, see Gentile 2014; cf. also Permentier et al. 2008). The locational variables are presented as dichotomous for methodological reasons: using more categories produces less statistically significant (but otherwise similar) results due to sample size. Based on the existing literature on the communist and post-communist city (Szelényi 1983; Hamilton 1993; Gentile 2003; Alexandrova et al. 2004), the population living in the city center and in “good” areas is expected to be less poor. Finally, I tested for plausible interactions detecting only one significant effect. Model 1 includes an interaction effect between “bad area” and “top floor”.

Results

Table 3 presents the dependent variable’s observed means for the full sample of 4,000 respondents. Women and the elderly are poorer than men and the younger cohorts, education pays, managers are well-off while unskilled workers are poorer. City center residents are clearly wealthier than those living elsewhere, and life in “good” areas appears to be somewhat better-off. Finally, wealthier residents are found in purchased housing (rather than acquired through direct privatization of former municipal or state housing), as well as in the better-quality mature socialist and post-Soviet units. Among apartment dwellers, those living on the top floor are poorer.
Table 3: Sample descriptives for full sample and poverty index means transposed into a scale from 0 (absence of poverty) 10 (maximum poverty)

<table>
<thead>
<tr>
<th>Gender:</th>
<th>Location:</th>
<th>n</th>
<th>Mean (excl. missing)</th>
<th>St. dev.</th>
<th>n</th>
<th>Mean (excl. missing)</th>
<th>St. dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Central</td>
<td>1312</td>
<td>3.92</td>
<td>2.92</td>
<td>406</td>
<td>3.56</td>
<td>3.09</td>
</tr>
<tr>
<td>Female</td>
<td>Semi-peripheral</td>
<td>2688</td>
<td>5.04</td>
<td>2.98</td>
<td>486</td>
<td>4.83</td>
<td>3.20</td>
</tr>
<tr>
<td>Number of generations:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-generation household</td>
<td>Isolated peripheral</td>
<td>1610</td>
<td>4.88</td>
<td>3.02</td>
<td>201</td>
<td>4.44</td>
<td>2.77</td>
</tr>
<tr>
<td>Two-generation household</td>
<td>Peripheral</td>
<td>1659</td>
<td>4.43</td>
<td>3.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-generation household</td>
<td>18-29</td>
<td>669</td>
<td>4.84</td>
<td>2.92</td>
<td>607</td>
<td>3.76</td>
<td>2.79</td>
</tr>
<tr>
<td>Four-generation household</td>
<td>30-39</td>
<td>30</td>
<td>4.55</td>
<td>3.01</td>
<td>661</td>
<td>4.28</td>
<td>3.00</td>
</tr>
<tr>
<td>Education (attained level):</td>
<td>40-49</td>
<td>529</td>
<td>3.98</td>
<td>2.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary or less</td>
<td>50-59</td>
<td>739</td>
<td>4.63</td>
<td>2.95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>60-69</td>
<td>650</td>
<td>5.27</td>
<td>3.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>70+</td>
<td>794</td>
<td>6.00</td>
<td>2.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both parents have tertiary education</td>
<td>Single-family housing</td>
<td>595</td>
<td>3.11</td>
<td>2.77</td>
<td>1212</td>
<td>4.87</td>
<td>3.05</td>
</tr>
<tr>
<td>At the most one parent has tertiary education</td>
<td>Apartments and other living arrangements</td>
<td>1020</td>
<td>4.97</td>
<td>2.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socio-professional status:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unskilled worker</td>
<td>150</td>
<td>5.37</td>
<td>2.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-skilled or skilled workers</td>
<td>Privatized</td>
<td>693</td>
<td>4.14</td>
<td>2.82</td>
<td>1953</td>
<td>4.94</td>
<td>2.93</td>
</tr>
<tr>
<td>Civil servants and professionals</td>
<td>Purchased</td>
<td>864</td>
<td>4.06</td>
<td>2.82</td>
<td>697</td>
<td>3.87</td>
<td>2.89</td>
</tr>
<tr>
<td>Managers</td>
<td>131</td>
<td>2.26</td>
<td>2.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economically inactive</td>
<td>2022</td>
<td>5.32</td>
<td>3.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other, including unemployed and military</td>
<td>Status quo (e.g. cooperative both in 1991 and today)</td>
<td>896</td>
<td>4.60</td>
<td>3.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing year of construction:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tsarist (until 1917)</td>
<td>52</td>
<td>4.24</td>
<td>3.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-war (1918-1939)</td>
<td>223</td>
<td>5.06</td>
<td>3.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stalinist era type (1940-1957)</td>
<td>Top floor</td>
<td>465</td>
<td>5.22</td>
<td>2.92</td>
<td>424</td>
<td>5.11</td>
<td>3.03</td>
</tr>
<tr>
<td>Krushchev era type (1958-1968)</td>
<td>Other floor</td>
<td>792</td>
<td>5.23</td>
<td>2.99</td>
<td>1978</td>
<td>4.48</td>
<td>2.97</td>
</tr>
<tr>
<td>Brezhnev era type (1969-1979)</td>
<td>Other floor</td>
<td>730</td>
<td>4.98</td>
<td>3.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Soviet (after 1991)</td>
<td>211</td>
<td>4.13</td>
<td>2.98</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown building year</td>
<td>725</td>
<td>4.18</td>
<td>3.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.67</td>
</tr>
</tbody>
</table>

Source: LPHS2013. Note: the transposed means were calculated as $m_2 = (m_1 - 4)\frac{10}{12}$ where $m_1$ and $m_2$ are the original and transposed means, respectively.

That top-floor residents are poorer suggests a degree of vertical socio-economic differentiation that deserves more careful examination. Table 4 dissects the poverty means by the vertical location of the respondents within their respective buildings. Because most high-rise apartment blocks in Luhansk are either five- or nine-storey structures, buildings of this height are the only ones for which there is a sample large enough to draw firm conclusions.
First of all, the residents of five-storey buildings are poorer than those who live in nine-storey blocks. Five-storey buildings are almost always older and presumably in poorer state of repair, and they are less valued because of the absence of elevators. Moreover, their residents are on average three years older than the residents of nine-storey buildings. Even so, top-floor residents of both types of buildings are substantially poorer than their lower-dwelling neighbors. The difference is particularly striking in the taller buildings, where the middle floor also appears to be the wealthiest one. Surprisingly, the ground floor does not differ much from the intermediate floors, probably because of the overall commercialization of the street layer of the city that has taken place since the end of socialism, valorizing the accessibility and conversion potential of these dwellings. Despite the small subsample size for 3- and 4-storey buildings, the pattern is consistent in these structures too.

Table 4: Poverty index mean in the vertical dimension (0-10 scale).

<table>
<thead>
<tr>
<th>Floor</th>
<th>Building height</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3-storey (n=56)</td>
</tr>
<tr>
<td>1st (ground floor)</td>
<td>4.46</td>
</tr>
<tr>
<td>2nd</td>
<td>3.37</td>
</tr>
<tr>
<td>3rd</td>
<td>5.21</td>
</tr>
<tr>
<td>4th</td>
<td>5.51</td>
</tr>
<tr>
<td>5th</td>
<td>5.18</td>
</tr>
<tr>
<td>6th</td>
<td></td>
</tr>
<tr>
<td>7th</td>
<td></td>
</tr>
<tr>
<td>8th</td>
<td></td>
</tr>
<tr>
<td>9th</td>
<td>5.25</td>
</tr>
<tr>
<td>MEAN</td>
<td>4.23</td>
</tr>
</tbody>
</table>

Source: LPHS2013.

While these findings about the vertical dimension of urban poverty in the post-communist city are new, they require confirmation using multivariate methods to control for the effect of other intervening variables. Therefore, we now move to the results of the multivariate logit models pertaining to the dominant apartment segment of the housing stock only (n=2402 after sorting out the 1212 respondents living in single-family housing and the 396 observations with missing values for the dependent variable). Of course, we already know that many poor people live in
single-family housing, but the sample size available for this segment is too small to support a separate multivariate modeling exercise.

Table 5 reports the results of the binary logistic regressions on the “at least somewhat poor” (M1), “at least significantly poor” (M2) and “extremely poor” (M3) dependent variables.\(^\text{10}\) M1 interestingly indicates that “some poverty” prevails in Khrushchev- or Brezhnev-type apartments, as well as on top floors and among renters. Secondly, it is apparent that the somewhat poor are over-represented in “bad areas” and under-represented in the city center. However, the strongest effect appears when the top floor and bad area variables interact: clearly, the 40+ percent who are not at least somewhat poor shun this particular combination. Respondent education (as proxy for social status) and socio-occupational status behave as expected, with higher education and managerial jobs substantially reducing the risk of poverty. Less expected, however, is the fact that parental higher education so strongly repels poverty, irrespective of the respondents’ own level of education. This indicates that the reproduction of social class in Ukraine today is rooted in the class divisions that existed in Soviet times, and that these divisions were quite similar to those in the West (cf. Lareau, 1987). The effects of the demographic variables are in line with expectations, with women, those aged 70+ and multi-generational households more likely to be at least somewhat poor.\(^\text{11}\) All in all, these results suggest that a three-dimensional geographical patterning of poverty coexists with the more traditional demographic and socio-economic

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\(^{10}\) What are most interesting to study are the antilogged values of the regression logits (Exp(B)), which are interpreted as odds ratios vis-à-vis a reference category. Values greater than 1 are interpreted as higher odds and values smaller than 1 as lower odds. The Wald test yields a value indicative of each variable's contribution to the model. Finally, it is important to take note of the Nagelkerke pseudo-$r^2$, which is interpreted as an approximation of the percentage of the total variance that the model explains, and of the Hosmer-Lemeshow goodness-of-fit test, which ideally should not be statistically significant (i.e., greater than 0.05) to pass the test. The Nagelkerke pseudo-$r^2$ values in this study are normal for the social sciences, and the Hosmer-Lemeshow statistics are all acceptable.

\(^{11}\) However, because the questions that the dependent variable is based on refer to the household, and not to the individual, the explanation of the discrepancy between male and female poverty is likely complex. First of all, it is influenced by the number and share of households that do not have male adult members (this share is probably high in Ukraine because of high male adult excess mortality, see Brainerd and Cutler 2005). Because women usually have significantly lower incomes, they are also likely to experience greater poverty. Second, it is possible that female respondents may perceive poverty in a different way, not least because of their closer engagement with the everyday household economy. In other words, as a group, it is likely that women both experience and perceive more poverty.
predictors, largely confirming findings from previous work on poverty in CEE, particularly with reference to the second decade of transition (cf. Brück et al. 2010).

Table 5: Binary logistic regression models.

<table>
<thead>
<tr>
<th>Full models</th>
<th>M1: dep. variable 'somewhat poor'</th>
<th>M2: dep. variable 'significantly poor'</th>
<th>M3 dep. variable 'extremely poor'</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=2402</td>
<td>Wald</td>
<td>Exp(B)</td>
<td>Wald</td>
</tr>
<tr>
<td>Constant</td>
<td>0.027</td>
<td>1.054</td>
<td>15.112</td>
</tr>
<tr>
<td>18-29 (ref.)</td>
<td>24.346</td>
<td>31.515</td>
<td>7.581</td>
</tr>
<tr>
<td>30-39</td>
<td>2.572</td>
<td>1.278</td>
<td>3.774</td>
</tr>
<tr>
<td>40-49</td>
<td>0.891</td>
<td>0.849</td>
<td>0.186</td>
</tr>
<tr>
<td>50-59</td>
<td>2.11</td>
<td>1.257</td>
<td>8.101</td>
</tr>
<tr>
<td>60-69</td>
<td>2.976</td>
<td>1.358*</td>
<td>13.377</td>
</tr>
<tr>
<td>Male (ref. Female)</td>
<td>44.031</td>
<td>0.513***</td>
<td>24.158</td>
</tr>
<tr>
<td>Generations</td>
<td>5.433</td>
<td>1.175**</td>
<td>0.188</td>
</tr>
<tr>
<td>Tertiary education (ref.)</td>
<td>18.681</td>
<td>20.45</td>
<td>8.903</td>
</tr>
<tr>
<td>Primary education</td>
<td>6.614</td>
<td>1.49***</td>
<td>16.793</td>
</tr>
<tr>
<td>Secondary education</td>
<td>17.289</td>
<td>1.55***</td>
<td>13.06</td>
</tr>
<tr>
<td>Both parents have higher education (ref. Other)</td>
<td>36.043</td>
<td>0.464***</td>
<td>7.367</td>
</tr>
<tr>
<td>Unskilled workers (ref.)</td>
<td>18.294</td>
<td>17.642</td>
<td>9.011</td>
</tr>
<tr>
<td>Semi-skilled or skilled workers</td>
<td>1.324</td>
<td>0.742**</td>
<td>8.936</td>
</tr>
<tr>
<td>Civil servants and professionals</td>
<td>0.45</td>
<td>0.84</td>
<td>11.468</td>
</tr>
<tr>
<td>Managers</td>
<td>12.159</td>
<td>0.272***</td>
<td>9.999</td>
</tr>
<tr>
<td>Economically inactive</td>
<td>0.164</td>
<td>0.901</td>
<td>4.65</td>
</tr>
<tr>
<td>Other occ. status (includes e.g. unemployed and military)</td>
<td>0.029</td>
<td>1.063</td>
<td>4.412</td>
</tr>
<tr>
<td>Khrushchev- or Brezhnev-type housing</td>
<td>16.418</td>
<td>1.479***</td>
<td>15.366</td>
</tr>
<tr>
<td>Top floor (ref. Other floor)</td>
<td>3.68</td>
<td>1.272*</td>
<td>13.383</td>
</tr>
<tr>
<td>Bad area (ref. Other area)</td>
<td>4.74</td>
<td>1.652**</td>
<td>28.227</td>
</tr>
<tr>
<td>Interaction effect (top floor*bad area)</td>
<td>3.913</td>
<td>3.773**</td>
<td></td>
</tr>
<tr>
<td>City centre (ref. Other)</td>
<td>7.593</td>
<td>0.681***</td>
<td>0.177</td>
</tr>
<tr>
<td>Privatized dwelling (ref.)</td>
<td>31.717</td>
<td>17.057</td>
<td>7.489</td>
</tr>
<tr>
<td>Purchased dwelling</td>
<td>14.804</td>
<td>0.624***</td>
<td>7.482</td>
</tr>
<tr>
<td>Rented dwelling</td>
<td>6.012</td>
<td>1.512**</td>
<td>0.423</td>
</tr>
<tr>
<td>Status quo (e.g. cooperative both in 1991 and today)</td>
<td>6.672</td>
<td>0.565***</td>
<td>9.157</td>
</tr>
<tr>
<td>Nagelkerke pseudo-$R^2$</td>
<td>0.206</td>
<td>0.207</td>
<td>0.143</td>
</tr>
<tr>
<td>$\chi^2$</td>
<td>df</td>
<td>Sig.</td>
<td>$\chi^2$</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>590.7</td>
<td>23</td>
<td>351.8</td>
</tr>
<tr>
<td>Hosmer-Lemeshow goodness-of-fit</td>
<td>11.1</td>
<td>8</td>
<td>0.197</td>
</tr>
</tbody>
</table>

Note: Significance: *0.1, **0.05, ***0.01. The variables have been tested for collinearity by controlling their value inflation factors (VIF). Source: based on LPHS2013.
While the dependent variable in M1 essentially captures a large share of the middle socio-economic strata of society, we can assume that those living on or below the threshold set in M2 (13 points in the poverty index) experience living conditions that are proximate to Sen’s (1983) absolute core of poverty: there really isn’t much that the respondents can afford at this level. In M2, the housing variables are more vigorous compared to the at-least-somewhat-poor model, particularly living on the top floor and in Khrushchev-Brezhnev style apartment blocks.

Conversely, purchased apartments and “status quo since the Soviet demise” dwellings (i.e., mainly cooperative apartments) are less likely to be occupied by residents experiencing poverty at this level. Among the locational factors, living in a “bad” area emerges as the single most important predictor of poverty besides old age (70+) and unskilled work. However, the odds for living in the center are approximately the same on either side of the poverty threshold. This means that at a level where poverty really matters, so does space, both horizontal and vertical. The fact that the role of the city center appears to have changed compared to the previous model suggests that the poorer strata of the middle class typically reside in the peripheral high-rise housing estates, whereas the city center has a more dualized social structure. This does not necessarily imply social mixing. To the contrary, central Luhansk includes areas endowed with prestigious Stalinist and late-Soviet apartment blocks (such as those lining Soviet Street) as well as clusters of dilapidated inter-war low-rise buildings. These differences go hand in hand with the geography of poverty: a closer examination of the poverty index means in the central zone’s separate neighborhoods (too many to be included as dummies) reveals values that range between just over 3 and almost 7 points on the adjusted 0-10 poverty index, including the city’s poorest and second most affluent area.

Education and parental higher education both make substantial independent contributions, as does socio-occupational status: all socio-occupational groups – even the economically inactive – have lower or much lower odds of being poor compared to the unskilled workers. The unskilled
workers are those who are most likely to earn close to the 1134 UAH minimum wage (Golovne
2013a, pp. 315-316), which does not allow subsistence without the input of additional livelihood
sources. They probably also have less available time for secondary economy activities compared
to the inactive population, which further contributes to the severity of their situation. The
demographic variables reveal similar patterns as in M1, but the effect of age is magnified and
extended to all 50+ age groups, while the number of generations no longer matters. This suggests
that multi-generational households are more common among the less affluent, but that they do
not prevail among the poorest quarter of the population. More generations might simply mean
that more time can be spent working when grandparents take care of the household chores, thus
curbing the risk of poverty.

M3 uses “extreme poverty” as the dependent variable, and shows that the 9 percent that are
misfortunate enough to belong to this category live in truly destitute conditions. With relatively
few observations, the model’s explanatory power is reduced, and the covariates tend to struggle
to achieve significance. Despite these limitations, a very interesting pattern emerges. On the one
hand, while the demographic and socio-economic variables behave in approximately the same
way as they did in the previous models, the effect of the housing and locational variables
increases substantially, with Khrushchev-Brezhnev type housing and, especially, living in “bad
areas” being particularly evident predictors of extreme poverty. On the other hand, top-floor
living is not significantly associated with extreme poverty, although this probably has to do with
the limited size of the sample (the odds ratio is rather similar to the one in the previous model).
Table 6: Multinomial logistic regression on categorized poverty index scores (selection of key variables).

<table>
<thead>
<tr>
<th>Ref. category:</th>
<th>Somewhat poor (9 to 12 points)</th>
<th>Poor (13-14 points)</th>
<th>Extremely poor (15 to 16 points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=2402</td>
<td>日产</td>
<td>Exp(B)</td>
<td>Wald</td>
</tr>
<tr>
<td>Primary education (ref. tertiary)</td>
<td>0.842</td>
<td>1.174</td>
<td>9.753</td>
</tr>
<tr>
<td>Secondary education (ref. tertiary)</td>
<td>9.232</td>
<td>1.423***</td>
<td>20.414</td>
</tr>
<tr>
<td>Both parents have higher education (ref. at the most one)</td>
<td>28.201</td>
<td>0.475***</td>
<td>12.749</td>
</tr>
<tr>
<td>Khrushchev- or Brezhnev-type housing</td>
<td>7.583</td>
<td>1.34***</td>
<td>8.545</td>
</tr>
<tr>
<td>Top floor (ref. Other)</td>
<td>1.179</td>
<td>1.16</td>
<td>12.395</td>
</tr>
<tr>
<td>Bad area (ref. Other)</td>
<td>2.217</td>
<td>1.431</td>
<td>10.423</td>
</tr>
<tr>
<td>Nagelkerke pseudo-r²</td>
<td>0.191</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Likelihood ratio test</td>
<td>$\chi^2$</td>
<td>df</td>
<td>Sig.</td>
</tr>
<tr>
<td></td>
<td>625.367</td>
<td>66</td>
<td>0</td>
</tr>
</tbody>
</table>

The binary dependent variable strategy used so far might conceal some important differences between the more distant poverty-defined groups. The results reported in Table 6 explore whether this is the case using a multinomial model. The dependent variable is the poverty index broken into four categories separated by the thresholds used in the binary models, and the non-poor are the reference group. The independent variables are the same as in Table 5, without the interaction effect in M1, but for parsimony only key social and housing-related variables are reported. These are the variables from which the most interesting new insights emerge. First, it is worth noting that, with the exception of the decisive role of parental higher education, the differences between the non-poor and the somewhat poor are expectably more moderate than in the binary model, where all degrees of poverty were merged. More importantly, however, the multinomial model shows that the vertical (top floor variable) and horizontal (bad area, Khrushchev-Brezhnev housing) distance between the non-poor and the poor increases as the poverty gap expands.

**Conclusions: Khrushchev-era blocks, “bad” areas and the pauvre-étage**

Because poverty in post-socialist transition is a complex phenomenon with considerable local variation in patterns and causation, understanding it calls for context-sensitive research. The Donbas alone illustrates this nicely: while higher-educated white-collar workers represent the core of the non-poor in Luhansk, the picture is probably very different in other local mining cities,
where the earth’s surface literally separates the poor daylight wage earners from the relatively well-heeled ones working underneath them. Conversely, Luhansk’s experience is comparable to that of many other Ukrainian and post-Soviet regional capitals with relatively diversified economic bases and, I would venture, to that of almost any city in its size group during the first decade of transition, when modern real estate markets had yet to emerge and the housing privatization process was still ongoing.

Resting on evidence from Luhansk, this study showed that the contemporary determinants and spatial patterns of poverty in the post-Soviet city are fundamentally similar to those present in the Soviet Union before the perestroika: the socialist poor identified by Ofer and Vinokur (1992) were the same groups that are poor more than three decades later. Moreover, it appears that the Soviet-era geographies of poverty are resilient to the systemic changes that have washed across Ukraine since the early 1990s, and studies on the modest changes in social-spatial segregation in other post-socialist countries (Marciniacz et al. 2013 and 2014a) confirm this as a general trend. Conversely, the non-poor today are those who would most likely not have been poor in the past. This may be interpreted in two, perhaps complementary, ways: (a) that poverty has the same causes under both socialism and capitalism, and (b) that Soviet poverty patterns are directly inherited from the past and subsequently reproduced as such. Privilege and wealth were not explored in this study, but the increasing spatial secession of the affluent from society at large has been attentively described elsewhere (Hirt 2012). Put differently, where residential mobility is low, poor people stay put and the more affluent move. They may move away from areas of poor repute, from top floors with ceiling leakages, from drafty Khrushchev-era blocks, or from the city altogether in the direction of secluded new suburban (possibly gated) developments. Even so, non-affluence – and immobility – are the austere norm that is hidden behind the multitude of case studies of post-socialist urban transformation. Of course, the degree and extent of poverty differ substantially between the wealthier countries of East Central Europe and most of the
Former Soviet Union, but immobility crucially influences post-socialist segregation patterns, whether it be by preventing the acceleration of residential social segregation in areas that attract newcomers (a situation of dynamic status quo, e.g. in Vilnius or Tallinn, cf. Marcińczak et al. 2014b), or by simply freezing the patterns inherited from the past (static status quo). Luhansk, and perhaps most other regional capitals in the post-Soviet realm (cf. Zavisca 2012), is a good example of the latter situation.

Rather than supporting or refuting any of the recent theorizations on the development of urban areas after socialism (Gentile et al. 2012; Sýkora and Bouzarovski 2012; Golubchikov et al. 2014), the findings in this article deliver new insights and respond to recent calls for increased sensitivity toward the non-horizontal dimensions of contemporary urbanism (Graham and Hewitt 2013). The literature on (post-) socialist cities has put much effort into disentangling the rising-or-not-rising segregation dispute, and that case is not yet closed. This work reveals that the socio-spatial landscape of the Ukrainian city is assertively three-dimensional, and that the characteristics of the vertical dimension bear the imprint of housing allocation under socialism. Given a context of very low residential mobility, the market transactions that have taken place during the years that have elapsed can only partly explain the differences in poverty that have been unearthed in this study.

This study’s most intriguing results pertain to the geographical and housing-related indicators, which most poverty studies in the region have not been able to capture. While it perhaps is not surprising to learn that the residents of Khrushchev- and Brezhnev-era blocks are poorer, or that buyers are wealthier, the vertical dimension of poverty has hitherto escaped the eye of urban scholarship interested in the region: Luhansk’s apartment buildings contain a *panvre-étage* at the very top, particularly in the ubiquitous nine-storey blocks. Conversely, if a *bel-étage* may be identified at all, it tends to be somewhere in the middle of the building. Finally, the strong
presence of the poor in “bad” areas reminds us of the fact that urban inequalities were rife in the socialist city (Alexandrova et al. 2004), even in overwhelmingly Soviet-garbed cities such as Luhansk, and that these Soviet-made inequalities coexist with, and probably prevail over, the inequalities created by a generation’s worth of capitalism. Certainly, the conservation of Soviet patterns may reflect the uneven keystrokes of capitalism, but the patterns themselves are indubitably Soviet nonetheless.

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References


