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A Critical-Realist View of Housing Quality within the Post-Communist EU States: Progressing towards a Middle-Range Explanation

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ABSTRACT *Employing a long-term perspective, we explore whether ideologically rooted quality outcomes of housing provision under communism have persisted during the post-communist construction of housing markets. Drawing on theories of path-dependent change, we hypothesize that patterns of housing quality still reflect past lines of division, namely the Soviet housing model, and the classical and reformist models of the Eastern Bloc. Using a critical-realist approach to housing quality, we relate households' experiences to key underlying structures; this ontological depth is then operationalized by means of micro- and macro-indicators used as input for hierarchical cluster analyses. Findings support our main hypothesis, yet there is more diversity in households' experiences than initially assumed. Our study advances a valuable middle-range epistemological frame for understanding the complex social reality of housing and helps shatter the growing view that communist housing systems were all too similar.*

KEY WORDS: Housing quality, Path dependence, Cluster analysis, Post-communism, Eastern Europe

1. Introduction

The Global Financial Crisis (GFC) exposed the vulnerable position of housing in the political economy of financialized capitalism (Lapavistas 2009). If financial innovations expanded mortgaged homeownership to previously excluded groups, “created” housing wealth during booms and made this wealth more liquid to draw upon (Smith and Searle 2010), the subsequent events reminded us that no one can create something from nothing. Home values crashed, interest rates were cut to historic lows, billions of newly printed money flooded the global economy and too-big-to-fail

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banks were bailed out, transforming a private into a public debt crisis. We now know more about the causes and implications of these events (Jones, Cowe and Trevillion, 2017; Stiglitz 2013) yet one can still observe the ubiquitous Anglo-Saxon focus of these narratives.

We bring a contra-point to this dominant story by focusing on the housing systems of the post-communist states. The GFC did ripple out to these economies to various degrees, but economic recessions were much smaller than those of the 1990s (Table A1 in online annex). Although the housing booms in some of these countries were amongst the highest and the busts amongst the deepest globally, housing volatility had modest impacts on economies and households as most homes are owned outright and residential mobility is low. Described as “property without markets” (Zavisca 2012) and “super-ownership societies” (Lowe and Tsenkova 2003), the post-communist housing systems pose the main issue of housing quality rather than housing volatility and debt (Norris and Shiels 2007). While the welfare role of outright homeownership has been recognized (Stephens, Lux, and Sunega 2015; Struyk 1996), the implications of housing quality to households’ well-being received less attention (Mandič 2010; Mandic and Cirman 2011; Soaita 2014).

This paper aims to examine the extent to which patterns of housing quality across the 11 post-communist EU countries¹ share commonalities, and where differences arise. We acknowledge that comparisons are not neutral epistemological devices: too far a distance obscures dissimilarities, whereas too close-up a view enhances diversity. Along this line, fresh debate is emerging amongst scholars drawing attention to ideas of persistent similarity (Stephens 2010; Stephens, Lux, and Sunega 2015), and those observing emerging divergence (Hegedüs, Lux, and Teller 2013; Miao and Maclellann 2016). We contribute to this debate by employing a critical-realist approach to the conceptualization of housing quality, in order to explore whether ideologically rooted quality outcomes of housing provision during communism have persisted during the post-communist construction of housing markets.

Critical-realism was developed as a philosophy of the social sciences by Bhaskar (1989), further advanced by sociologists, most notably Archer (1995) and Sayer (1992), having also inspired some noteworthy housing analyses (e.g. Fitzpatrick 2005; Lawson 2003). Rooted in the key critical-realist concept of “stratified ontology”, we relate households’ experiences of housing quality (the top level of reality) to key “underlying structures” (the deepest level of reality). This ontological depth is then operationalized by means of micro- and macro-indicators, used as inputs for an explorative hierarchical cluster analysis in order to discover patterns across countries and to reflect on some of the causal mechanisms that have shaped them.

Our analysis rests on theories of path-dependent change (Archer 1995) in order to understand the ways in which past legacies and novel (dis)continuities combine to shape current housing quality outcomes. Building on Kornai’s (1992) distinction between the political economies of *reformist* and *classical* communist states, and Hegedüs and Tosics’s (1992) differentiation between the housing models of the Eastern Bloc and the USSR, we find that countries still cluster along historic differences, yet there is more diversity in households’ experiences than initially assumed.

The importance of our analysis is twofold. First, discovering patterns of difference and similarity across countries brings a valuable epistemological framework to understanding the complex social reality of housing in order to inform policy questions, contextualize specific analyses or appreciate why expectations and aspirations may differ. Second, we problematize the uncritical view that communist housing

systems were all too similar and bring necessary nuances to the over-generalist labeling of “post-communism”. The paper advances as follows. Section 2 outlines our conceptual and analytical approach to housing quality. Section 3 problematizes the claim that communist housing systems were all too similar by distinguishing between three different housing models; we hypothesize that ideologically rooted quality outcomes of housing provision under communism are still relevant today. Section 4 maps some important post-communist developments in the housing systems and allied socio-economic and demographic structures across countries, particularly after 2000. We present the methodology in Section 5 and the results in Section 6. Section 7 reflects on the broader implications of our analysis and raises some questions for future research.

2. The Ontological Depth of Housing Quality: A Critical-Realist View

There is no shortage of approaches to conceptualize housing quality at the level of households (for a review see Clapham, Clark, and Gibb 2012). Embedded in the theoretical perspectives of particular disciplines/analysts, housing quality has been seen, sometimes un-problematically, as the realization of preferences (economics), well-being (psychology) or normative standards (policy). Structurally inspired accounts tended to see housing quality as an outcome of interacting structural socio-economic, policy and institutional processes, being stratified along social class, space, ethnicity or gender. Our theoretical position follows Kemeny’s (1988, 212) call for a critical awareness regarding the social construction of “housing reality” as “the interaction between structural factors and the actions and counteractions of individuals as they struggle to make sense of their world, come to terms with it or attempt to change it” as well as “by one definition of reality being imposed on other individuals through the exercise of power in institution”. To this aim, we find the critical-realist concepts of open system and ontological depth (Bhaskar 1989) particularly helpful for anchoring our analytical framework.

Bhaskar’s (1989) critical-realist philosophy conceives social systems as being inherently open; it follows that housing outcomes are shaped by forces both within and beyond “housing systems”.² This view permeates recent conceptualizations of housing or residential “regimes”, which recognises housing’s wider societal implications and engages with Esping-Andersen’s (1990) theory of welfare-state regimes, and Hall and Soskice’s (2001) political economic thesis of varieties of capitalism (e.g. Dewilde and De Decker 2016; Hoekstra 2010; Lapavistas 2009; Schwartz and Seabrooke 2009).

Not only are social systems inherently open, but they have “ontological depth”, as Bhaskar (1989) argues. Accordingly, households’ experiences of housing quality can be viewed as the upper layer of “the empirical” (what we can directly experience and observe). The deepest stratum of “the real” (all that exists) consists of underlying social structures that influence the empirical configurations, including potential, yet not actualized powers of objects/structures. The middle echelon of “the actual” contains generative mechanisms which activate (or inhibit) the power of structures, causing the patterned occurrence of empirical events/facts. Such mechanisms could be conceived of as ideologies, social norms, legal rules or processes. While identifying causal mechanisms constitutes the core of critical-realist explanations, the acknowledged difficulty of identifying them in substantive research has not escaped criticism (Demetriou 2009; Reed 2008; Reiss 2007).

Drawing on this critical-realist perspective, we relate households' experiences of housing quality ("the empirical") to key underlying structures ("the real"). Based on existing literature, the concluding section will flag some causal mechanisms as possible explanations of our results. Figure 1 presents this critical-realist view on housing quality.

Building on previous scholarship (Mandič 2010; Mandić and Cirman 2011; Norris and Shiels 2007; Soaita 2014), we consider three key dimensions of housing quality at the level of households: housing conditions, by which we understand the materiality of the home and its location; households' occupancy arrangements, which are complex outcomes of affordability levels, cultural values, housing strategies and consumer choices; and housing inequality through place and income. These dimensions are important for the extent to which housing provides a space of shelter, a place of home, a symbol of social status and a gate to citizenship rights.³ We show in Sections 2 and 3 that most citizens were poorly housed by the end of communism and housing quality has since remained problematic, more so in some countries than others. To enable cross-country comparability, we opt for accepted normative/'objective' measures with no assumptions of these matching individual preferences or policy aims (Mandić and Cirman 2011; Norris and Shiels 2007).

Drawing on scholarship relating housing to wider social structures, we consider five key underlying structures that influence households' housing quality (Figure 1). It has been widely recognized that housing systems and/or outcomes are embedded in the social structures of the political economy (e.g. Aalbers and Christophers 2014; Bourdieu 2005) as much as they are shaped by housing policies (Kemeny 1981). Analysing the relative weight of levels of economic development versus recognized models of housing policy regimes in the EU, Mandić and Cirman (2011, 782) argue that "differences in housing quality reflect differences in levels of wealth among nations", with economic development being "the single, most important determinant". The second though much weaker structural determinant was the past experience of communist housing provision, which was associated with somewhat better housing conditions than those expected by a country's wealth. Hence, our first and second structural domains refer to economic structures and communist housing policies, respectively.

As housing policies since 1989 have concentrated on the construction of neoliberal markets as devices for the provision and distribution of houses and finance (Clapham et al. 1996; Struyk 1996), the housing market constitutes the third structural domain in our analysis, although its more informal and less dynamic nature in the post-communist space has been recognized (Stephens, Lux, and Sunega 2015; Struyk 1996; Zavisca 2012). Our fourth structural domain refers to changing demographics,

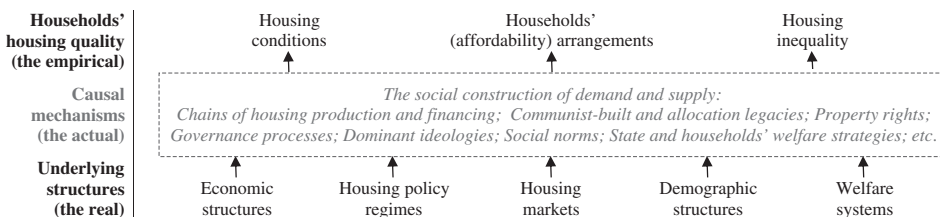


Figure 1. A critical-realist approach to housing quality.

which impact on dynamics between supply and demand. While the concepts of life-cycle, life course, pathways and transitions aim at understanding individuals' consumption needs and practices (Clapham, Clark, and Gibb 2012), these are situated in the possibilities resulting from population growth or decline; the latter has indeed become a key political concern in many post-communist nations. Finally, our fifth domain recognizes the welfare system's power over the cost of housing (e.g. De Decker and Dewilde 2010; Delfani, De Deken, and Dewilde 2014, 2015). While not negligible, housing subsidies are notoriously difficult to measure, particularly in the post-communist countries (e.g. untaxed grey-economy, planning breaches, discounts in post-communist housing privatization and land restitutions, VAT reduction and mortgage guarantees); conversely, direct governmental housing expenditure is close to null (Eurostat 2016). Therefore, risks of poverty and social exclusion, related as they are to both governments' commitment to welfare provision and households' ability to consume adequate housing, will guide our analysis.

Whilst we relate households' housing quality to key underlying structures, we should note that we make no assumption that certain structural arrangements should *necessarily* produce certain outcomes, for causality is seen by critical realists as probabilistic and contingent (Lawson 2003); for instance, structural powers may not yet be activated or may be cancelled out by opposing tendencies (e.g. while mortgage markets exist, households' income, cultural values or risk appetite may inhibit mortgage demand).

Finally, we concisely reflect on the idea of path-dependent change in a stratified ontology (Archer 1995). Change may occur at the obvious level of events ("the empirical"); this was theorized under the frame of "critical juncture" by identifying *contingent* choices that set a future trajectory, which is thereafter difficult though not impossible to reverse. Critical juncture explanations became popular in housing studies (*Housing, Theory and Society*, volume 27, issue 3) although they were criticized by a different branch of path dependency scholars. For instance, Malpass (2011) argues that change occurs incrementally through intentional actions (always restricted by essential preconditions), unintended consequences and non-decision-making, encompassing both dynamism and continuity. This view seems more attuned to the deep ontology of critical-realism. Rather than identifying events, isolating the causal mechanisms that have induced path-dependent change avoids deterministic explanations (Kemp 2015; Lawson 2003). Perceptions of policy failure, struggle over resources, international pressures, power configurations, incremental institutional change and geographical diffusion of knowledge may all act as causal mechanisms of path dependence. For instance, Lux and Sunega (2014, 514) proposed – in a quite critical-realist vein – an explanation of path dependence framed under the "privatization trap" as "a trickle down mechanism" generating expectations of continued privatization in the newly built social housing and reinforcing already strong social norms of owner-occupation. Likewise, in-kind restitution of housing and land, and housing privatization have resulted in fragmented property rights with long-term consequences for how housing is developed and maintained (Górczyńska 2017; Lux, Cirman, and Sunega 2017; Soaita 2012; Soaita 2017; Vranic, Vasilevska, and Haas 2015). We anchor the idea of path-dependent change in the communist past by highlighting key differences across the political economies and forms of housing provisions across the communist states in the following section.

3. Theorizing Communist Housing Systems

We build on two major contributions, those of Kornai's (1992) treatise on the political economy of the socialist system and Hegedus and Tosics's (1992) conceptualization of the communist East European housing model (EEHM) as being essentially distinct from its Soviet counterpart (Bessonova 1992). Their conceptual distinctions overlap in meaningful ways (Figure 2).

Kornai (1992) differentiated between the political economy of classical versus reformist socialist systems. The former "prevailed under Stalin, Mao Zedong, and their disciples in other countries"; the latter "evolved (in chronological order) under Tito in Yugoslavia, Kadar in Hungary, Deng Xiaoping in China, and Gorbachev in the USSR; some further countries could be named as well" (Kornai 1990, 131/132). While the reformist-socialist countries still maintained the "fundamental attributes of a socialist system", i.e. communist party's undivided power, dominant role of state-owned enterprises and centralized bureaucracy, steps were nonetheless taken towards some political liberalization, some degree of decentralized control of the state-owned sector, support/tolerance for a somewhat larger quasi-private sector and crucially some easing of shortages for consumer goods, including housing. These typologies should, however, be seen as abstract constructs for "at no time in the history of any specific country has its system corresponded exactly to any of these models" (Kornai 1992, 20). Kornai also emphasized the matter of degree within both classical and reformist forms of socialism as well as across different life domains.⁴ While market-socialism was the most advanced tendency of reformist socialism, "a partial, moderate change" (Kornai 1992, 386) may also qualify a country as reformist in relation to particular investigations.

Reformist socialism was sustained in Yugoslavia and Hungary since the 1950s/1960s; and was significant in Poland during the 1980s and in Czechoslovakia before the 1968 Russian occupation.⁵ Overall, the communist housing systems of these countries benefited from a quasi-market sector of self-building and/or cooperative forms of provision which facilitated faster access to better housing; some more complex forms of housing finance and/or decentralized control in state housing. Crucially, the state supported alternative housing providers, i.e. households and cooperatives (Clapham et al. 1996; Sillince 1990; Sykora 1996; Turner, Hegedus, and Tosics 1992). This broad picture could be qualified by housing policy by periods and country, but this is beyond the remit of our paper. Suffice to say that among the reformist states except Poland, crude housing shortages were (almost) addressed, Czechoslovakia having had one of the most impressive performances (Michalovic 1992).

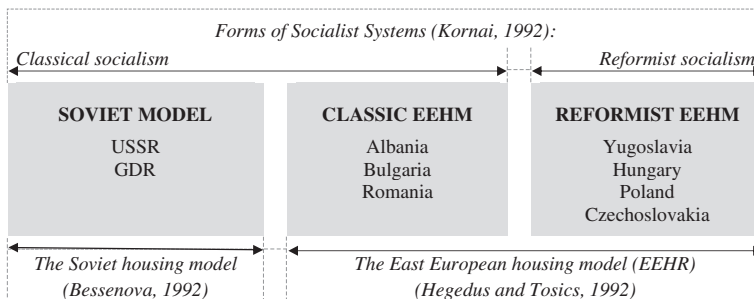


Figure 2. Theorizing communist housing systems.

Drawing broadly on the features of reformist systems, Hegedus and Tosics (1992) coined the concept of EEHM as characterizing all countries of the Eastern Bloc, and being essentially different from the housing model of the USSR. Criticized on epistemological and policy grounds (Kemeny and Lowe 1998), we find the concept useful if adapted to reflect the important distinctions between the reformist and classical states of the Eastern Bloc: we will henceforth differentiate between a reformist and a classic EEHM (Figure 2).

As opposed to the reformist-socialist states, their classic counterparts employed to a much larger scale the Soviet housing model (Bessonova 1992) which was established by Stalin and continued by Khrushchev and Brezhnev. The Soviet model of the USSR best incarnates the right to free housing via state provision. State housing was centrally planned in large, urban estates, whether flats were allocated by local/central governments, state/municipal enterprises or enterprise cooperatives – commonly the only “alternative” for the urban population was family overcrowding. Given Khrushchev’s and Brezhnev’s commitment to state provision, urbanization rates increased substantially in the USSR as well as in the GDR, which was the Eastern Bloc country that most closely followed the Soviet model (Sillince 1990).

The housing systems of the other classical states of the Eastern Bloc (Albania, Bulgaria and Romania) were nonetheless different from both the Soviet model and the reformist EEHM. They also showed high degrees of difference among them. Romania and Albania had the lowest housing investment as a percentage of total capital investment over the whole communist period, whether the bulk of housing was produced by the state or households (Sillince 1990). Albania’s counter-urbanization policy was unique in the Eastern Bloc, only matched by Asian forms of communism. Bulgaria was unusual in that the state overwhelmingly used policies of “building for sale” and shortages appeared to have been almost addressed by 1989, a unique achievement among classical-socialist states (Sillince 1990). Given states’ lack of commitment to housing (which differed by periods), households had to engage in self-building. But unlike similarly widespread practices in Yugoslavia, Slovakia and Hungary – which were supported by the state and a quasi-market private sector – Albanian, Bulgarian and Romanian households produced poorer quality dwellings.

Table 1 indicates key differences in terms of the relative share of new housing provision by different institutional organizations. For the last two decades of communism, it clearly indicates the split between classical and reformist states, with state-provision ranging from 76 to 93% in the former (except Albania) and accounting for only about a third in the latter. However, if we look at the first two decades, we observe that households used to be active self-builders in both the classic and reformist EEHMs – but never in the USSR and GDR. Since self-building was a predominantly rural phenomenon and state provision had a strong urban focus, a rural–urban divide in housing quality was created, particularly acute in the classical states. Not only are rural houses in Albania, Bulgaria and Romania currently older than those in ex-Czechoslovakia, Hungary, Poland and ex-Yugoslavia, they are also of poorer quality as classical states refrained from subsidizing alternative forms of provision.

State support was crucial not only for the quality but also for the quantity of housing. It could be argued that classical states accepted higher shortages than the reformist ones. Exceptions were reformist Poland which registered high shortages; and classical Bulgaria and the GDR which achieved remarkable output. Consequently,

Table 1. New housing provision during communist period in selected countries (rounded %).

				Form of provision	1951–1960	1961–1970	1971–1980	1981–1989	Urban population	
									1950	1990
Classical state-socialism	Soviet model	Estonian SSR	State & enterprises	82	87	93	95	47	71	
			Households	18	13	7	5			
		Latvian SSR	State & enterprises	–	86	90	87	45	70	
			Households	–	14	10	13			
		Lithuanian SSR	State & enterprises	–	81	77	78	28	69	
			Households	–	19	23	22			
		GDR	State & cooperatives ^b	83	94	89	85	55	77	
			Households	17	6	11	15			
	Classic EEHM	Albania	State ^a	26	50	49	54	20	35	
			Households	74	50	51	46			
Reformist state-socialism		Bulgaria	State	–	53	76	76	20	67	
			Households	–	47	24	24			
		Romania	State	12	36	80	93	23	54	
			Households	88	64	20	7			
	Reformist EEHM	Czech region	State & enterprises	80	40	42	29	45	76	
			Cooperatives	2	45	32	40			
		Hungary	Households	18	15	26	30	40	59	
			State & h. associations	–	33	38	24	40		
		Poland	Households	–	63	48	51	31	61	
			NSB ^c	–	4	14	25			
		Yugoslavia	State & cooperatives ^d	63	71	75	70	31	61	
			Households	37	29	25	30	20	50	
				State	42	38	36	36	20	50
			Households	58	62	64	64			

Notes: Last column does not include the full interval for the case of: Bulgaria 1981–1987; GDR, 1981–1986; Hungary, 1981–1987; Poland, 1981–1988; Romania, 1981–1985; Yugoslavia, 1981–1986.

Sources: Data were estimated from the Soviet Republic of Estonia, from http://pub.stat.ee/px-web.2001/1/Databas/Economy/05Construction/07Granted_building_permits_and_completed_buildings/07Granted_building_permits_and_completed_buildings.asp (Last accessed November 2016; we are grateful to Dr Ave Hussar for indicating the source; see also Hussar 2012); For the Soviet Republics of Latvia and Lithuania we are grateful to Dr Aleksandra Burdyak who provided estimates (computed from the Statistical Yearbooks of 1969, 576–579; 1971, 541–544; 1976, 572–575; 1978, 414; 1991; all in Russian). For the Czech region of Czechoslovakia from <https://www.czso.cz/documents/10180/20533754/retro+tabulka+2.xlsx/3f5f6e4f-d47a-40b9-980c-37c1e2714501?version=1.0> (we are grateful to Dr Petr Sunega for indicating the source and translating the categories). For the rest of the countries from Soaita (2010, 260, Table 21, and 45, Table 2) (computed from country chapters in Clapham et al. 1996; Sillince 1990; Turner, Hegedus, and Tosics 1992).

^aThe “state” heading includes units built by self-help work; however, the state also subsidized rural self-building by households in what was the exceptional Albanian approach to extreme under-urbanization.

^bHousing cooperatives in the GDR were highly centralized and subsidized, practically no different from the state provision (though they tended to be allocated by criteria of merit to employees rather than by need).

^cNSB stands for housing developed with mortgage loans from the National Saving Bank.

^dHousing cooperatives in Poland were genuine alternatives to state provision. Since 1960 they produced about half of all new dwellings both for renting and building-for-sale (which required substantial down-payments). Unfortunately we lacked disaggregated data.

Albania, Poland, Romania and the USSR entered their post-communist transition with acute housing shortages.

Based on the above considerations, we formulate three hypotheses (H) that gauge the path-dependent nature of housing quality:

H1: Housing quality is patterned along the lines of divisions between the Soviet model, the reformist EEHM and classical EEHM.

H2: Households' housing quality is superior in the former reformist-socialist countries than in the classical-socialist ones.

H2a: Given differential state support, we expect some within-cluster differences in housing quality, particularly Poland and Bulgaria being within-cluster outliers.

These hypotheses counteract claims of continued convergence in post-communist housing systems. For instance, revisiting the nature of communist and post-communist tenure arrangements, Stephens, Lux, and Sunega (2015) demonstrated the universalistic, *unitary* nature of rental and personal tenures across all communist countries since rules of access, rights of occupancy, security of tenure and housing costs were very similar. We support this view of convergence in tenure arrangements but not in relation to housing quality and modes of housing provision, which differed across groups of countries. However, have these ideologically rooted differences persisted during the post-communist construction of housing markets?

4. Mapping Post-Communist Structural Change

While economic depression during the 1990s left the communist housing legacies broadly unchallenged (Lowe 2004), post-2000 economic growth has stimulated housing change. As the 1990s reforms of housing privatization and restitution are by now well-documented (Clapham et al. 1996; Lowe and Tsenkova 2003), we will focus on the changes that have taken place since 2000. Economic growth and remittances have stimulated new housing construction throughout the region, stirring (self-built) suburbanization (Hirt 2008; Soaita 2013; Stanilov 2007), private regeneration of communist housing estates (Cirman, Mandič, and Zorić 2013; Soaita 2012; Vranic, Vasilevska, and Haas 2015) and gentrification in some cities (Górczyńska 2016; Kovács, Wiessner, and Zischner 2012).

Indeed, the economic trajectories of these countries varied widely (Figure A1 in the online annex maps GDP-growth and income inequality across countries). Notably, Slovenia and the Czech Republic started from better positions and have maintained their economic lead; the Baltic States have caught up spectacularly after 2000, whereas Bulgaria and Romania have lagged behind (Croatia's post-2008 economic downfall brought its GDP/capita to the Romanian figure). The distribution of economic growth has also varied. In terms of income distribution, the former reformist-socialist states have maintained a drive for equality (including Poland, where high-inequality levels have fallen to the intermediate ones of Hungary and Croatia). Conversely, the formal classical-socialist countries show some of the highest inequality levels within the EU. Political and welfare scholars (Adascalitei 2012) argued that

the choice for (in)equality stemmed from differential levels of economic development in 1990, which allowed enacting (or not) redistributive policies and political autonomy from the neoliberal agenda pursued by International Monetary Fund and World Bank through borrowing conditionality. In a critical-realist view of stratified reality (Archer 1995; Bhaskar 1989), these economic factors are not just the context of housing systems but powerful underlying structures of housing quality.

Interestingly, national patterns of income inequality have been associated with patterns of demographic change.⁶ Populations have remained about constant in the former reformist-socialist, economically successful Czech Republic, Poland, Slovenia and Slovakia (and even in Croatia, after an initial 13% war-driven fall). However, population has decreased significantly in the former classical-socialist, economically laggard states though causes are complex and include economic and nationalistic-driven migration besides falling birth rates. Population decreases are rarely acknowledged in comparative housing studies even though this has important implications for how housing is occupied and managed. As positive consequences, overcrowding levels have fallen (Eurostat 2016)⁷ and remittances have contributed to new-building (Soaita 2014). On the negative side, vacancies have increased and demographic ageing has accelerated, posing challenges to housing maintenance.

However, new housing provision has remained low. Within the EU, Census 2011 (Eurostat 2016) revealed the lowest share of housing stock built since 1990 in Latvia (10%), followed by Lithuania, Romania and Estonia at 3–4 percentage points higher. Hungary, Slovenia and the Czech Republic showed levels of 16–18%, whereas Poland and Croatia show levels of over 21%, close to the EU average.⁸ The key implication of this is that the communist-built housing, accounting for 59–75 percentage of total housing stock, remains to significantly influence the housing quality experienced by households.

Relating measures of housing quality and deprivation among homeowners, Mandič (2010) found very high levels of unfit housing (50%) and severe deprivation (25–43%) among homeowners in the former classical-socialist states, which indicates the problematic nature of homeownership given owners' inability to safeguard their housing through appropriate maintenance. The situation in the former reformist-socialist states of the Czech Republic, Hungary, Slovenia and Slovakia was better and comparable to that in the EU Mediterranean countries (but much worse than in the rest of the EU). This ties in well with a branch of scholarship relating housing outcomes to welfare regimes (Dewilde and De Decker 2016; Stephens, Lux, and Sunega 2015) and with an emerging attention to the welfare arrangements in post-communist nations (Aidukaite 2011; Kuitto 2016). Commonly, the latter highlights welfare-state thrift in all these countries though the more generous provision in the Czech Republic, Slovakia and Slovenia are also recognized⁹ (Figure A2 in the online annex illustrates these arguments in terms of total social spending as percentage of GDP and the share of population at risk of poverty and social exclusion).

To enable the functioning of the new housing markets, governments have tried building up systems of housing finance, inspired by the German savings bank system.¹⁰ However, outright homeownership – including buying with family-pooled cash – remained a defining feature of post-communist housing systems, embedded as they are in large informal economies. With reference to Russia, Zavisca (2012) observed a strong cultural resistance to mortgage debt, which, she argued, was internalized as a legacy of the communist promise for free housing, resulting in “property without markets”. Eastern Europeans' resistance to mortgage debt was also observed

elsewhere (Soaita and Searle 2016) and justified by a refusal to pay the high servicing costs of a mortgage; indeed, high mortgage interest rates and bank fees have made market-borrowing unaffordable even during the 2000s (Hegedus and Struyk 2005). Housing was commonly cast as a place of home and definitely not seen as an asset (Lux et al. 2016; Soaita 2015).

Nonetheless, mortgaged homeownership is on the increase. Figure 3 illustrates some paradoxical market dynamics between financialization trends (indicated by mortgage debt/GDP), house price volatility and residential mobility worthy of future research. Mortgage debt/GDP ratios have increased (top panel). If in 2000 all post-communist EU states bar Estonia and Latvia showed figures below 10%, by 2014 only Bulgaria and Romania were below this figure. While these levels seem still low, they evidence new lines of division across the Eastern European housing systems. Comparing trends in housing financialization and residential mobility (Figure 3, top panel), Estonian housing is clearly the most commodified and the Romanian and Bulgarian ones the least. Commodification may be expected to translate income into

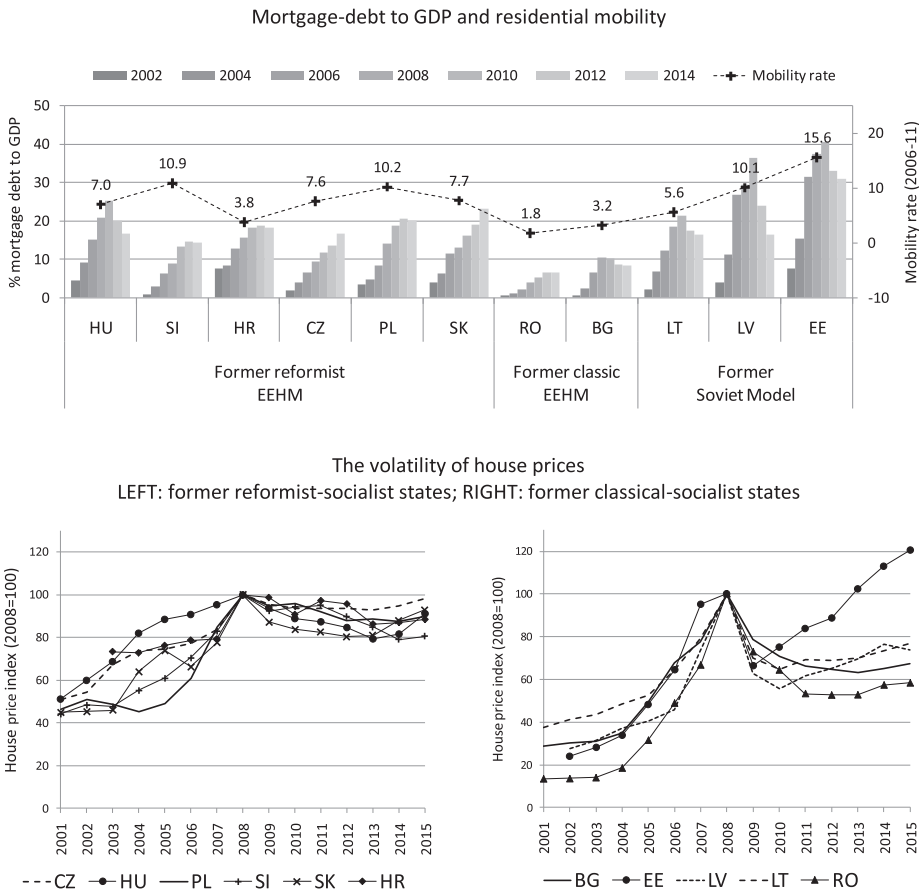


Figure 3. Market dynamics. *Source:* Authors' compilation from HYPOSTAT (2005, 2007, 2011, 2013, 2015, 2016) for all except Eurostat's (2016) mobility rates available at https://appsso.eurostat.ec.europa.eu/nui/show.do?data-set=ilc_hcmp05&lang=en.

housing inequality and diminish egalitarian legacies of housing de-commodification (Soaita 2014).

Paradoxically between 2001 and 2008, these immobile, non-financialized housing markets saw some of the highest EU price bubbles of 3–8-fold and 2–2.5-fold increases in the former classic-socialist and reformist states, respectively (Figure 3, bottom panels). Exuberant growth turned into some of the most spectacular EU property-busts with house prices falling commonly by 10–30% but by 50% in Latvia and Romania. High volatility in quite immobile and non-financialized markets is a conundrum for future research (indicative of remittance-based and largely informal economies). Under conditions of low housing output, high house price growth (even after discounting the post-GFC busts) and predominant cash transactions, family support for young people to access independent housing – or alternatively to stay put in the parental home – has been crucial and resulted in complex co-residence arrangements. From this point of view, the housing systems in Eastern Europe were viewed as an extreme case of Mediterranean familism (Mandic 2008).

Having concisely mapped some significant structural changes traversed by post-communist societies since the fall of communism, we acknowledge the possibility of divergent change by pairing H1 with:

H1a: Housing quality is no longer patterned along the lines of division between the three communist housing systems presented in Section 3 – but we make no assumption of likely new configurations.

As we are interested in the nature of housing inequality, we aim to explore the comparative importance of inherited rural/urban inequality versus income-instilled inequality in housing quality at the level of households. Although there are complex interdependencies between these two forms of inequality, we expect that:

H3: Differences in housing quality between urban/rural households are higher than those between lower/higher-income households.

H4: Differences in housing quality between lower-/higher-income households are higher in the more unequal than in the more equal countries. In other words, the more egalitarian legacies of housing de-commodification are fading faster in the former than the latter countries.

5. Method

We explore similarities and differences in housing quality across countries by means of HCA. This is a statistical technique for discovering underlying similarities between cases based on a variety of quantifiable features and it has been widely used to cluster affinities between countries (e.g. Danforth 2014; Kammer, Niehues, and Peichl 2012; Mandel 2009; Mandic 2008). The aim is to have the most similar countries in each cluster, which concomitantly are most dissimilar to countries in other clusters. HCA starts by considering each case as a separate cluster; then, step by step, the most similar two clusters are merged until all cases form one single cluster. In an exploratory fashion, we compare country clusters' averages by one-way ANOVA and Tukey tests in order to explore where the difference lies for each

variable. Given our small number of country cases and our exploratory approach, we accept levels of statistical significance of $p < 0.10$.

With other scholars (Mandel 2009), we opt for a wider range of indicators in order to more finely tune our exploratory analysis to the ontological depth of housing quality as defined in Section 2. We opt for 10 micro-indicators reflecting the three dimensions of households' experiences of housing quality and 9 macro-indicators measuring the five underlying structural domains. While we are interested in contributing towards a typology of post-communist housing quality, we also aim to progress towards an explanation of the observed patterns. Indicators are presented in Box 1. Data availability allows us to quantify long-term change in seven out of nine macro-indicators (S1–S7),¹¹ but not in micro-variables. This is not necessarily problematic as, to achieve a meaningful comparison, we wish to anchor our assessment of households' housing quality in one recent year. Hence, our single-year indicators and end-year for period indicators refer to 2012, when Eurostat conducted the special housing module in the EU Statistics in Income and Living Conditions (EU-SILC). Country figures are shown in Table 2 (Tables A2 and A3 in the online annex show Pearson bivariate correlations).

Box 1. Our choice of indicators.

Micro-indicators (housing quality at the level of households)

Housing conditions

Q1 Dwelling size in m ²	Source: Census 2011 (Eurostat 2016). As measures of overcrowding ignore floor area, we include this adjacent measure of residential well/ill-being
Q2 Housing deprivation	Source: our calculation based on Eurostat microdata for 2012. ^a Measured by % of total population having neither a bath, nor a shower, nor indoor flushing toilet in their household (Eurostat 2012)
Q3 Difficulty to access transport	Source: our calculation based on Eurostat microdata for 2012. Measured by the % of population reporting (very) high difficulty in accessing public transport while having no car in their households (Eurostat 2012)

Households' (affordability) arrangements

Q4 Overcrowding	Source: our calculation based on Eurostat microdata for 2012. Measured by the % of population in overcrowded homes as per Bedroom Standard (Eurostat 2012)
Q5 Extended-fam./ composite households	Source: our calculation based on Eurostat microdata for 2012. Measured by the % share of population living in any type of household, which is not one or two adults, (with or without dependent children ^b (Eurostat 2012)
Q6 Total housing cost overburden	Source: our calculation based on Eurostat microdata for 2012. Represents % of the population in households where total housing costs take more than 25% for quintile 1; 30% for quintile 2; 40% for quintile 3; 50% for quintiles 4 and 5 (Eurostat 2012)

(Continued)

Box 1. (Continued)*Housing inequalities*

D1 Distance poor	For each Q2–6, we construct four “distances from the mean” (see Sunega and Lux 2016) for population in quintile 1 (“poor”) and 5 (“rich”) of equivalised income and for population in densely/intermediately-populated areas (“urban”) and thinly-populated areas (“rural”). ^c To highlight positive/negative outcomes, we discount these values from national averages so that positive/negative figures reflect positive/negative outcomes. We then average across each set of five, obtaining our D1–4 indicators. This operationalisation cancels some of the difference, reflecting common trade-offs (e.g. urbanites may suffer of overcrowding but have better transport) (Eurostat 2012)
D2 Distance rich	
D3 Distance urban	
D4 Distance rural	

Macro-indicators (underlying structures)*The economic field*

S1 Change in GDP/capita in PPP, 1995–2012	Source: World Bank (2016). 1995 is the earlier year for which data is available for all 11 countries. PPP stands for Purchasing Power Parity
S2 Change in Gini coefficient for the income distribution since the fall of communism	Source: World Bank (2016) and Eurostat (2016). We use 1987–1989 values from World Bank, the only available source, and our constructed average value for the post-2007, i.e. 2008–2012 (Eurostat 2016). We must note a major discrepancy between World Bank and Eurostat in post-2007 values for Romania, the former showing Romania as belonging to the group of equal rather than unequal countries

Communist housing legacies^d

S3 % of houses built during communism (in the 2011 housing stock)	Source: Census 2011 (Eurostat 2016). This commonly includes households’ self-building (with or without financial support from the state)
S4 % of flats built during communism (in the 2011 housing stock)	Source: Census 2011 (Eurostat 2016). A flat is a dwelling in buildings of three or more unites, this being a close proxy for state provision in classical-socialist states but not necessarily in the reformist ones (for it includes cooperatives)

Housing market dynamics

S5 % of mortgage debt to GDP in 2012	Source: HYPOSTAT (2016). Although this measures 2012 levels, it can be seen as measuring change since mortgage levels have started from virtually null levels in most countries (inherited mortgage levels in Bulgaria, Hungary and Yugoslavia having been swept by inflation in the early 1990s)
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(Continued)

Box 1. (*Continued*)

S6 House value growth, 2003–2008 (<i>n</i> -fold increase)	Source: HYPOSTAT. We indexed house value growth to 2003 using annual rates published by HYPOSTAT (2005, 2007, 2011, 2013, 2015, 2016)
<i>Population dynamics</i>	
S7 % of population change 1990–2012	Source: Eurostat (2016). We opt for the number of population rather than households for the latter is mediated via household composition, relating housing availability, affordability and strategies of migration in countless ways
<i>Social spending</i>	
S8 % of population at risk of poverty & social exclusion	Source: Eurostat (2016), data for 2012
S9 % total social spending as percentage to GDP	Source: Eurostat (2016), data for 2012

^aEurostat microdata consist of face-to-face interviews of nationally representative samples; the number of individuals aged 16 and over who were interviewed in 2012 ranged from 11,224 (LT) to 30,755 (PL).

^bDependent child: aged 15 or less, or aged between 16 and 24 and economically inactive. We considered an additional variable “young people access to independent housing” measured by the % of population living in households with adult children (i.e. aged 19–35, excluding those aged 19–26 in education), which we dropped given the high correlation between these variables ($p = 0.969$) and their theoretical overlap.

^cAs this code is unavailable in Slovenia’s microdata, we used estimates (e.g. averages of “cities”/“town and suburbs” for Q1, Q4; proportional estimates for Q5 against the all-countries average; proportional estimates for Q2, Q3, and Q6 against comparative values for Slovenia from 2012 Eurostat aggregate data and Census 2011; we are grateful to Prof. Andreja Cirman for providing data support.

^dThe share of communist-built houses and flats in the 2011 housing stock is both a proxy for communist forms of housing provision by households and state/cooperatives, respectively – measuring thus the legacies of the three communist housing models by 2011 – as they are indicators of change since the housing stock is continually transformed through new housing construction, demolition and change of use (we will check the robustness of our results by inclusion of five more macro-indicators, including the share of post-communist build housing).

6. Results

We perform HCA by means of Ward’s method of classification (using squared Euclidian distances) in order to identify countries’ affinities according to our 19 variables (both macro- and micro-indicators). As variables have different measurement scales, we use Z-scores for standardization.

Figure 4 displays graphically the results in the form of a dendrogram, which should be read from left to right. It is up to the researcher to decide the cut-off point for the number of clusters that best accommodate the theories which have informed the selection of variables. However, the dendrogram and the agglomeration schedule (not shown) offer visual and numerical indications. The three-cluster solution best fits our purpose. Countries are grouped as follows:¹²

Table 2. Country values (grouped by former housing models/geographical regions).

	Former Stalinist housing model (the Baltic States)			Former classical EEHM (south-east Europe)			Former reformist EEHM (central-east Europe)				
	EE	LT	LV	BG	RO	CZ	HU	HR	PL	SI	SK
<i>Micro-indicators (households' housing quality)</i>											
Q1 Dwelling size (m ²)	66.7	63.2	<u>62.5</u>	73.0	43.9	78.0	75.6	81.6	75.2	80.3	87.4
Q2 Housing deprivation	6.9	13.9	<u>14.4</u>	13.2	<u>35.1</u>	0.4	3.8	1.9	3.3	0.3	0.3
Q3 Difficulty to access transport	6.7	8.1	8.8	11.6	16.7	<u>3.0</u>	5.8	7.7	5.3	<u>2.8</u>	5.6
Q4 Overcrowding	14.3	19.7	36.8	44.8	<u>52.0</u>	21.1	<u>47.3</u>	44.7	46.9	<u>16.9</u>	38.8
Q5 Extended-fam./composite hlds	<u>19.2</u>	25.3	31.7	46.0	40.1	<u>22.9</u>	31.0	43.4	41.6	26.1	42.1
Q6 Total housing cost overburden	13.7	15.4	16.8	<u>22.8</u>	21.5	20.3	<u>23.8</u>	13.3	17.7	11.6	16.3
D1 Distance poor	-11.2	-12.4	-10.7	<u>-18.6</u>	<u>-16.4</u>	-12.4	-15.4	-11.5	-13.6	-8.6	-10.2
D2 Distance rich	6.3	8.9	<u>13.4</u>	<u>7.6</u>	<u>14.6</u>	5.9	9.8	5.1	9.7	3.7	2.6
D3 Distance Urban	1.5	3.3	<u>3.5</u>	2.4	<u>6.8</u>	0.2	2.1	1.3	3.0	-0.2	0.6
D4 Distance rural	-2.3	-2.2	-4.3	<u>-4.6</u>	<u>-9.2</u>	-0.4	-3.5	-1.4	-4.3	-0.3	-0.8

(Continued)

Table 2. (Continued)

	Former Stalinist housing model (the Baltic States)			Former classical EEHM (south-east Europe)			Former reformist EEHM (central-east Europe)				
	EE	LT	LV	BG	RO	CZ	HU	HR	PL	SI	SK
<i>Macro-indicators (underlying structures)</i>											
S1 GDP/capita change 1995–2012	19,569	18,295	15,162	<u>10,561</u>	13,578	14,922	13,390	10,873	16,161	15,255	17,622
S2 Gini change 1989-average 2008–2012	8.63	<u>11.90</u>	<u>13.85</u>	10.79	10.81	5.56	0.49	8.45	4.41	-0.12	5.54
S3 Communist-built houses	<u>11.2</u>	23.2	<u>13.8</u>	37.7	37.5	19.4	37.5	35.7	21.6	36.4	28.7
S4 Communist-built flats	54.9	48.3	53.5	36.3	35.7	39.0	26.1	<u>21.6</u>	35.1	<u>26.6</u>	40.6
S5 Mortgage debt to GDP, 2012	33.1	17.4	24.0	<u>8.7</u>	<u>6.6</u>	13.5	20.2	18.9	20.6	14.6	19.0
S6 House price boom 2003–2008 (<i>n</i> -fold)	<u>3.5</u>	2.3	3.2	3.2	<u>7.1</u>	1.5	1.4	1.5	2.0	2.1	2.2
S7 Population change 1990–2012	<u>-15.36</u>	-18.26	<u>-23.29</u>	<u>-18.47</u>	-13.05	1.40	-6.2	-10.21	1.73	2.96	2.66
S8 Pop. risk poverty/exclusion, 2012	23.4	32.5	36.2	49.3	43.2	<u>15.4</u>	33.5	32.6	26.7	<u>19.6</u>	20.5
S9 Total social spending, % GDP, 2012	<u>15.0</u>	16.3	<u>14.4</u>	16.6	15.4	20.4	21.4	21.1	18.9	24.9	18.0

Notes: The best/second best (or just highest) indicators in terms of housing quality across countries are shown in bold; the worst/second worst (or just lowest) ones are underlined. Tables A2 and A3 in the online annex show Pearson bivariate correlation levels (two-tailed). With Mooi and Sarstedt 2011, 242), we consider levels below absolute values of 0.9 as being acceptable for cluster analysis. All correlation levels are acceptable between macro-indicators, but we note four statistically problematic correlations in our micro-indicators: D3–D4 (–0.943**); Q2–Q1 (–0.942**); Q2–D3 (0.922**); and Q2–Q3 (0.911**). A possible solution is the elimination of variable Q2 from cluster analysis (so that a shared underlying factor is not double-weighted in the computation of country clusters). However, the results of cluster analyses remain unchanged whether we include or exclude variable Q2 (see Figure A1 in the online annex). Given Q2’s non-impact on clustering patterns but its major importance to households’ wellbeing, we decided to maintain it for our further assessments of households’ housing quality.

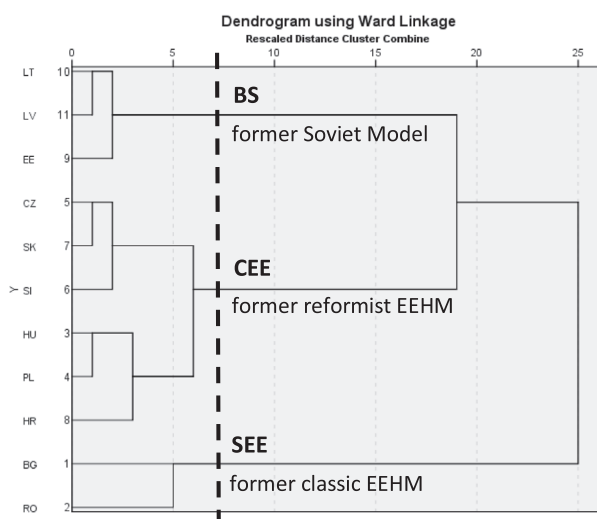


Figure 4. Clustering patterns (HCA on 19 variables). *Source:* SPSS software output. *Notes:* The visual clue is the length of the horizontal interval between two merging steps. The solution of three clusters is thus obvious. The three clusters remain stable upon the elimination of variable Q2 (see Figure A1 in the online annex) and/or the inclusion of five additional macro-indicators (i.e. GDP/capita in 1995; post-communist built stock; % homeowners in total population; 2007–2012 residential mobility rates; % change in household numbers, see Figure A2 in the online annex).

- SEE: south-east Europe of the former classic EEHM (BG, RO).
- CEE: central-east Europe of the former reformist EEHM (CZ, HR, HU, PL, SI, SK).
- BS: the Baltic States of the former Soviet housing model (EE, LV, LT).

These results confirm H1 (rejecting the alternative H1a). Conceptualized in a critical-realist vein of deep ontology, patterns of housing quality cluster neatly along the past lines of divisions between the three communist housing models presented in Section 3. This supports the idea of path-dependent change (most of our macro-variables indeed being measures of change). Claims of convergence across post-communist housing should be rejected since clustering patterns still reflect communist housing models 22 years after the fall of communism despite relatively similar housing policies pursued since (Hegedüs, Lux, and Teller 2013).

However, these results will not surprise housing scholars as they match the traditional geographical grouping of the SEE and CEE countries observed in many analyses during the 1990s; differences tended to be explained by post-communist trends rather than the inherited constitution of housing systems, which were considered to be all too similar. As the Baltic States entered the field of comparative housing somewhat later, there was ambiguity related to their comparative position though they were commonly grouped together (Hegedüs and Tosics 1998; Tosics 2003). Slightly different country groupings (Poland grouped with BS) and similarities between the SEE and BS countries were sometimes observed (Mandic 2008; Mandič 2010; Mandic and Cirman 2011). However, our analysis shows that the similarities among the three Baltic States are larger than their similarities with any other post-communist EU states.

Table 3. ANOVA test for cluster means with ranking scores for housing quality.

		<i>F</i>	Sig.	SEE	CEE	BS
Q1	Dwelling size	6.745	0.019	58.5 ₁ ^B	79.7 ₃ ^A	64.1 ₂ ^B
Q2	Housing deprivation	10.621	0.006	24.2 ₁ ^B	1.7 ₃ ^A	13.0 ₂ ^B
Q3	Difficult access to transport	15.061	0.002	14.1 ₁ ^A	5.0 ₃ ^B	7.9 ₂ ^B
	<i>Housing conditions: score</i>			3	9	6
Q4	Overcrowding	2.473	0.146	48.4 ₁ ^A	36.0 ₂ ^A	23.6 ₃ ^A
Q5	Extended-fam./composite hlds	3.075	0.102	43.0 ₁ ^A	34.5 ₂	25.4 ₃ ^B
Q6	Housing cost overburden	2.190	0.174	22.1 ₁ ^A	17.2 ₂ ^A	15.3 ₃ ^A
	<i>Household arrangements: score</i>			3	6	9
D1	Distance poor	6.464	0.021	-17.5 ₁ ^A	-12.0 ₂ ^B	-11.4 ₃ ^B
D2	Distance rich	2.040	0.192	11.2 ₁ ^A	6.1 ₃ ^A	9.6 ₂ ^A
	<i>Housing inequality/income: score</i>			2	5	5
D3	Distance urban	3.879	0.066	4.6 ₁ ^A	1.2 ₃ ^B	2.8 ₂
D4	Distance rural	5.738	0.028	-6.9 ₁ ^A	-1.8 ₃ ^B	-2.9 ₂
	<i>Housing inequality/place: score</i>			2	6	4
	<i>Overall score: housing quality</i>			10	26	24
S1	GDP/capita change 1995–2012	3.741	0.071	12,069 ^A	14,737	17,675 ^B
S2	Gini change 1989–2013	8.216	0.011	10.8 ^B	4.1 ^A	11.5 ^B
S3	Communist-built houses	6.429	0.022	37.6 ^B	29.9 ^B	16.0 ^A
S4	Communist-built flats	10.737	0.005	36.0 ^B	31.6 ^B	52.2 ^A
S5	Mortgage debt to GDP, 2015	8.267	0.011	7.7 ^A	17.8 ^B	24.8 ^B
S6	House price boom 2003–2008	7.781	0.013	5.2 ^A	1.8 ^B	3.0 ^B
S7	Population change 1990–2014	14.891	0.002	-15.8 ^B	-1.3 ^A	-19.0 ^B
S8	Population at risk of poverty	7.342	0.015	46.3 ^A	24.7 ^B	30.7 ^B
S9	Total social spending % of GDP	9.618	0.007	16.0 ^B	20.8 ^A	15.2 ^B

Notes:

Subscript bold numbering: these indicate simple ranking scores on housing quality (from 3 = best to 1 = worst). The minimum ranking sum a cluster may get is 10 and the maximum 30. As any ranking method this remains relative for equal ranking steps may not reflect households' preferences; it also does not control for the actual magnitude of the difference between indicators although for differences of less than 5 percentage point we would split the score equally.

Superscript bold capital letters: these indicate results of a multiple comparisons by Tukey post hoc HSD test for each variable (subset for alpha = 0.1; p ranging from 0.003 to 0.092). As the group sizes are unequal, the harmonic mean of the group sizes is used ($n = 3$), type I error levels being not guaranteed; nonetheless, descriptively, these differences are also visible to the naked eye. Combinations:

- A–B–C indicates that all three clusters' means are statistically different.
- A–B–B shows that one cluster's mean is statistically different from the means of the other two (which are no different, making so a single cluster).
- A–B–nothing indicates that only two means are statistically different (imagine a ladder with three rungs: the extreme groups are statistically different but the one in between shows similarities with both, the upper and the lower rung).
- A–A–A shows that clusters' means are not statistically different, making so a single cluster.

We will now have a more detailed look at Table 3, which shows the cluster means. We note statistically significant differences for all 9 macro-indicators (at $p < 0.05$ for 8 indicators) and for 7 out of 10 micro-indicators (at $p < 0.05$ for 6 indicators). This suggests that clustering patterns are stronger in macro- than micro-indicators. On the one hand, we did not theoretically expect a neat correspondence since critical realism conceives causality as contingent and credits households' agency in negotiating structural constraints. For instance, the bell-shaped distribution of co-residence (and of young people in the parental home) across income quintiles suggests that, besides affordability constraints, other factors are at play.¹³ On the other hand, the statistical clustering algorithm takes into consideration within-cluster dispersion, which is higher in micro- than macro-indicators. For instance regarding overcrowding, the lack of a significant difference between very different cluster means is partially a statistical outcome of within-cluster dispersion, ranging from 14.8 (Slovenia) to 44.2 (Poland) in the CEE cluster and from 14.2 (Estonia) to 39.4 (Latvia) in the BS cluster. We will return to within-cluster dispersion in housing quality later.

Table 3 also shows by superscript letters that no single variable differentiates across all three clusters; it is rather the dynamics between each combination of two possible clusters (e.g. S3), and differences between the extremes (e.g. S1) that determine the outcome. The superscript letters tell us where the difference between clusters lies by variables – but results should be read descriptively only since clusters are of unequal size. Interestingly, variables S3 and S4 in conjunction with Q1 and Q2 and D3 and D4 highlight the continuing legacies of the three communist housing models discussed in Section 3:

- [SEE = CEE] \neq BS on the share of communist-built houses and flats reflect key differences between the EEHM and the Soviet housing model – i.e. Hege-
dus' and Tosics's (1992) thesis – in that the state was a less important provider
in the former than in the latter; but
- CEE \neq [SEE = BS] on housing conditions and rural/urban-induced housing
inequalities reflects key differences between the classic and reformist EEHMs
– i.e. Kornai's (1992) thesis – in that the reformist socialist-states produced
higher quality housing than their centralized counterparts.

Furthermore, interesting links between socio-economic and housing inequality are revealed by variables S2 and S9 in conjunction to S8 and D1:

- [SEE = BS] \neq CEE on Gini increase and total social spending, which describe
the unique CEE drive for socio-economic equality; yet
- [CEE = BS] \neq SEE on population at risk of poverty/social exclusion and odds
of low-income households suffering poor housing quality describes an unex-
pectedly good performance of BS despite its choice for inequality. Possible
explanations are the filtering down of outstanding economic growth and better
(inherited) housing conditions on which BS \neq SEE.

To elaborate on H2 regarding households' experiences of housing quality being higher in the former reformist EEHM (i.e. CEE) than in the classical-socialist states (i.e. SEE and BS), we advance a simple ranking exercise of clusters' means related

to housing quality indicators.¹⁴ Table 3 shows these scores in subscripts and additional rows. Out of a min/max of 10/30 scores, the CEE cluster was ranked first, the BS a close second and SEE the worst. This allows us to affirm that H2 regarding housing quality being higher in the former reformist-socialist than classic-socialist states is supported by data, yet the small difference between CEE and BS clusters requires reflection.

If it is true that housing quality in the USSR was poorer than in the reformist EEHM as the literature suggest (Sillince 1990) and as our scoring on housing conditions maintains (“6” for BS and “9” for CEE in Table 3) – then we witness a process of BS catching up with the CEE cluster. This seems stirred by some structural post-communist developments: the highest rates of population decrease, high GDP growth and housing market financialization, which have improved housing availability and access (indeed, note the higher BS versus CEE scoring on housing arrangements in Table 3).

Finally, we wish to concisely elaborate on H3, related to our assumption that urban/rural-induced differences in housing quality are higher than the income-related ones. Data clearly reject this assumption. In all clusters (Table 3 but also for each country as shown in Table 2), the sum of the absolute values for the pair of urban/rural distances is much lower than the corresponding sum for the pair of poor/rich distances. The respective figures are 11.5 and 28.6 for SEE; 5.7 and 21.0 for BS; and 4.0 and 18.1 for CEE. The fact that income-related inequalities are higher than those stemming from urban/rural divisions is however not only an outcome of the post-communist transition but directs attention to recognized socio-economic inequalities during communism (Szelenyi 1983).

This exercise lets us also concisely elaborate on H4, related to our assumption that income-related housing inequalities are higher in the more unequal BS and SEE clusters than in the more equal CEE one. Indeed SEE shows the highest figure (28.6), followed by BS (21.0) and the CEE (18.1), thus supporting our H4. However, we wish to flag the fact that BS is closer positioned to CEE than SEE which puts additional weight on our previous observation that high socio-economic inequality in the BS cluster does not straightforwardly translate into housing inequality. We also observe that income-related housing inequality is higher at the bottom than at the top: lower income households are more likely to suffer negative outcomes than are higher income households likely to enjoy positive outcomes. This is true for all clusters (Table 3) and for each country (Table 2). We acknowledge, however, that income and place inequalities show complex interdependencies and trades-offs and that we cannot control for endogeneity in this analysis (e.g. the phenomenon of rural poverty particularly acute in Bulgaria and Romania).

6.1. Nuancing the Results: Addressing the Issue of Within-Cluster Dispersion

We already noted the issue of within-cluster dispersion in our micro-indicators. To explore this further, we will perform two additional HCAs, separately for macro- and micro-indicators. Figure 5 displays the two dendrograms, showing our choice for the cut-off point. We note the same three-cluster solution on macro-indicators (BS, CEE and SEE) but a four-cluster solution on micro-indicators. We will

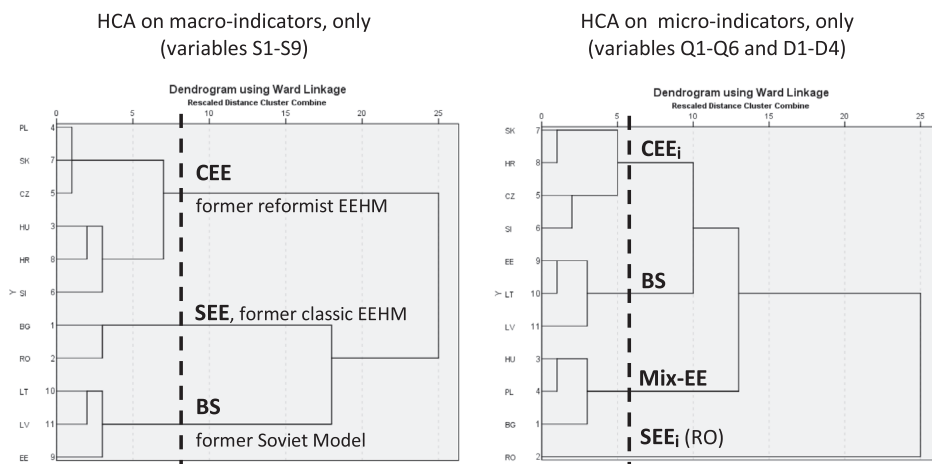


Figure 5. Deconstructing clustering patterns by macro- and micro-indicators. *Source:* SPSS software output. *Note:* The three cluster solution (left side) and four cluster solution (right side) remain stable upon the elimination of variable Q2 and/or the inclusion of additional macro-indicators (i.e. GDP/capita in 1995; post-communist built stock; % homeowners in total population; 2007–2012 residential mobility rates; % change in household numbers, see Figure A1 and A2 in the online annex).

further reflect exclusively on the latter. Countries are now grouped in the following clusters:

- Incomplete SEE, henceforth SEE_i (RO; without BG).
- Incomplete CEE, henceforth CEE_i (CZ, HR, SI, SK; without HU, PL).
- Hybrid SEE and CEE, henceforth Mix-EE (BG, HU, PL).
- Unchanged BS (EE, LV, LT).

We find these results particularly revealing because the Mix-EE cluster includes the worst performer in the communist reformist EEHM and the best one in the classic EEHM, i.e. Poland and Bulgaria, respectively. We expected these countries to induce within-cluster dispersion (H2a), which our analysis confirmed. Housing scholarship has offered us no grounds to deduce Hungary's intermediate position but country data in Table 2 clearly expose it: in terms of worst/second worst ranks within the CEE, Hungary gets nine (with Poland getting seven, Croatia two and the Czech Republic one).

We conclude this assessment by highlighting that, on a scale from 10 to 40 (Table 4), the ranking score on housing quality totals 10.5 for Romania (worst performance); 23 and 29 for the Mix-EE and BS, respectively (intermediate performance); and 37.5 for CEE_i (best performance). In terms of specific dimensions of housing quality, the same worst/intermediate/best patterns hold for housing conditions, urban/rural-related and income-related housing inequality but not for households' (affordability) arrangements with BS being the best performer, closely followed by CEE_i (both SEE_i and Mix-EE showing poor performances). We will come back to this in the concluding section.

Table 4. Nuancing housing quality across four clusters (ANOVA test and ranking scores).

				SEE _i	CEE _i	BS	Mix-EE
		<i>F</i>	Sig.	RO	CZ, HR, SI, SK	EE, LV, LT	BG, HU, PL
Q1	Dwelling size	51.814	0.000	43.9 ₁	81.8 ₄	64.1 ₂	74.6 ₃
Q2	Housing deprivation	18.950	0.001	35.1 ₁	0.7 ₄	13.0 ₂	6.8 ₃
Q3	Difficult access to transport	6.194	0.022	16.7 ₁	4.8 ₄	7.9 _{2.5}	7.6 _{2.5}
	<i>Housing conditions: score</i>			3	12	6.5	8.5
Q4	Overcrowding	3.255	0.090	52.0 ₁	30.4 ₃	23.6 ₄	46.3 ₂
Q5	Extended-fam./composite hlds	1.522	0.291	40.1 ₁	33.6 ₃	25.4 ₄	39.5 ₂
Q6	Housing cost overburden	3.187	0.094	21.5 _{1.5}	15.4 _{3.5}	15.3 _{3.5}	21.4 _{1.5}
	<i>Household arrangements: score</i>			3.5	9.5	11.5	5.5
D1	Distance poor	6.818	0.017	-16.4 ₁	-10.7 ₄	-11.4 ₃	-15.9 ₂
D2	Distance rich	7.277	0.015	14.6 ₁	4.3 ₄	9.6 _{2.5}	9.1 _{2.5}
	<i>Housing inequality/income: score</i>			2	8	5.5	4.5
D3	Distance urban	20.126	0.001	6.8 ₁	0.5 ₄	2.8 _{2.5}	2.5 _{2.5}
D4	Distance rural	34.909	0.000	-9.2 ₁	-0.7 ₄	-2.9 ₃	-4.1 ₂
	<i>Housing inequality/place: score</i>			2	8	5.5	4.5
<i>Overall score on: housing quality</i>				10.5	37.5	29	23

Notes: *Subscript bold numbering*: these indicate simple ranking scores (from 4 = best to 1 = worst). The minimum ranking sum a cluster may get is 10 and the maximum 40. As any ranking method, this remains relative for equal ranking steps may not reflect households' preferences; it also does not control for the actual magnitude of the difference between indicators although for differences of less than 5 percentage point we split the score equally (e.g. R3, R6, R8 and R9). Having a one-country cluster, we cannot explore multiple comparisons by Tukey post hoc HSD.

7. Conclusions

We chose a long-term perspective to examine the extent to which patterns of housing quality across the 11 post-communist EU countries share commonalities and where important differences arise. Particularly, we aimed to explore whether ideologically rooted past differences in housing provision have persisted during the post-communist construction of housing markets. We conceived housing quality in a critical-realist approach of stratified ontology and operationalized it in terms of micro- and macro-indicators reflecting households' experiences and their underlying structural dimensions. These indicators were used to conduct explorative HCA.

7.1. "Running on Parallel Tracks" (Hypotheses 1 and 1a)

Our analysis evidenced that patterns of housing quality across sampled countries still cluster along the same historic lines of division – the three communist housing models presented in Section 3 – in the groups of the Baltic States, central-east Europe and south-east Europe (supporting our hypothesis 1 and rejecting its alternative 1a). This model of change can be described under the metaphor "running on parallel

tracks”, i.e. past legacies of difference were carried through the post-communist transformation whether through continuities (i.e. persistent features of the built environment; low residential mobility) or discontinuities (i.e. the choice for inequality; migration). Conceptualizing this model of path-dependent change is one of our main contributions to the current debates regarding the nature of post-communist housing (Miao and Maclennan 2016; Stephens, Lux, and Sunega 2015). As common in cluster analyses of country-cases, we faced the issue of statistical power. Rather than reducing the number of variables to the sample size (for 11 countries, conventional wisdom suggests the use of two/three variables), we preferred to nuance our analysis by using a broader set of indicators; this however means that findings remain exploratory. Under this reservation, we wish to further qualify our results.

7.2. *Housing Quality at the Level of Households (Hypotheses 2 and 2a)*

Our ranking exercise across the three clusters supported the assumption that housing quality at the level of households is higher in the former reformist-socialist states (i.e. CEE) than in the classical-socialist ones (i.e. BS and SEE). However, as we hypothesized some degree of heterogeneity induced by different country performances during communism, we have nuanced these findings. An HCA conducted *exclusively* on micro-indicators differentiated between four clusters. These results were revealing in that they differentiated a hybrid cluster, comprising the “laggards” in the best-performing, reformist EEHM (Hungary and Poland) and the “leader” in the worst-performing, classic EEHM (Bulgaria). Our analysis showed that households’ housing quality is worst in Romania; poor-to-intermediate in the mix group of Bulgaria, Hungary and Poland; intermediate-to-good in the Baltic States, and best in Croatia, the Czech Republic, Slovenia and Slovakia. Evidencing these differences in housing quality, particularly singling out Romania from Bulgaria and highlighting the second best position of the Baltic States is another contribution of our study to comparative housing. Mandic and Cirman (2011) argued that communist legacies were still present in housing conditions in 2003, and we evidenced they persisted in 2012; however, we showed there was no single, common legacy but indeed legacies of difference.

7.3. *Housing Inequalities by Place and Income (Hypotheses 3 and 4)*

Our study indicated that housing inequalities at the level of households were overall higher across income divisions than by urban/rural places (rejecting hypothesis 3). Controlling for endogeneity between place of living and income at a finely grained spatial scale is worth future research (Eurostat does not provide that information).

Housing inequality by income shows interesting patterns. As expected, the most income-equal countries of the CEE_i show the lowest inequality in housing outcomes; and the income-unequal countries of the SEE show the highest levels. Surprisingly, the Baltic States, the most income-unequal countries in our sample, show the second lowest levels of inequality in housing outcomes. Thus, the division of low versus high socio-economic inequality between the former reformist-socialist states (CEE) and the classical-socialist ones (BS and SEE) does not consistently filter down to households’ housing situations, which is an intriguing finding of our analysis. In other words, high socio-economic inequality is associated with high housing

inequalities in the SEE but not in the BS cluster (despite both clusters sharing increases of 11 percentage points in Gini coefficient for income since 1990). Table 3 showed that, on average, SEE's lower and higher income households are farther away from the national mean than they are in the other two clusters, whereas lower income households are on average better off in BS than in the more equal CEE cluster. In our view, housing legacies in conjunction with demographic changes have advantaged the BS versus SEE housing systems. SEE's states and households produced poorer quality housing during communism than their Soviet counterparts (e.g. smaller dwellings; lack of utility provision), while higher population falls in BS improved quantitative deficits (including by means of residential mobility in more financialized housing markets).

An argument can be made that legacies of housing de-commodification – whether through command economies, self-building, co-habitation or inheritance – still temper the translation of income into housing inequality, particularly so in the Baltic States. First and foremost, this seems supported by many micro-indicators being not (much) different across countries of high (BS) and low (CEE_i) income inequality, as shown in Table 4: housing cost overburden, overcrowding, extended-family/composite households and the disadvantage suffered by lower income households showing comparable levels. While this is true at our level of aggregation and in our methodological construction of housing inequality – in which we allowed for some trade-offs by averaging values across variables for each target group – we believe comparative cross-country analysis on relevant subgroups of population would be welcomed.

7.4. Future Change: Explanatory Mechanisms for (Dis)Continuities

We highlighted that no single variable differentiates between all three clusters, which theoretically means that clusters may be more amenable to change than otherwise constituted. While notionally any trajectory of change could be imagined, some trajectories may be more likely than others. For instance, we noted that the three-cluster solution (reflecting the three communist housing models) was stronger in macro-than micro-indicators, thus at least theoretically likely to become even more dominant since structural factors trigger outcomes commonly with a time-lag. As critical-realists' aspiration is unravelling causal mechanisms that activate the powers of underlying structures into the observed empirical events, we wish to conclude by reflecting on some mechanisms for (dis)continuities and their implications to the nature of housing systems.

Within what has become recognized as the “consumption thesis”, Kemeny (1981) argued that new-built housing constitutes a small part of the housing stock, hence the larger structural effect of historic housing policies to households' options/choices. This argument is particularly relevant to current patterns of housing quality: path dependency is embedded in the nature of the communist-built environment, and its allocation given low levels of constructions and residential mobility. But we will not fully understand continuity and change without reflecting on the alternative “provision thesis” (Clapham, Clark, and Gibb 2012). To break out of this path dependency in housing quality, the new-built housing should be both quantitatively significant and qualitatively superior.

We showed elsewhere (Soaita 2017) that poor quality housing in Romania was not only inherited but reproduced through new construction: low affordability and norms of social acceptability meant that the share of new-built houses of wattle-and-daub in the new stock approaches that of the old stock; likewise, new-built flats are commonly no larger than those built during communism. Other mechanisms of continuity in housing outcomes include: “the privatization trap” (Lux and Sunega 2014) discussed in Section 2; the “political stasis factor” (Hegedüs, Lux, and Teller 2013), i.e. political difficulty to alter popular elements of the existing housing systems; and fragmented ownership rights (Górczyńska 2016; Zavisca 2012) which impede the regeneration of (pre)communist collective housing.

While the SEE cluster seems durable, we do not have to overplay the similarities between the CEE and BS clusters for they have opted for very different political economic paths, those of social democratic and neoliberal politics (Gini-coefficients bear strong testimony). The choice of inequality (which is statistically correlated with population fall), increasing affluence and the fast financialization of BS housing markets are clear mechanisms of discontinuity, warning us against endorsing over-deterministic path dependency lenses. These new trends also have challenging implications for housing inequalities. We showed that the relationship between income and housing inequality is far from straightforward given legacies and current practices of housing de-commodification which may vanish faster in the BS than in the SEE cluster.

Our study thus encourages further unravelling mechanisms through which post-communist housing continuities are being reproduced and emerging discontinuities constructed across countries and social groups. Given the inherent contribution of mass outright homeownership to welfare in the post-communist space (Stephens, Lux, and Sunega 2015), we suggest that scholarship on post-communist welfare regimes would greatly benefit from a serious engagement with the differential nature of housing systems. Finally, our study advances a valuable middle-range epistemological frame (Kemeny and Lowe 1998) for understanding the complex social reality of housing at both the micro- and macro-level. This may inform specific policy questions, contextualize more focused analyses or help explain differential practices, aspirations or expectations across (groups of) countries. Our study helps shatter the over-generalist labelling of “post-communism” (Tuvikene 2016) and problematizes the growing view that communist housing systems were all too similar; they indeed were not.

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Supplemental Data

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Notes

1. Bulgaria (BG), Croatia (HR), the Czech Republic (CZ), Estonia (EE), Hungary (HU), Latvia (LV), Lithuania (LT), Poland (PL), Romania (RO), Slovakia (SK) and Slovenia (SI). During communism, some were part of the Eastern Bloc (BG, Czechoslovakia, HU, PL, RO and Yugoslavia,) while others were Soviet Republics of the USSR (EE, LV and LT).
2. Largely used in housing studies, the idea of housing system is rarely defined. In Kemeny's (1981, xiii) sociology of tenure, housing systems may be said to represent “the interplay between economic organizations and political ideologies as constrained and modified by wider social structures”. Wider definitions include Bourne's (1981, 12): “an imprecise, but nevertheless convenient expression encompassing the full range of interrelationships between all the actors (individual and corporate), housing units, and institutions involved in the production, consumption, and regulation of housing”. Narrower definitions include Allen's (2006, 272): “the complex of activities and practices which shape how people access housing” and Stephens and Fitzpatrick's (2007, 205): “the housing market and housing policies”.
3. Conversely, security of tenure is less challenging in the post-communist “super-ownership societies” where co-residence is preferred to private renting.
4. For instance, Kornai (1992) writes: “The strength of application and the specific constellation of the tendencies described in this book will vary appreciably from country to country and from period to period. There is repression in every country at every stage, but in one it applies on a mass scale in a particularly merciless way, while in another country or period it can be felt to be relatively mild. There is a command economy everywhere, but in one place it operates pedantically, with painstaking concern for the smallest detail, while in another it works sloppily and unreliably. Everywhere and always there is a shortage economy, but while the food shortage is unbearable in one country, the accustomed degree of shortage is quite tolerable in another” (370). Likewise “One type predominates, but attributes of another are woven into it, and the mixture may be accompanied by internal conflicts and the concurrent appearance of conflicting tendencies” (21).
5. Based on Kornai's warning on the complexity of categorizing some countries (e.g. hybridism across domains and time periods), of our reading of related housing scholarship (Michalovic 1992, 1996; Sykora 1996) and of first author's positionality as a citizen of a former classical-socialist state, we decided to include Czechoslovakia in the group of reformist-EEHM, a decision with which not everybody might agree.
6. Interestingly, Pearson bivariate correlations (Table A3 in the online annex) evidence that population change is statistically correlated with the change in Gini for income and uncorrelated with the change in GDP, being thus linked to inequality rather than economic growth.
7. If in 2005 only the Czech Republic and Bulgaria had levels below 50%, the situation has improved by 2014, only Romania showing levels above that figure.
8. For comparison, only Denmark, the United Kingdom and Belgium showed some similarly low figures (12–17%). The highest EU figures were registered in Spain (32%), Portugal (35%), Ireland (43%) and Cyprus (52%).
9. However, welfare spending remains uncorrelated with the share of population at risk of poverty/social exclusion since it is not necessarily the poor who benefit from welfare spending (Hegedüs, Lux, and Teller 2013).
10. These were implemented in the Czech and Slovak Republics in 1993; Hungary in 1997; Croatia in 1998; Romania in 2003; Bulgaria in 2004; whereas, the US-inspired securitization system was only implemented in Russia and Ukraine (Stephens, Lux, and Sunega 2015).

11. We wished to quantify the different starting positions of these countries on their post-communist transitions by sets of paired 1990/2012 variables, but data availability requires separate analytical decisions for each indicator.
12. We decided to name the 2012 clusters by commonly accepted regional toponyms, resulting thus in two different set of (communist/post-communist) names for what appears to be the same country-groups. Three crucial reasons grounded our decision: (1) politics of naming, i.e. a recognized, meaningful, single terminology suitable for both communist/post-communist periods is nonexistent; (2) symbolic recognition, i.e. these countries have traversed paradigmatic changes, including border changes which we wish to acknowledge; (3) partial country coverage, i.e. the Soviet model included all USSR Republics not only the Baltic States, the classic EEHM included Albania while SEE does not; and the reformist EEHM included all Yugoslavia not only Slovenia and Croatia.
13. In all countries, quintiles 3 and 4 show higher levels of co-residence than quintiles 1 and 2, while quintile 5 never displays the lowest figures as one would expect if only affordability was the issue. Several mechanisms may be concomitantly at play, e.g. income constraints for quintiles 1 and 2, strategies of consumption, savings and family welfare for quintiles 3 and 4, and cultural preferences across the board.
14. We interpret “better housing quality” in terms of larger dwellings and lower levels of each: housing deprivation, difficulty to access public transport, overcrowding, co-residence, cost overburden and inequality differences (variables Q1–Q6 and D1–D4).

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