



HORIZON-CL2-2023-TRANSFORMATIONS-01-09



EqualHouse

**Deliverable 3.2: Housing Inequalities
Dynamic Framework**

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5 Appendix. What has changed in the last decade? Investigation of Housing Problems across Europe since 2010

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This chapter investigates how several individual housing problems³⁰ (i.e. the indicators on which the various types of housing precariousness identified in Chapter 4 of D3.1 are based) have evolved over time since the Great Financial Crisis, using European Union (EU) Statistics on Income and Living Conditions (EU-SILC) data collected in 2010, 2012, 2014, 2016, 2018, 2020 and 2023. Based on descriptive statistics, we examine changes in the percentage of the population experiencing various aspects of housing precariousness across Europe. The results in this chapter are presented by housing problem (i.e. affordability, quality, security and energy poverty) and categorised by housing and welfare regimes³¹ (see Table 1). We use this regime typology, given its wide use in the existing literature (Grander & Stephens, 2023; Kemeny, 2006; Lersch and Dewilde 2015; Stephens, 2016), as it is built based on institutions pertaining to welfare and housing. The list of countries in each regime can be found in Table 1 below. For each problem, we first examine the overall change in the percentage of individuals experiencing each problem over time. Then, we split this into two groups – low and high income (i.e. 1st and 3rd tertile (country-specific)) – and examine how the observed trends vary between the two income groups. Here, income refers to the annual equivalised disposable household income used by Eurostat. Finally, we investigate the changes in percentage by tenure type, by

³⁰ For a detailed operationalisation of each indicator, please check Chapter 3 of Deliverable 3.1.

³¹ For more information on housing and welfare regimes, please check Chapter 1 and 2 of Deliverable 3.1.



comparing the year 2010 and 2023 (if not available, with the earlier or latest available data between the two years). We examine all individuals of interviewed households in EU-SILC data, and the data is weighted using personal cross-sectional weight in EU-SILC (RB050).

Table 5.1. Housing-Welfare Regime Typology

Housing-welfare Regime Typology	Countries
Social-democratic unitary rental market-countries	Denmark, The Netherlands, Sweden
Conservative-corporatist unitary rental market-countries	Austria, Germany, France
NWE homeownership countries with a dual rental market	Belgium, Finland, Ireland, Luxembourg, Norway, United Kingdom
SE family-based homeownership countries	Cyprus, Spain, Greece, Italy, Malta, Portugal
Baltics	Estonia, Latvia, Lithuania
CEE-countries	Bulgaria, Czech Republic, Croatia, Hungary, Poland, Slovenia, Slovakia, Romania

5.1 Affordability

The (un)affordability of housing can be observed through two measures – namely, objective and subjective measures of housing cost overburdening. Objective burden – referred to as ‘overburden’ in this deliverable – is defined as spending total housing costs (according to the EU-SILC definition) exceeding a certain threshold with reference to household income. Subjective burden, on the other hand, refers to an individual’s perception of being overburdened by their housing costs. Subjective measures often complement the limitations of objective measures of housing cost overburdening that rely on thresholds based on theoretical assumptions (Bramley, 2012; Heylen, 2023). Subjective measures tend to fluctuate less than objective measures, as they are more reflective of the national contexts or norms (Sunega & Lux, 2016). Thus, considering both objective and subjective measures provides a more comprehensive view of housing (un)affordability.

In our deliverable, the threshold that defines objective housing cost overburdening varies by household income, in order to account for the underestimation of overburden experienced by low-income households (see Bramley, 2012; Dewilde, 2018; Dewilde & De Decker, 2016; Heylen, 2023). These





thresholds are set at 25% for the first income quintile, 30% for the second quintile, 40% for the third quintile, and 50% for the fourth and fifth quintiles. Furthermore, note that in EU-SILC respondents can indicate to have no subjective burden, a slight burden, or a heavy burden. The data below only present those who experienced a heavy burden, to highlight more severe cases.

5.1.1 Overburden (objective)

This section examines trends in the percentage of individuals across Europe that experience housing cost overburden (i.e. overburden rate) between 2010 and 2023, by welfare regime. The overburden rate is somewhat consistent over time in the unitary rental market-countries (Figure 1), with the exception of the Netherlands where the overburden rate decreased in the last decade after increasing to 26.9% in 2014. The overburden rate in Denmark also decreased over time since its highest point in 2010 (29.3%), albeit showing the highest overburden rate amongst the unitary rental market-countries in 2023 (23.5%). On the contrary, the objective overburden rate increased in Sweden since 2010, although slightly (by 3.6%p (percentage points) between 2010 and 2023). The countries with a conservative-corporatist unitary rental market show a more consistent overburden rate over time compared to the social-democratic countries. The only notable changes are a rather rapid decrease between 2018 and 2020 (by 6.8%p) in Germany, increasing again between 2020 and 2023 (5.1%p).



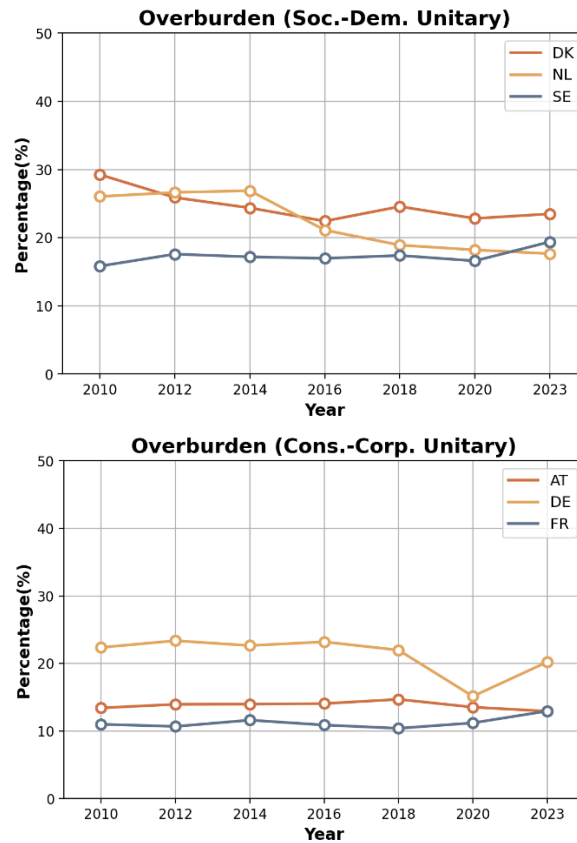


Figure 5.1 Trends in overburdened rate across unitary rental market countries 2010-2023 (%)

Note: disconnected line indicates no data available for that year. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries.

The same patterns are found when examining these trends by income level (Figure 2). However, what needs to be noted is that these patterns are driven by low-income respondents (1st tertile), as respondents in high-income households (3rd tertile) all show less than 3% overburden rate in all years. In Denmark, the housing cost overburden rate is generally high (above 60% for all years observed) for low-income respondents, followed by the Netherlands and Germany. The lowest overburden rate among low-income respondents is found in France, despite an increase in the last 5 years. In Sweden, high-income respondents almost never experience housing overburdening, except for 2023 (0.2%).



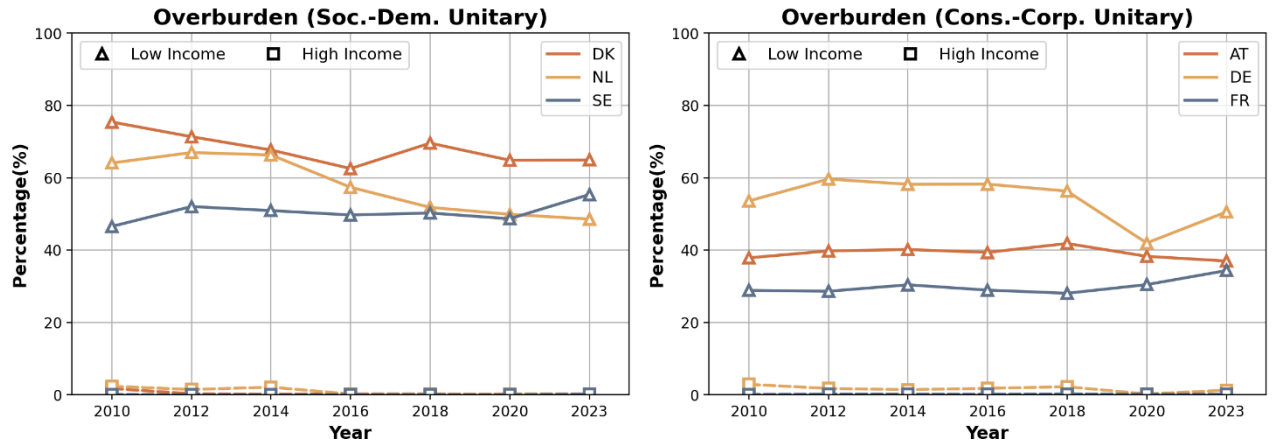


Figure 5.2 Trends in overburdened rate across unitary rental market countries by income 2010-2023 (%)

Note: low income refers to the first tertile and high income refers to the third tertile. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries.

When observing the changes between 2010 and 2023 by tenure status (Figure 3), we can examine which tenure status has experienced the most change in housing cost overburdening. Denmark shows an overall decrease in the overburden rate across tenure statuses, while the largest decrease is found amongst outright homeowners (13.8%p) and the smallest decrease among the reduced rent-tenants (1.3%p). In the Netherlands, the overburden rate decreased for homeowners, while it increased for tenants, especially for the reduced-rate renters (4.2%p). In Sweden, it increased by 5.0%p for outright homeowners, 3.2%p for reduced-rate renters, and decreased by 0.01%p for mortgage homeowners. In Austria, there was a slight decrease in overburden rate between the two years for all tenure types. Germany also shows an overall decrease in overburden rate for all tenure statuses. France shows a mixed picture, as it shows increase in overburden rate amongst the outright homeowners and reduced-rate renters, but a decrease among the mortgaged homeowners and market-rate renters, although the change is minimal except for the reduced rate-renters (7.1%p).



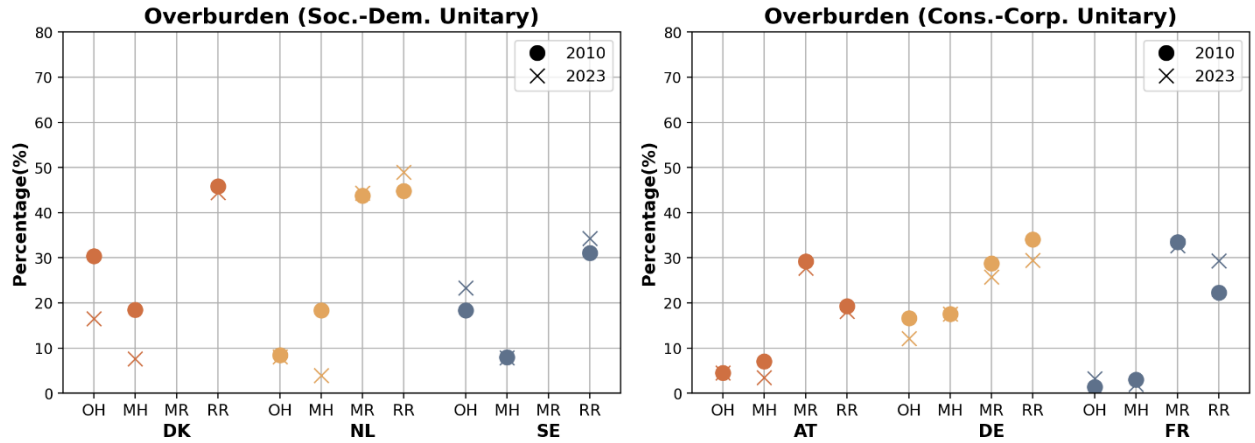


Figure 5.3 Changes in overburdened rate across unitary rental market countries by tenure between 2010 and 2023 (%)

Note: Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Given no clear distinction between market rent and reduced rent in the Soc.-dem. unitary rental market countries, where rents are strictly regulated, all tenants are coded as renting at 'reduced rent'. This applies to DK and SE. In the NL, we distinguish the two rental tenures using the 'liberalisatiegrens'. This is a fixed amount that limits the starting rent of social rental housing, as opposed to a prevailing market rent.

The overburden rate in the North-Western)European homeownership countries with a dual rental market shows more fluctuations compared to the unitary rental market-countries, albeit with intra-regime variations (see Figure 4). In Belgium, housing cost overburdening decreased since 2012 after reaching its highest point of 19.5%, and remains the only country in this regime that has not experienced an increase in overburden rate. However, it needs to be noted that Belgium had the second highest overburden rate compared to other countries in this regime. The overburden rate remained consistent in Finland, with a slight overall increase (by 2.4%p between 2010 and 2023), while in Norway it showed a consistent increase especially since 2014 with an overall increase of 6.0%p between 2010 and 2023. In Ireland, housing cost overburdening decreased since reaching its highest point in 2012 (11.8%), but again increased since reaching its lowest point in 2018 (7.1%). Luxembourg shows the highest increase especially with a large leap between 2020 and 2023 (13.2%p), with an overall increase of 17.7%p between 2010 and 2023. The United Kingdom (UK) demonstrates the most



fluctuating overburden rate with a sharp decrease between 2010 and 2012 (13.0%p), followed by overall increase since 2012.

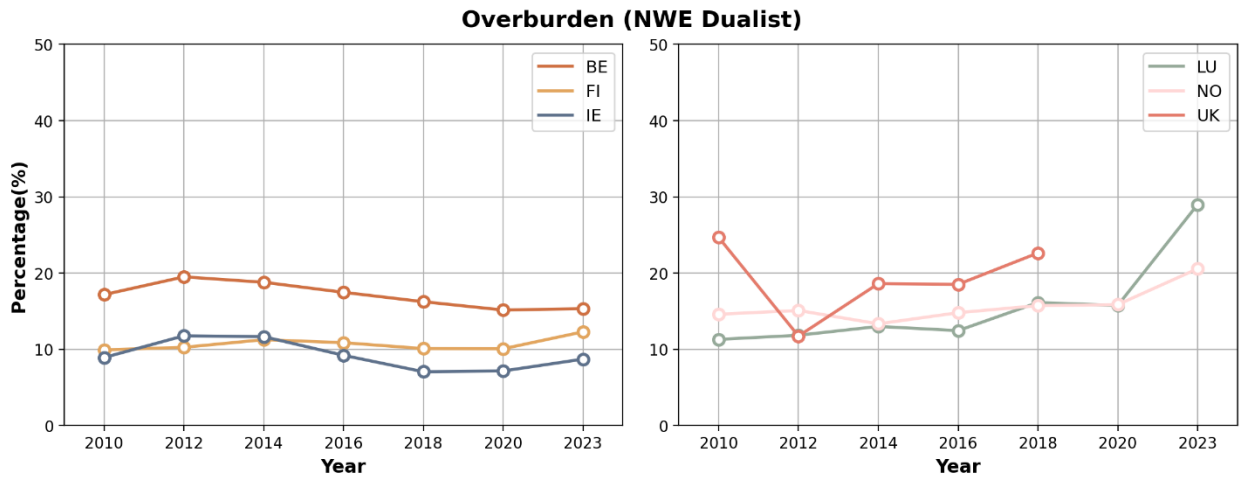


Figure 5.4 Trends in overburdened rate across NWE homeownership dual rental market countries 2010-2023 (%)

Note: disconnected line indicates no data available for that year. NWE refers to North-Western Europe

Figure 5 demonstrates that the patterns are again consistent for low-income respondents when we compare low-income respondents with high-income respondents, however more pronounced. The overburden rate amongst high-income respondents (3rd tertile) is generally low (below 2%), with the exception of Norway in 2023 which reaches 4.2%, increasing by 3.8%p since 2020. However, the increase was more stark for low-income respondents with 6.2%p increase between 2020 and 2023, reaching 50.2% for the overburden rate in 2023. Belgium shows a consistently high overburden rate among low-income respondents despite the decrease, ranging between 40-60% in all observed years. Ireland shows the lowest overburden rate among low-income respondents since reaching its highest point of 32.0% in 2012, despite the increase between 2020 and 2023.



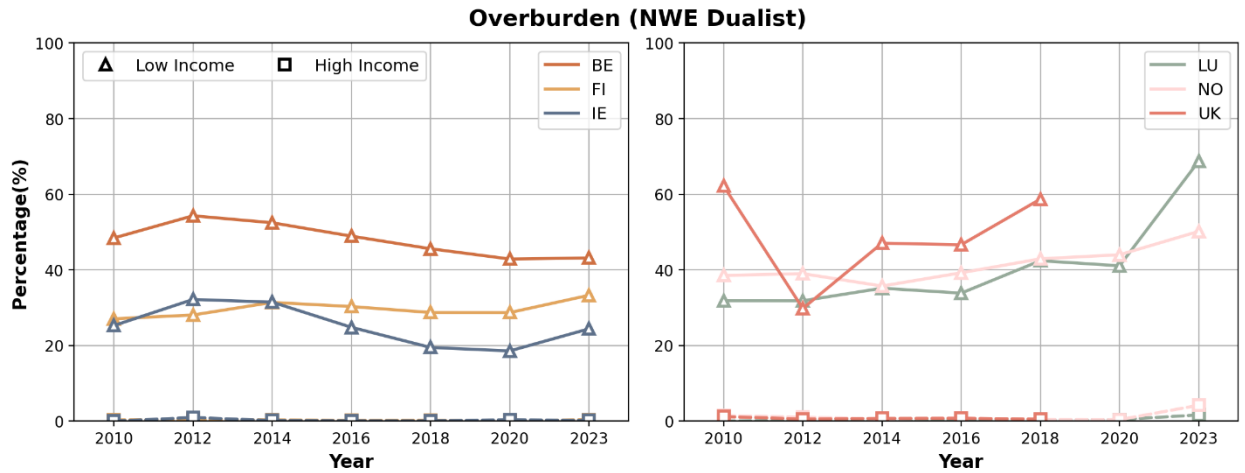


Figure 5.5 Trends in overburdened rate across NWE homeownership dual rental market countries by income 2010-2023 (%)

Note: disconnected line indicates no data available for that year. NWE refers to North-Western Europe.

Figure 6 demonstrates the changes in the housing cost overburden rate between 2010 and 2023 by tenure status in the North-Western European countries with a dualist rental market. It shows that the decrease in overburden rate in Belgium may be driven mostly by the decrease amongst mortgage homeowners. In Finland, the increase is most likely driven by the market renters (by 7.7 %p), while in Norway it is the mortgaged homeowners (by 6.7%p), although it decreased by 20.6 %p among reduced-rate renters. In Ireland, the overburden rate has increased for the renters (0.4%p for the market-rate renters and 4.6%p for the reduced-rate renters) but decreased for homeowners (0.6%p for outright owners and 4.2%p for mortgaged owners). In the UK, all tenure types experienced a decrease in overburden rate, except for the increase amongst the reduced rate renters (2.8%p). The rapid increase in overburden rate in Luxembourg is led by all tenures, and more prominently for mortgaged homeowners (32.9%p) and reduced-rate renters (28.8%p).



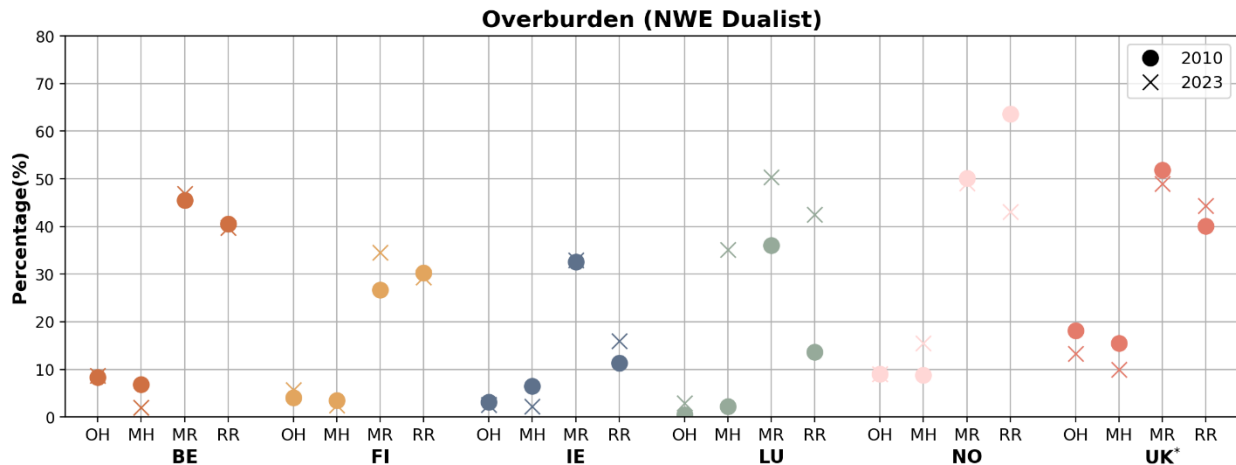


Figure 5.6 Changes in overburdened rate across NWE homeownership dual rental market countries by tenure between 2010 and 2023 (%)

Note: in the UK the latest data is from 2018, not 2023. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. In the UK, as of 2017, housing associations are labelled as private rather than social housing providers, leading to a break in the data lines.

In Southern-European countries with family-based homeownership (Figure 7), we can observe one big outlier: Greece. The overburden rate in Greece was the highest in 2010 (30.2%) and it increased sharply until 2014 (reaching 47.8%). Although it decreased over time, it remains the highest even when compared to all the other countries we observe in our analysis. Cyprus and Spain show a consistent overburden rate over time, although in Spain the average across years is 14.9% and in Cyprus it is roughly 6%. Italy is also somewhat consistent over time, with a slight peak in 2016 (15.3%) and a gradual decrease since then. In Portugal, the housing cost overburden rate increased until 2014 (15.4%) then decreased to a point similar to where it started in 2010. Malta shows a generally low overburden rate, although it has increased gradually since 2016. While Malta showed the lowest overburden rate until 2020, it has become the second lowest after Cyprus in 2023.



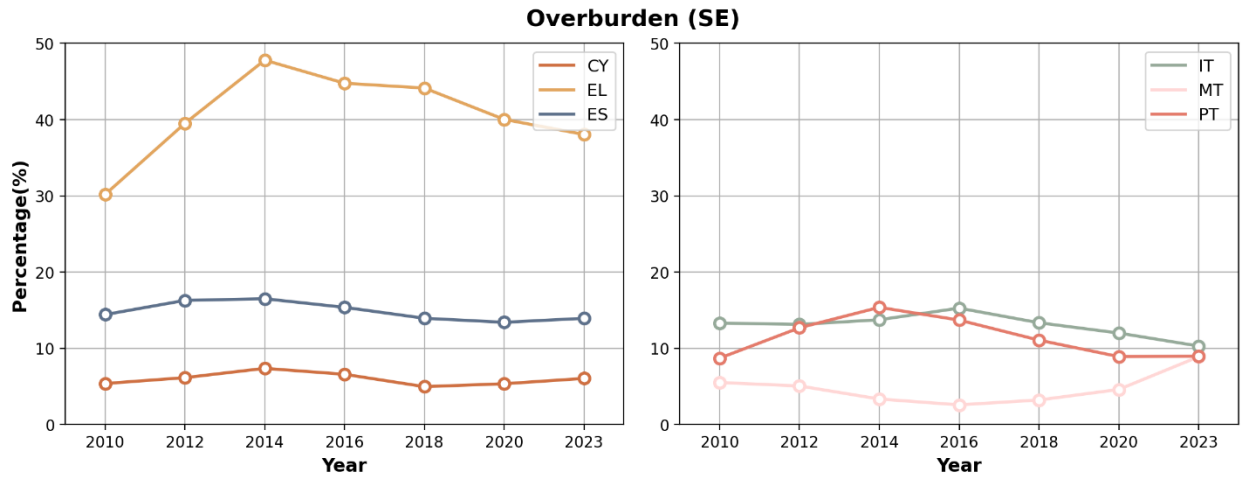


Figure 5.7 Trends in overburdened rate across SE family-based homeownership countries 2010-2023 (%)

Note: SE refers to Southern Europe.

Similar patterns are found when we examine the overburden rate of low-income respondents (Figure 8). Greece shows the highest overburden rate especially since the sharp increase by 13.4%p between 2012 and 2014. It needs to be noted that the overburden rate does not fall below 80% amongst low-income respondents in Greece in all years observed. However, this does not fully capture the sharp increase that continues between 2012 and 2014 in Figure 7. This can instead be explained by the relatively steep increase in the housing cost overburden rate amongst high-income respondents between 2012 and 2014 (5.8%p) and steadily rapid increase between 2010 and 2014 amongst middle-income respondents (see supplementary document). Greece is also the only country that shows a more than 1% overburden rate amongst high-income respondents, when compared to other countries in this regime.



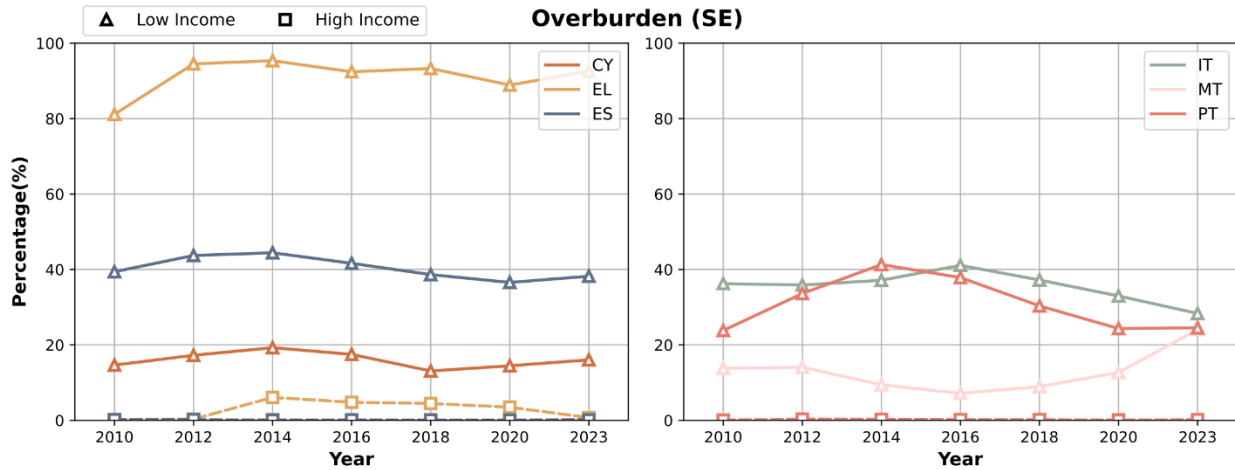


Figure 5.8 Trends in overburdened rate across SE family-based homeownership countries by income 2010-2023 (%)

Note: SE refers to Southern-Europe.

The stark increase observed in Greece is driven by an increase in all tenure statuses, except for the market renters. The increase amongst the reduced-rate renters is especially prominent (33.9%p), followed by mortgaged homeowners (12.4%p) and outright homeowners (6.6%p). Despite the consistent overburden rate in Cyprus and Spain, Figure 9 shows that there have been changes in the overburden rate among different tenure statuses. In Cyprus, the overburden rate decreased for the homeowners (by 0.9%p for outright owners and 1.4%p for mortgaged owners) and increased for renters (by 3.0%p for market-rate renters and 22.8%p for reduced-rate renters). In Spain, it increased for the outright homeowners (by 0.9%p) and reduced-rate renters (by 12.9%p), but decreased for mortgaged homeowners (4.9%p) and market-rate renters (by 11.0%p). The overall decrease of the overburden rate in Italy is mainly driven by mortgaged homeowners (6.3%p) and market renters (14.6%p). Malta also shows a decrease in the overburden rate amongst the mortgaged homeowners and market-rate renters, but an increase amongst the reduced-rate renters (6.5%p). On the contrary, Portugal show a decrease amongst the homeowners (0.1%p for outright homeowners and 4.6%p for mortgaged homeowners) and an increase among



the renters (13.0%p for market-rate renters and 1.4%p for the reduced-rate renters).

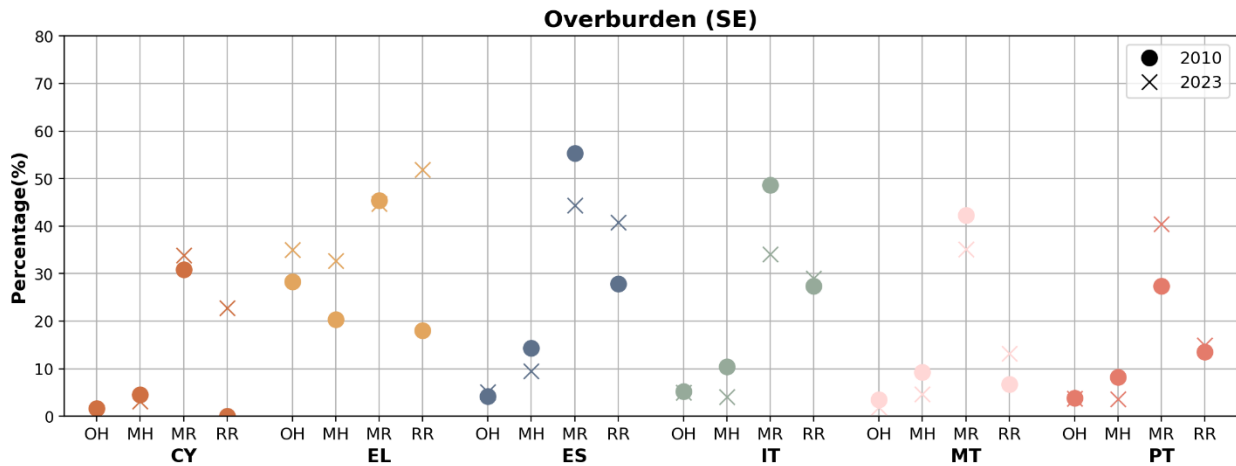


Figure 5.9 Changes in overburdened rate across SE family-based homeownership countries by tenure between 2010 and 2023 (%)

Note: SE refers to Southern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

Figure 10 presents the trends in the housing cost overburden rate in Eastern-European-countries. In the Baltics (i.e. Estonia, Lithuania and Latvia), there is a generally decreasing trend especially after 2014, and again an increase between 2020 and 2023. They generally remain between 10-20%. The highest point is in Latvia in 2012 with 17.6%. More fluctuation in the trend is found in the Central- and Eastern-European countries. A generally decreasing tendency is observed in the Czech Republic, Croatia, Hungary, Poland, Romania, Slovenia and Slovakia, although, except for Croatia and Slovenia, they all show increase in the overburden rate between 2020 and 2023. Among them, Hungary shows the most sharp increase between 2020 and 2023 (almost double), after a rather sharp decrease between 2018 and 2020 (almost half). While Romania started as the country with the highest housing cost overburden rate (23.7%) in 2010, it is located around the middle in 2023 (14.4%). The opposite is the case for Bulgaria, which started as a country with one of the lowest housing cost overburden rates in 2010 (13.6%), yet shows the highest rate in 2023 (20.9%). In Bulgaria, the



overburden rate increased until 2016, relatively sharply between 2010 and 2012 and between 2014 and 2016, and began to slowly decrease since 2016.

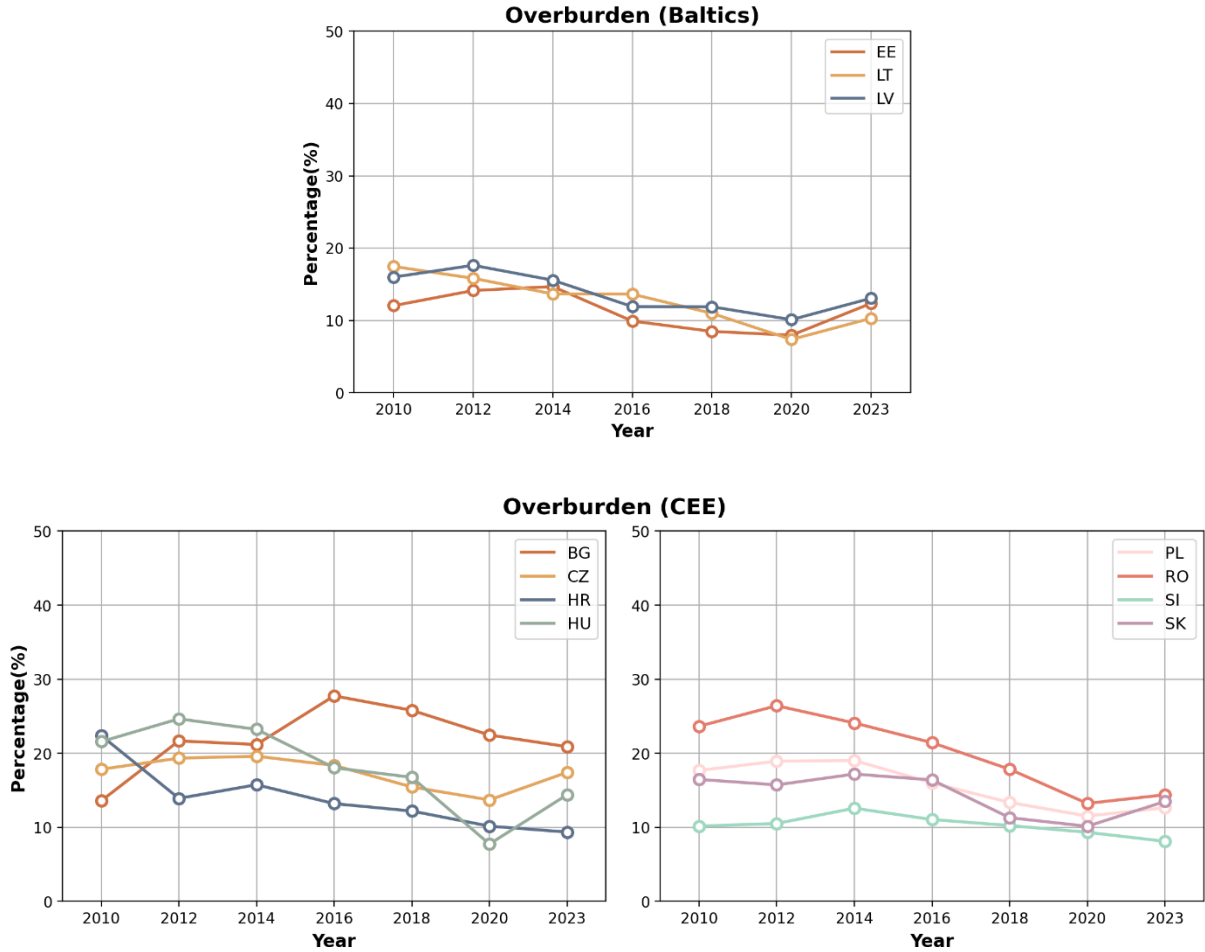


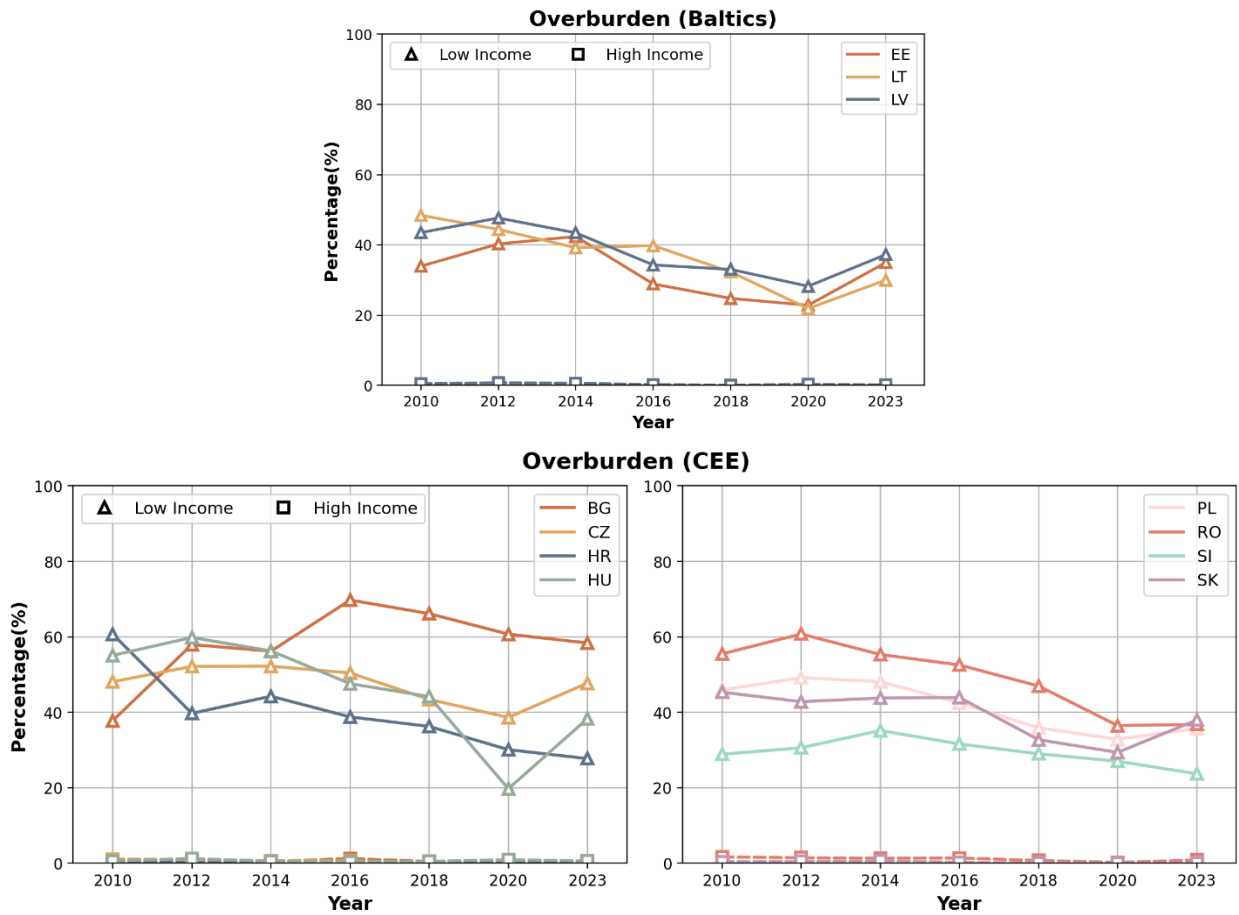
Figure 5.10 Trends in overburdened rate across Eastern European countries 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated (For more information, see Tátrai et al., 2025; Tátrai & Gábos, 2025).

The patterns found in Figure 10 are similar to those presented in Figure 11 for low-income respondents. This, along with the other countries examined above, allows us to infer that housing cost overburdening is mostly experienced by low-income respondents. The overburden rate among high-income respondents in all



observed countries in Eastern-Europe is below 2%, with Romania showing a



relatively high rate of about 1.1% across the observed years.

Figure 5.11 Trends in overburdened rate across Eastern European countries by income 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated.

Figure 12 shows changes in the overburden rate between 2010 and 2023 across Eastern-European countries by tenure status. Although to different extents, Lithuania, Latvia, Hungary, Croatia and Poland show a decrease in the overburden rate in all tenure statuses. In Lithuania, the biggest decrease is for market-rate renters by 23.6%p, while in Latvia, the biggest decrease is found among mortgaged homeowners (11.6%p). In Croatia, the biggest decrease is found amongst homeowners (12.8%p for outright owners and 12.3%p for



mortgaged owners). Mortgaged homeowners experienced the biggest decrease in overburden rate in Hungary as well (by 12.4%p). In Poland, the biggest decrease is found amongst renters (13.5%p for market-rate renters and 21.0 %p for reduced-rate renters). On the contrary, in Bulgaria, all tenure statuses experienced increases in the housing cost overburden rate, reduced-rate renters in particular (24.6%p). In other countries, it decreased for homeowners, while it increased for market renters in Estonia, Czech Republic and Slovakia, reduced-rate renters in Slovenia.

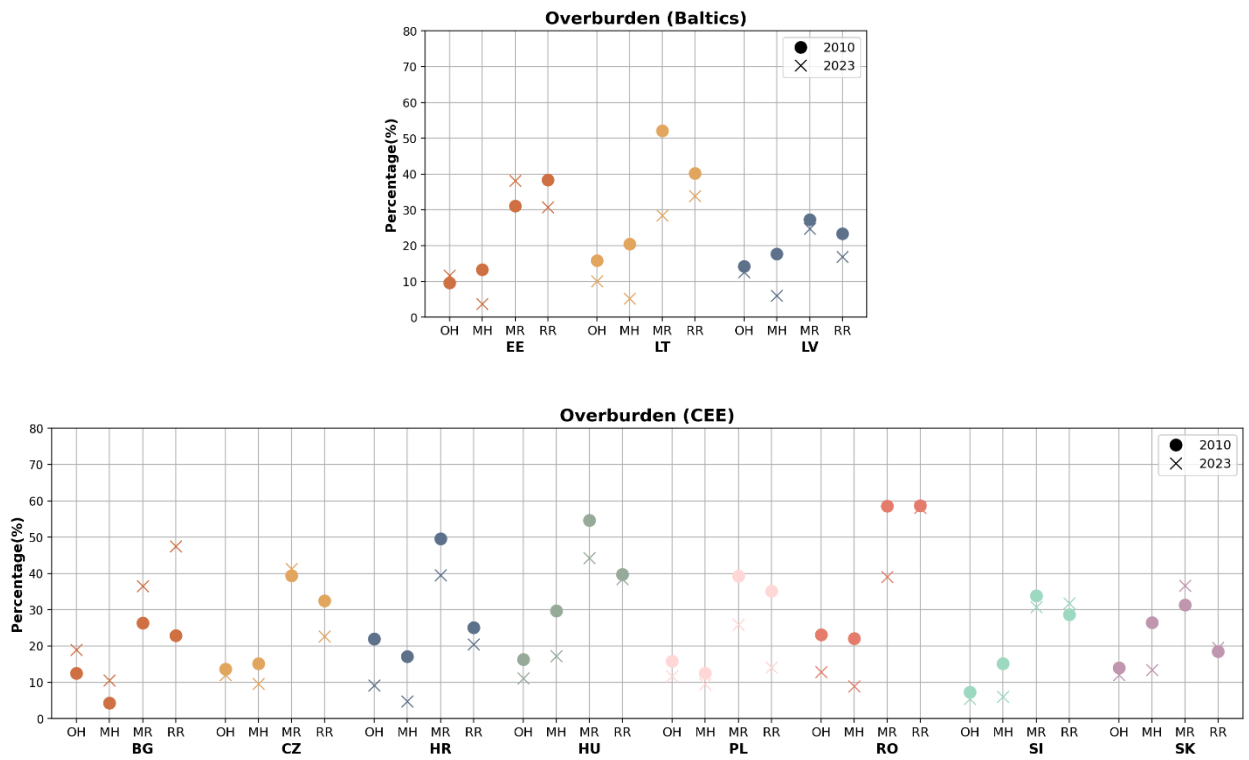


Figure 5.12 Changes in overburdened rate across Eastern European countries by tenure between 2010 and 2023 (%)

Note: CEE refers to Central-and-Eastern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated.



5.1.2 Subjective burden

This section examines trends in the prevalence of individuals across Europe that experience subjective housing cost overburdening (i.e. subjective burden rate) between 2010 and 2023. As shown in Figure 13, changes in countries with social-democratic unitary rental markets with regard to this indicator are minimal. The only notable difference in these countries is the generally stable subjective burden rate in Sweden despite a slight increase between 2020 and 2023, gradual decrease in Denmark and the Netherlands since 2014, although in Denmark there is an increase again after 2020. While the trends are also generally stable in countries with a conservative-corporatist unitary rental market, the subjective housing cost burden is relatively higher in these countries compared to the social-democratic countries, and there is a relatively sharp increase in Germany and Austria. It needs to be noted, however, that notwithstanding these increases France shows the highest subjective burden rate amongst the three countries.



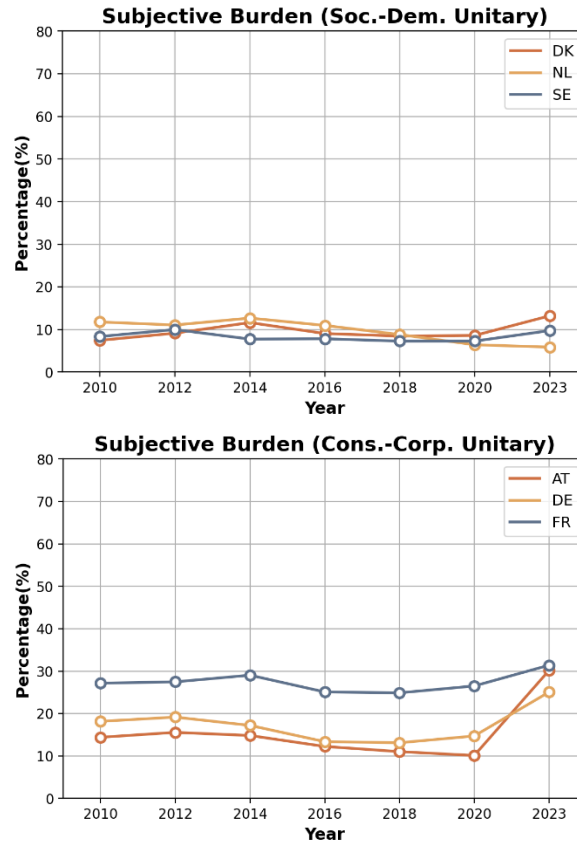


Figure 5.13 Trends in subjective burden rate across unitary rental market countries 2010-2023 (%)

Note: disconnected line indicates no data available for that year. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries.

The patterns found in Figure 13 are generally consistent with the subjective burden rate trends over time for low-income respondents in Figure 14, although the gaps between countries are more pronounced. Comparing the two figures, we can observe that the prevalence of subjective housing cost burden overburdening is relatively lower for Denmark than for the Netherlands and Sweden when it comes to low-income respondents, although this is reversed in 2023, when low-income respondents in Denmark show the highest subjective housing cost overburdening rate compared to low-income respondents in the other two countries. As can be seen from Figure 13, France shows the highest subjective burden rate among low-income respondents around 40%. This indicator also increased sharply in Austria between 2020 and 2023. What is



notable compared to the objective overburden rate is that we also see subjective housing cost burdens experienced by high-income respondents. The gap between high- and low-income respondents is the lowest in Denmark of all unitary rental market countries (on average 9.9%p). That is because while the subjective burden rate is relatively lower for low-income respondents, it is relatively higher for high-income respondents in Denmark. The gap between low- and high-income respondents is higher in conservative-corporatist countries, with France displaying the largest gap (on average 26.2%p) despite having the highest subjective overburdening rate for both low- and high-income respondents.

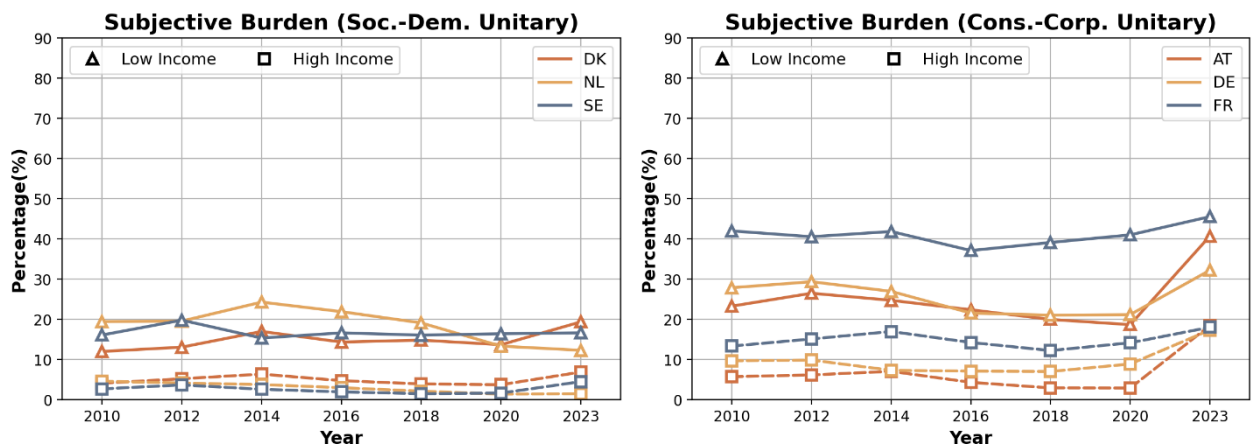


Figure 5.14 Trends in subjective burden rate across unitary rental market countries by income 2010-2023 (%)

Note: low income refers to the first tertile and high income refers to the third tertile. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries.

Subjective burden rate has generally increased across tenure status between 2010 and 2023 in the unitary rental market countries except for the Netherlands and Sweden (Figure 15). In Denmark, the most notable increase is found among reduced-rent renters (8.8%p), and in Austria it is for reduced-rate renters (23.1%p) and mortgage owners (21.8%p). In Germany, subjective burden rate increased by similar extent across tenure status. While it also increased for all tenure statuses



in France, the highest increase is found among the reduced-rate renters (6.5%p). In the Netherlands, subjective burden rate decreased for all tenure statuses. Most notable difference, RR is the decrease in the rate among the market-rate renters (16.0%p). In Sweden, the change is very minor but it only increased for homeowners.

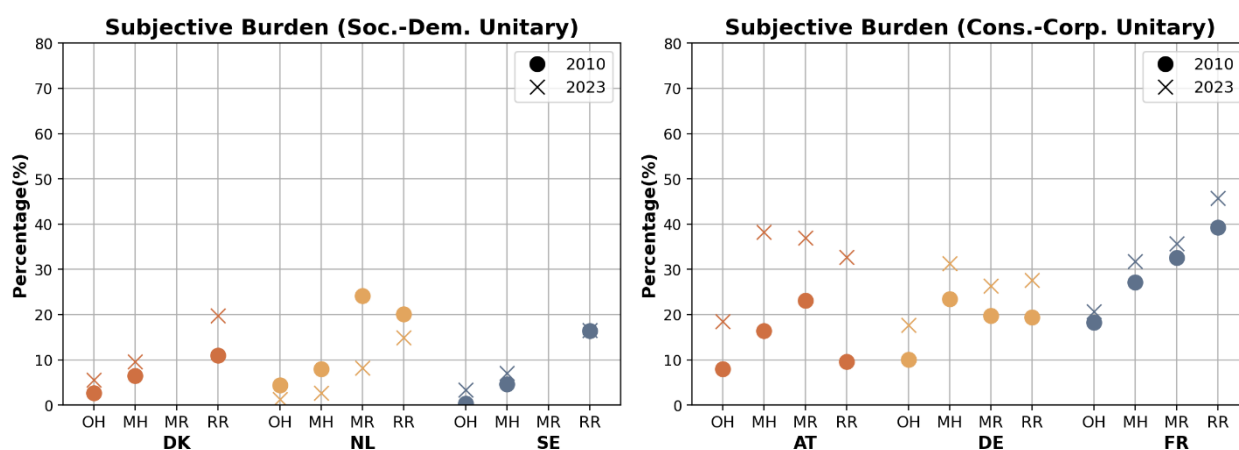


Figure 5.15 Changes in subjective burden rate across unitary rental market countries by tenure between 2010 and 2023 (%)

Note: Some data are missing including the reduced rent in Denmark in 2010 and reduced-rent in Sweden in 2023. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Given no clear distinction between market rent and reduced rent in the Soc.-dem. unitary rental market countries, where rents are strictly regulated, all tenants are coded as renting at 'reduced rent'. This applies to DK and SE. In the NL, we distinguish the two rental tenures using the 'liberalisatiegrens'. This is a fixed amount that limits the starting rent of social rental housing, as opposed to a prevailing market rent.

Figure 16 presents the trends in subjective burden rate across North-Western European homeownership countries with dual rental market between 2010 and 2023. As discussed above, subjective burden is less volatile compared to the objective overburden rate observed in the previous section. Generally, we see a stable trend across countries, except for the UK and Ireland that show a decreasing tendency since 2014. Moreover, while generally consistent, Luxembourg shows a decrease in subjective burden rate in 2014 (35.0%) which recovers in 2016 (39.2%) and gradually decreases since then. Except for that point in 2014, Luxembourg shows the highest subjective burden rate over time, and



Norway the lowest. Norway, despite the increase between 2020 and 2023, shows subjective burden rate below 10% in all observed years.

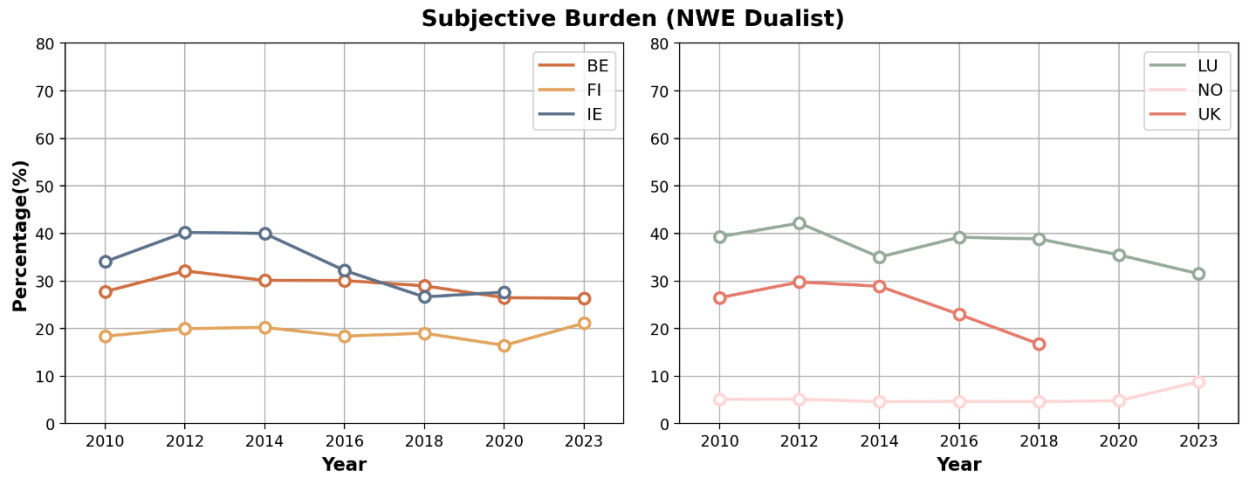


Figure 5.16 Trends in subjective burden rate across NWE homeownership countries with dual rental market 2010-2023 (%)

Note: disconnected line indicates no data available for that year. NWE refers to North-Western Europe

Figure 17 demonstrates the trends in subjective burden rate across NWE homeownership countries with dual rental market by income level. Similar to what was observed so far, the patterns found in Figure 16 is somewhat similar to the patterns found among low-income respondents in Figure 17. Luxembourg shows the highest burden rate among low-income respondents around 60% over time, although it has decreased sharply between 2020 and 2023 by 16.8%p. A key divergence between the low- and high-income in Luxembourg occurs since 2016, where the two takes opposite tendencies (i.e. when it decreases for low-income respondents, it increases for high-income respondents). The average gap between the low- and high-income is also the largest in Luxembourg (on average 36.5%p) among the countries in Figure 17. Unlike the overall rate, subjective burden continues to decrease after reaching its peak in 2014 in Ireland for low-income respondents, while that slight increase is found among high-income respondents. Norway, in particular shows lowest overall subjective burden rate for



both low- and high-income respondents, as well as the lowest gap between the two (on average 9.1%p).

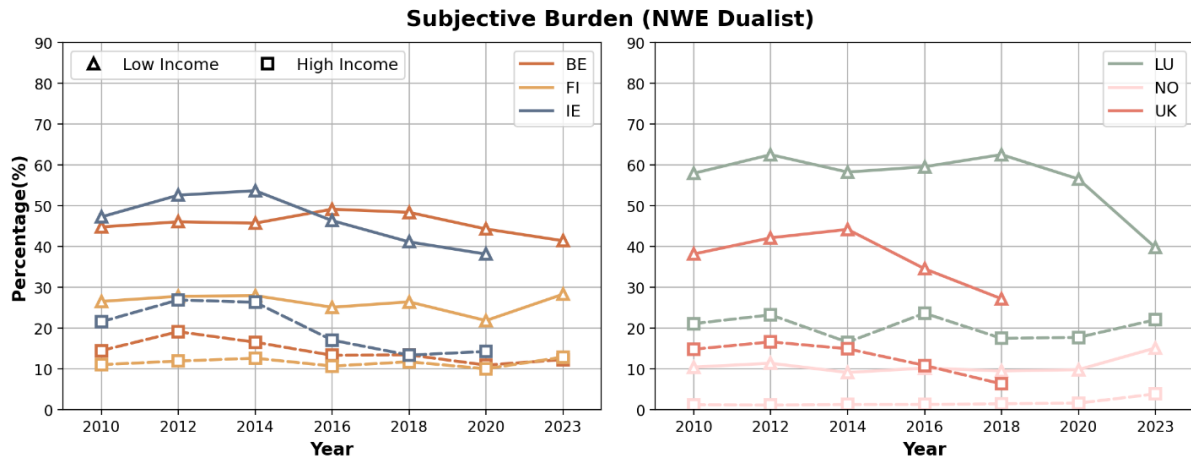


Figure 5.17 Trends in subjective burden rate across NWE homeownership countries with dual rental market by income 2010-2023 (%)

Note: disconnected line indicates no data available for that year. NWE refers to North-Western Europe

Figure 18 presents how the changes in subjective burden rate between 2010 and 2023 occurred for each tenure status. In Luxembourg and the UK, subjective burden rate decreased in all tenure statuses, most notably among outright homeowners in Luxembourg (by 12.9%p) and mortgage homeowners in the UK (by 14.1%p). In Finland and Norway, it increased for both homeowner tenures and market-rate renters, but decreased for reduced-rate renters (by 1.9%p in Finland and 1.4%p in Norway). In Belgium, homeowners and renters fared differently, as the subjective burden rate decreased for the homeowners while it increased for all types of renters.



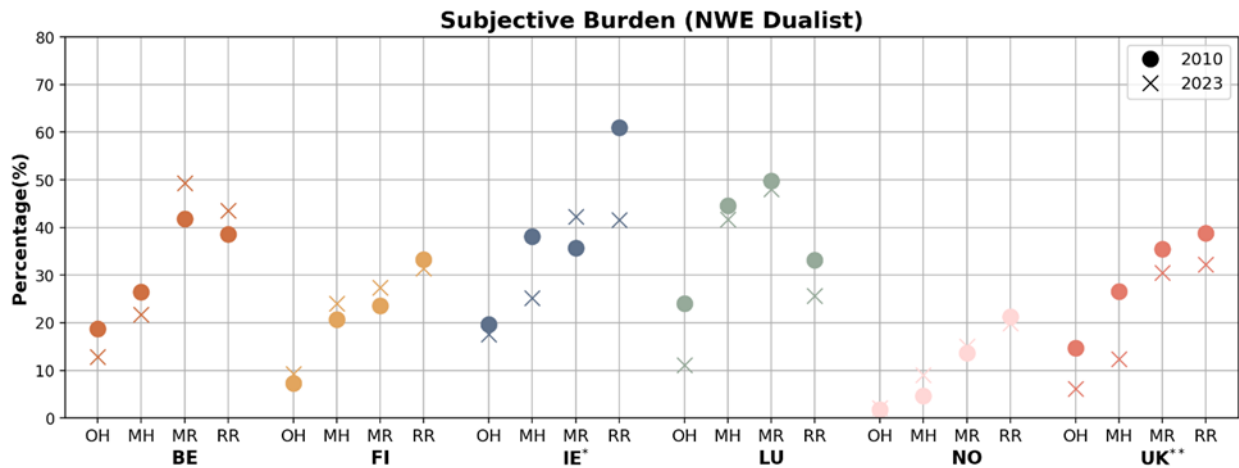


Figure 5.18 Changes in subjective burden rate across NWE homeownership countries with dual rental market by tenure between 2010 and 2023 (%)

Note: in the UK the latest data is from 2018 and in Ireland it is from 2020, instead of 2023. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. In the UK, as of 2017, housing associations are labelled as private rather than social housing providers, leading to a break in the data lines.

Figure 19 shows a very different pattern from the overburden rate in Figure 7. In contrast to Figure 7, where most countries, with the exception of Greece, show a low and stable overburden rate over time, Figure 19 shows that perceived burden was still prevalent in the other countries, such as Malta, Spain, Cyprus and Italy, especially in the aftermath of the Global Financial Crisis (GFC). Malta especially recovers quickly, evidenced by the sharp decrease in subjective burden between 2014 and 2016 that almost halved in the two years. What is notable is that Greece, on the contrary, shows relatively low subjective burden rate, although it relatively rapidly increases over time until 2020. Further research is required to understand such discrepancies between the objective and subjective measures. Portugal shows the overall low subjective burden rate compared to other Southern European countries, especially as it decreased since reaching its highest point in 2014 (39.6%), although increased again between 2020 and 2023. However, it needs to be noted that Portugal has a higher subjective burden rate when compared to other countries observed above.

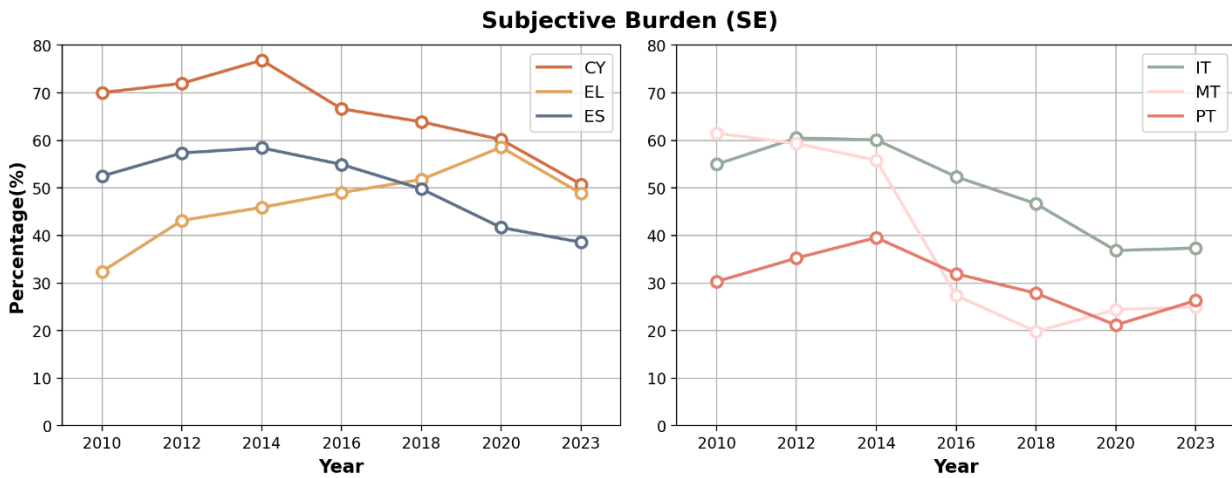


Figure 5.19 Trends in subjective burden rate across SE family-based homeownership countries 2010-2023 (%)

Note: SE refers to Southern Europe.

Figure 20 shows that the subjective burden rate changed differently for low- and high-income respondents across countries. In Cyprus, although the rate is high for both low- and high-income respondents in 2010 (with the gap of 20.9%p; smallest among SE countries), the gap continued to increase over time between low- and high-income respondents as it decreased more rapidly for high-income respondents. This trend stopped in 2023 as the subjective burden rate decreases relatively sharply for low-income respondents compared to high-income respondents. In Greece, the gap increased as the subjective burden rate increases more rapidly for low-income respondents compared to high-income respondents. Sharp decrease between 2020 and 2023 among low-income respondents decreased this gap in 2023. However, it shows the biggest gap in 2023 among the SE countries (31.8%p). Spain shows the biggest difference between the low- and high-income in 2010 (with the gap of 30.9%p). This gap fluctuated over time, but decreases in 2023 with the increase among high-income respondents and decrease among low-income respondents. In Italy, the gap between the low- and high-income also fluctuates over time, as they both



decrease over time. However, with the increase of subjective burden rate among high-income respondents between 2020 and 2023, the gap decreases in 2023. Malta shows the smallest gap between the low- and high-income in 2023. It is driven by rapid decrease of burden among low-income respondents until 2018 and the increase in burden among the high income between 2018 and 2023. In Portugal, trends are somewhat similar for the low- and high-income, maintaining certain gap between the two, but the gap starts to close over time with the more rapid decrease in burden among low-income respondents compared to high-income respondents.

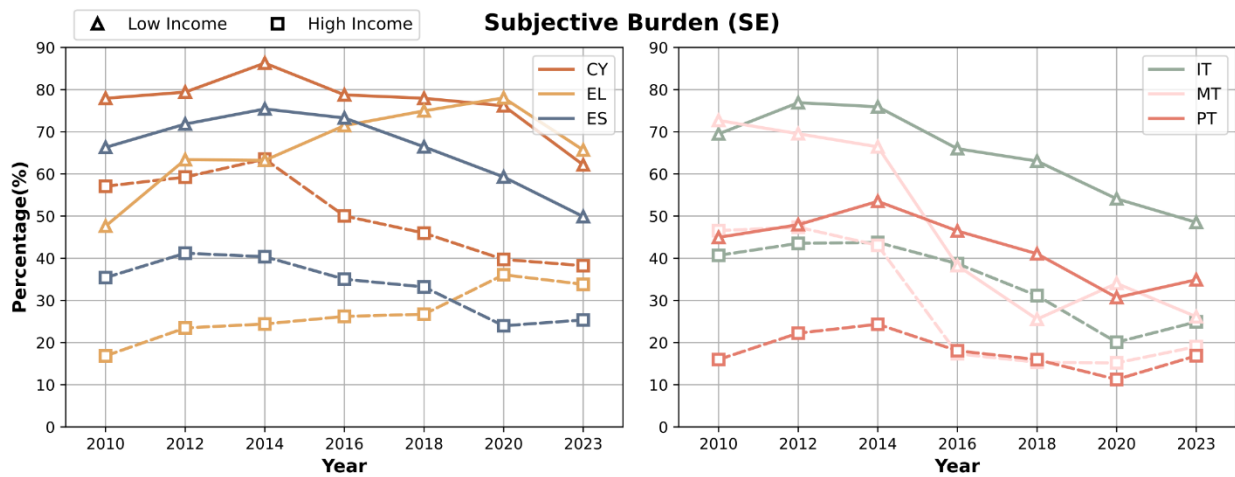


Figure 5.20 Trends in subjective burden rate across SE family-based homeownership countries by income 2010-2023 (%)

Note: SE refers to Southern Europe.

In most countries in Southern Europe, subjective burden rate decreased in all tenure statuses. The biggest decrease in Cyprus and Spain is among reduced-rate renters with the decrease by 33.7%p and 20.7%p respectively. In Italy, it is the mortgage owners and market-rate renters with the biggest change, decreasing by 21.5%p and 22.0%p respectively. The changes are large for all tenure statuses in Malta, evidenced by the decrease by 41.3%p among the market-rate renters and by 38.3%p among the outright owners. In Portugal, most tenure statuses experienced decrease in subjective burden, although to a different extent, except



for reduced-rate rent which increased by 9.4%p. Greece, however, shows increase in subjective burden for all tenure statuses. The biggest increase is found among the homeowners, with 16.6%p for outright owners and 18.0%p for mortgage owners.

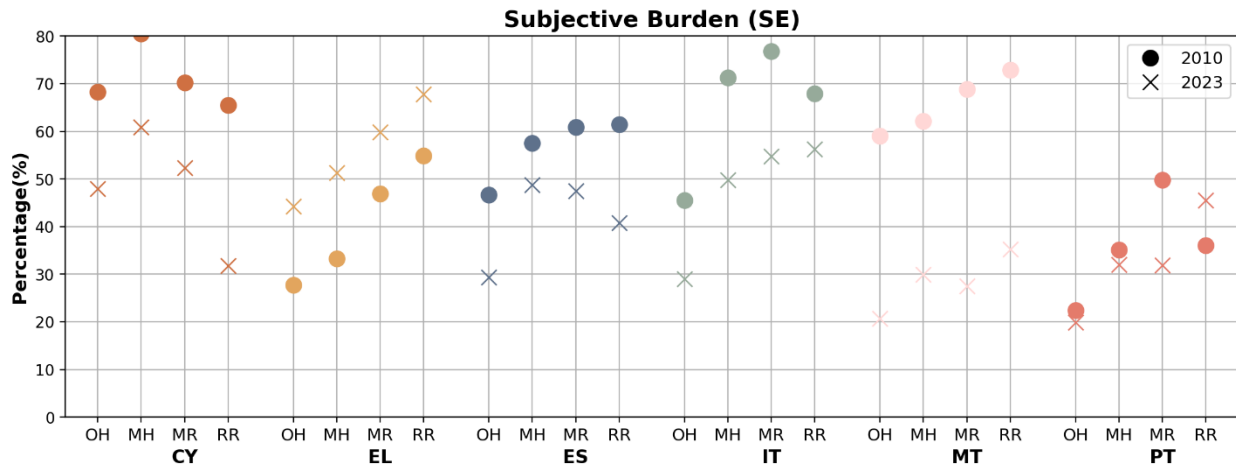


Figure 5.21 Changes in subjective burden rate across SE family-based homeownership countries by tenure between 2010 and 2023 (%)

Note: SE refers to Southern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

Figure 22 shows the trends in subjective burden rate across Eastern European countries between 2010 and 2023. In Baltics, there is a clear downward trend in the perceived burden, with the exception of Estonia between 2020-2023. Poland shows the highest overall subjective burden rate over, while showing decreasing trend since reaching its peak in 2014 (63.7%). In Croatia, subjective burden increased until 2014 and decreased at a faster rate than other Eastern European countries since then. Despite the decrease, it still shows one of the highest subjective burden rate in Eastern Europe in 2023 (33.7%). Bulgaria, Czech Republic and Hungary also show a decreasing tendency over time, both with a relatively rapid decline between 2018 and 2020, especially in Hungary, but it increases again between 2020 and 2023. Romania also shows similar pattern, but in contrast to Hungary, it shows a relatively slow decrease overtime but a rapid increase between 2020 and 2023. In Slovenia, it remains relatively stable over time



and slowly decreases, with the exception of 2018 when it goes up but down again in 2020. In Slovakia, it decreases after 2014 but starts to increase again after 2018.

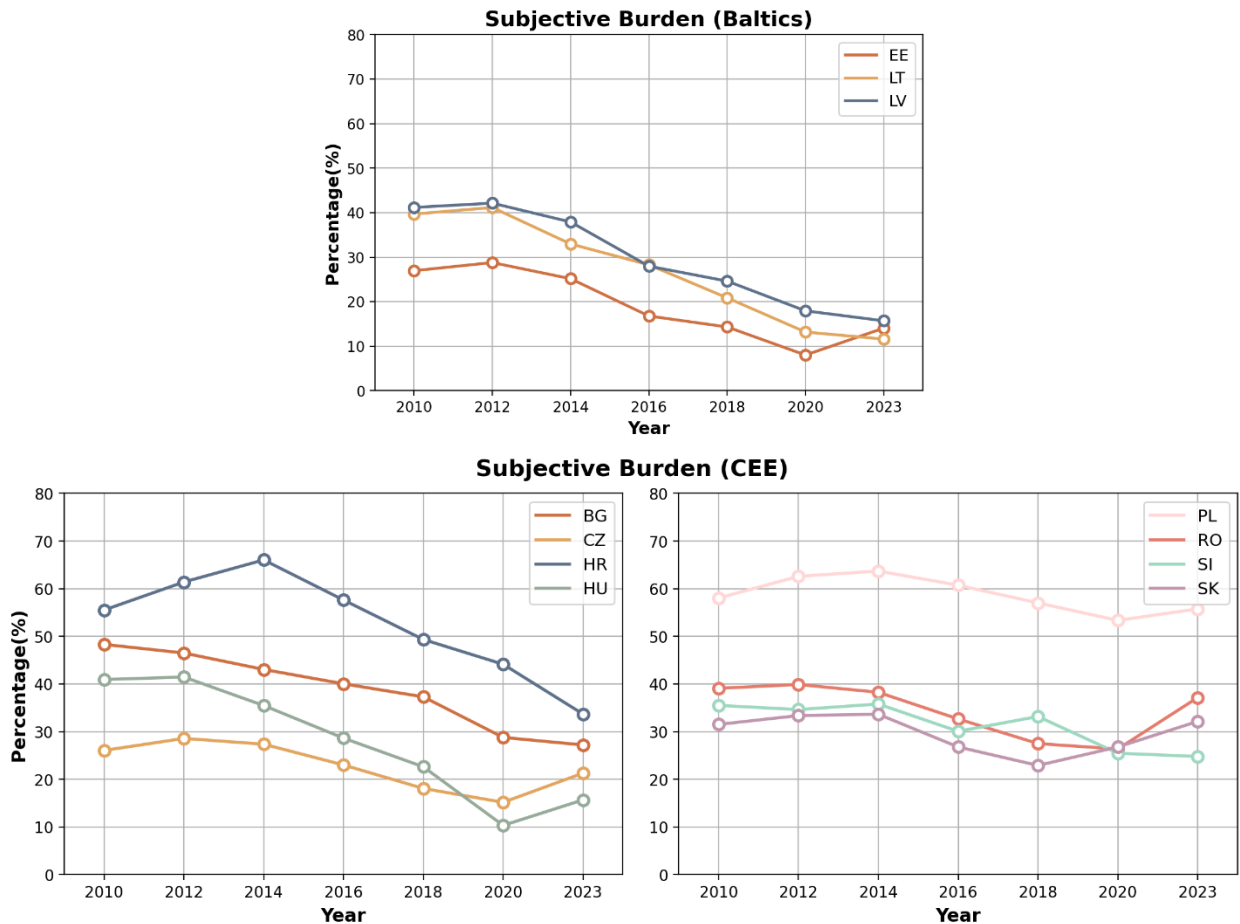


Figure 5.22 Trends in subjective burden rate across Eastern European countries 2010-2023 (%)

Note: CEE refers to Central Eastern Europe.

Figure 23 shows the difference or gap in subjective burden rate between the low- and high-income in Eastern European countries. Similar to the SE countries, subjective burden rate among high-income respondents is relatively large in Eastern Europe, although over time it decreases (even to 0% in 2020 in Hungary). In Latvia, with the more rapid decrease in the burden among low-income respondents, we can observe decreasing gap between the low- and high-income



that increase in 2012 and 2014. Lithuania starts with the lowest gap between the two groups in 2010 (21.0%p) among the Baltic countries and the second lowest if we take into account the CEE countries. After reaching its peak in 2014 (28.5%p) due to rapid decrease in burden among high-income respondents that year, the gap between the two groups decreased and shows the second lowest gap in 2023 (15.3%p) after Estonia. With the exception of slight increase between 2012 and 2014, the gap between the low- and high-income continues to decreased after 2014. Although it goes up slightly in 2023, it still shows the lowest gap in all Eastern European countries. In the CEE, Hungary shows the highest gap between the two income groups. Although it increases in 2012 and 2014 due to relatively large increase between 2010 and 2012 among low-income respondents, the gap decreases over time. Croatia and Poland show high overall subjective burden rate, both for the low- and high-income. However, the gap between the two income groups decreases more in Poland than in Croatia, as the burden remains somewhat stable among high-income respondents group in Poland while it steadily decreases for low-income respondents. While Romania shows the lowest gap in the rate of subjective burden between the two income groups in 2010 in all Eastern Europe, it increases to almost double. In Slovakia, the gap remained somewhat stable except for a decrease between 2014 and 2018, and shows the highest gap between the two income groups in all Eastern Europe. In Bulgaria, the gap remained somewhat stable, but got smaller in 2023 with the rapid decrease in the rate among low-income respondents that is not matched by high-income respondents. In both Czech Republic and Slovenia, the gap fluctuates over time, but both low- and high-income groups experience relatively less subjective housing cost burden compared to other countries.

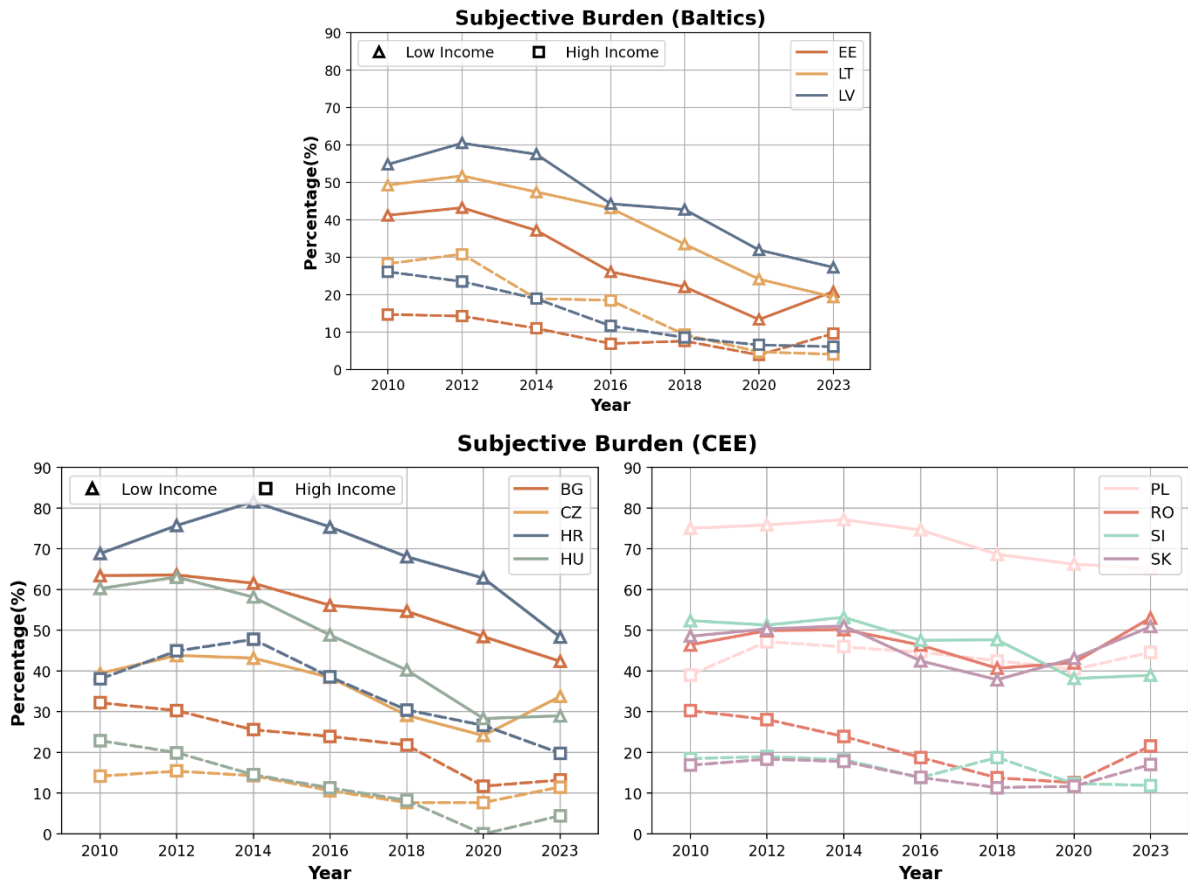


Figure 5.23 Trends in subjective burden rate across Eastern European countries by income 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated.

In most Eastern European countries, subjective burden rate decreased in all tenure statuses when comparing 2010 and 2023 (Figure 24). In Estonia and Lithuania, the largest difference is found among the reduced-rate renters, which decreased by 24.5%p and 44.2%p respectively. Mortgage homeownership shows the largest decrease in Latvia (by 38.4%p), Bulgaria (51.5%p), Czech Republic (10.5%p), Hungary (36.1%p) and Romania (48.0%p). In Slovenia, it is the market-rate renters that show the largest decrease (by 19.1%p). On the contrary, Poland and Slovakia shows somewhat a mixed picture. In Poland, subjective burden is increased by 19.8%p among the mortgage homeowners and by 4.2%p among the



market-rate renters. In Slovakia, it was increased by 3.4%p for market-rate renters and 34.7%p for reduced-rate renters.

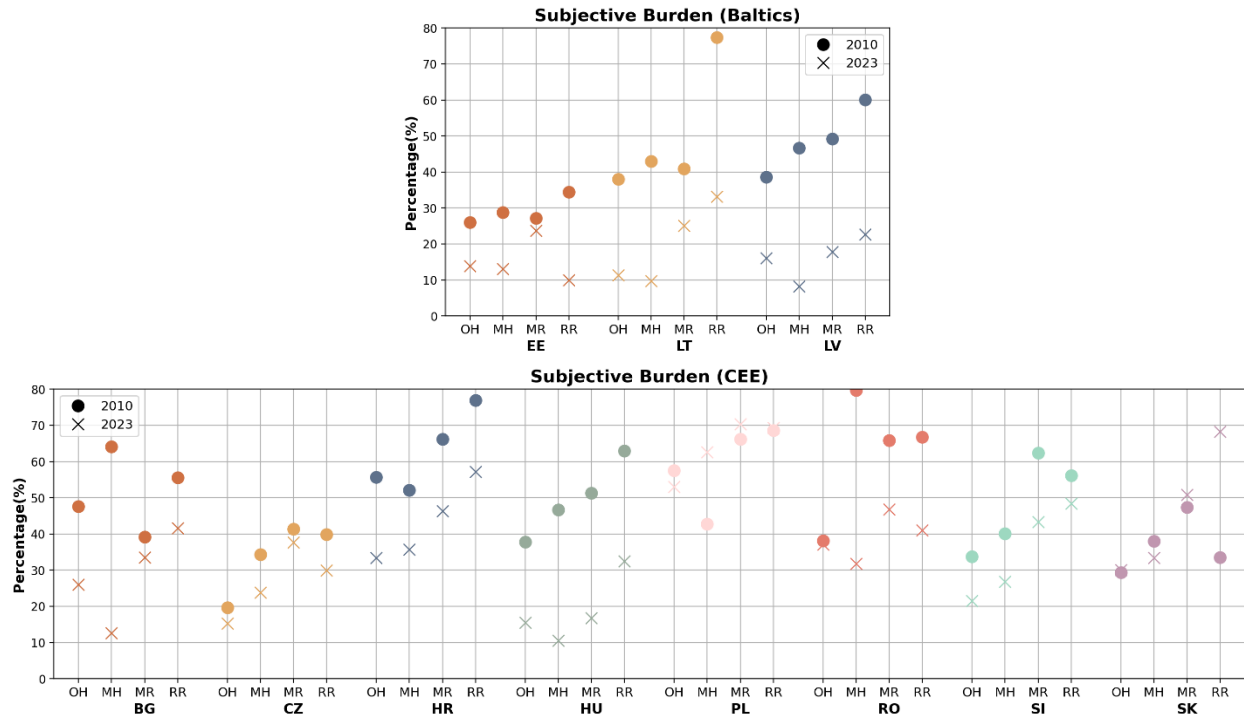


Figure 5.24 Changes in subjective burden rate across Eastern European countries by tenure between 2010 and 2023 (%)

Note: CEE refers to Central Eastern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

5.1.3 Summary

Between 2010 and 2023, disparities in housing cost overburden across Europe increased, with the burden falling disproportionately on low-income households and renters. While some countries with unitary rental markets (e.g. Denmark and the Netherlands) saw an overall decline in overburden rates, Sweden and France (to a lesser extent) experienced an increase. The decreases in Denmark and the Netherlands are driven by the homeowners, particularly mortgage homeowners. The increases observed in Sweden and France are driven by the reduced-rate renters. The Netherlands also experienced an increase in the overburden rate



among reduced-rate renters, but this is not captured in the general trends due to a greater decrease among mortgage homeowners. In NWE homeownership countries with a dual rental market, trends were more volatile in some countries. For instance, in Luxembourg and Norway, sharp increases were observed in recent years, particularly among low-income groups. A closer look at changes in tenure status reveals that the sharp increase is driven by all tenure statuses except outright homeowners in Luxembourg and mortgage homeowners in Norway. Southern and Eastern Europe displayed more dramatic shifts. Greece consistently had the highest overburden rates, particularly among low-income and reduced-rate renters, while Bulgaria saw increases across all tenure statuses. In contrast, many Eastern European countries (e.g., Hungary, Lithuania and Poland) experienced a general decline in the overburden rate, particularly among homeowners. Across all regions, individuals in high-income households remained largely unaffected, with overburden rates typically below 3% (with the exception of Greece). This highlights the growing inequality in housing affordability. The data suggest that the burden of housing costs is intensifying for the most vulnerable populations, particularly low-income respondents and renters, even in countries where overall trends appear stable or improving.

Despite overall stability in some regions, subjective housing cost burden also reveals disparities by income level. Low-income respondents consistently reported higher perceived burdens, particularly in some countries (e.g. France, Luxembourg, Greece, Cyprus, Spain, Italy, Croatia, Bulgaria and Poland). In contrast, social democratic unitary rental market countries (e.g. Denmark, the Netherlands and Sweden), Norway and, more recently, Malta showed the lowest levels and smallest income gaps. Notably, except for the aforementioned countries, even high-income respondents reported relatively high rising burdens in most countries, thereby narrowing the income divide. Examining changes across tenure status reveals a consistent general tendency to increase or decrease across most countries. This indicates that the perceived burden relates to the general housing market or economic situation of a country, albeit with

differences in extent across tenure status. However, in some countries (e.g. Belgium, Finland, Ireland, Portugal, Poland and Slovakia), the burden fell disproportionately on certain tenure statuses. For instance, in Belgium, the burden fell disproportionately on both types of renters, while in Ireland it fell prominently on market renters, in Portugal and Slovakia on reduced-rent tenants, and in Poland on mortgage homeowners. Among countries experiencing an overall increase in subjective burden, reduced-rent tenants were most affected, especially in Austria, Denmark, and Greece. It should also be noted that in Southern and Eastern Europe, subjective burden generally declined across most tenure statuses and income groups, though Greece, Poland, and Slovakia experienced increases in certain groups. Overall, while some progress has been made, the data highlight that housing costs remain a widespread issue, particularly for low-income renters. However, it is evident that the perceived burden of housing costs is not limited to low-income households. Finally, subjective housing cost burden showed inconsistent patterns compared to the objective measure of overburden. This inconsistency reveals the importance of using subjective measures to complement objective measures in order to capture actual experiences of housing affordability that may be overlooked by focusing solely on objective measures, such as the increasing burden among higher-income households and the general economic and housing situation in a country.

5.2 Quality

While there is no clear definition of housing quality, housing deprivation has been widely used to define a poor quality housing. According to the Eurostat definition (Eurostat, n.d.-b), a housing is considered deprived when it has no or low quality facilities, such as a leaking roof, damp walls, floors or foundations, or rot in window frames or floors; no bath or shower; no flushing toilet; or too dark. Housing deprivation rate here is therefore the proportion of individuals living in a



deprived housing in a country. We need to note that there are four questions in EU-SILC that are used for housing deprivation³², but two of them (i.e. questions on shower facilities and toilet) were optional questions in 2023. This means that there may be underestimation of housing deprivation in some countries in 2023 with large missing data, Estonia in particular.

5.2.1 Housing Deprivation

Figure 25 presents trends in housing deprivation rate in unitary rental market countries between 2010 and 2023. While the figure is generally stable over time, a point of divergence between social-democratic countries and conservative-corporatist countries is at the year 2020. In Denmark and Sweden, housing deprivation rate remains somewhat stable between 2012 and 2020, then decreases between 2020 and 2023. While the changes in the Netherlands is less prominent, it also shows a decreasing tendency in the recent years. During the same period, countries in conservative-corporatist countries experience an increase in housing deprivation. This is also the case for Germany where it saw a rapid decline in the deprivation rate between 2018 and 2020. What has led to this divergence in the two regimes in recent years requires further investigation.

³² 1) "Do you have any of the following problems with your dwelling/accommodation? A leaking roof; damp walls/floors/foundations; rot in window frames or floor"; 2) "Is your dwelling too dark, meaning is there not enough daylight coming through the windows?"; 3) "Is there a shower unit or bathtub in your dwelling?"; and 4) "Is there an indoor flushing toilet in your dwelling?"



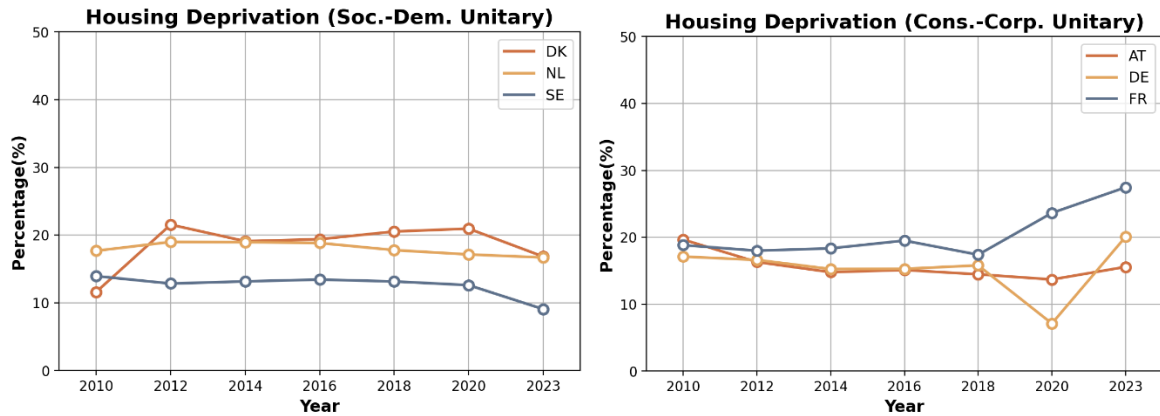


Figure 5.25 Trends in housing deprivation rate across unitary rental market countries 2010-2023 (%)

Note: disconnected line indicates no data available for that year. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries.

The trends in Figure 25 is similarly presented in Figure 26 but among individuals in low-income households. It needs to be noted that overall, the gap between the low- and high-income is not as large as what we observed for affordability above. It indicates that, in unitary rental market countries, housing deprivation rate is generally low for all populations, although there is a notable increase in recent years in France. The smallest gap between the two income groups in 2010 is found in Sweden with 2.7%p. This gap in Sweden increased over time, but still remained the smallest in 2023 with 6.2%p compared to other countries in the same year. The highest gap in both 2010 and 2023 is found in France, with 13.9%p and 19.5%p respectively. This is because, while the deprivation rate increased for both the low- and high-income in France, it increased more rapidly for the former than the latter.



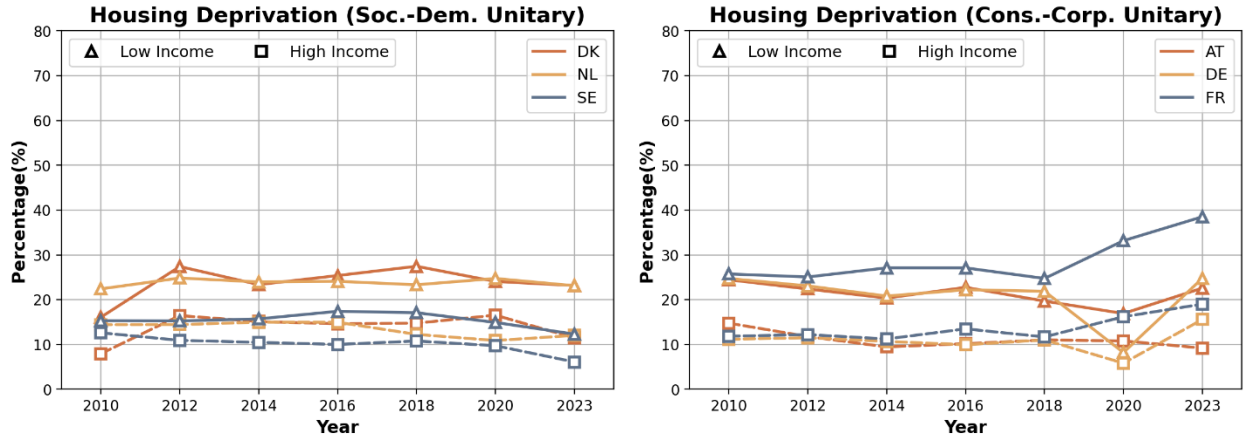


Figure 5.26 Trends in housing deprivation rate across unitary rental market countries by income 2010-2023 (%)

Note: low income refers to the first tertile and high income refers to the third tertile. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries.

Figure 27 demonstrates how these changes occurred for each tenure status between 2010 and 2023. The differences are generally small in social-democratic countries. No clear pattern is observed among the three countries as the deprivation rate increased across all tenure types in Denmark and decreased for all tenure types in Sweden. In the Netherlands, it is the renters who are more likely to experience housing deprivation in 2023 than in 2010, while the opposite is found for homeowners. Austria shows decrease in housing deprivation among the homeowners. This means that the housing quality has improved for the homeowners in Austria in the last decade. In Germany, no substantial difference is noticeable, except for a small increase among homeowners. In France, however, housing deprivation rate has increased for all tenure types, albeit to a lesser extent among outright homeowners. This requires attention, because in the unitary rental market, rental sector is relatively well regulated to guarantee basic level of housing quality, and this opposite pattern found in Denmark and (particularly) France indicates that housing quality is becoming an important issue among the renters in unitary rental market as well.



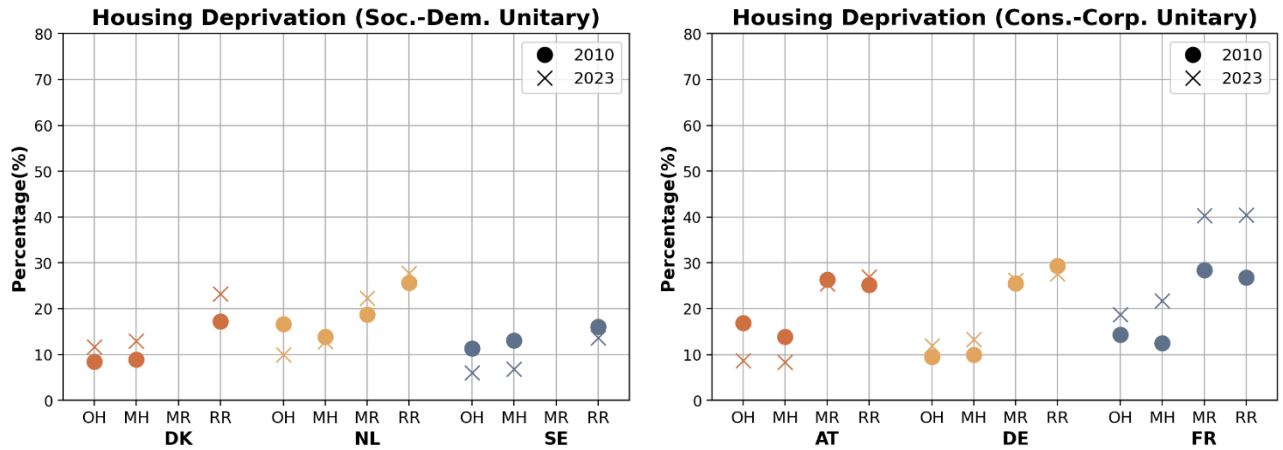


Figure 5.27 Changes in housing deprivation rate across unitary rental market countries by tenure between 2010 and 2023 (%)

Note: Some data are missing including the reduced rent in Denmark in 2010 and reduced-rent in Sweden in 2023. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Given no clear distinction between market rent and reduced rent in the Soc.-dem. unitary rental market countries, where rents are strictly regulated, all tenants are coded as renting at 'reduced rent'. This applies to DK and SE. In the NL, we distinguish the two rental tenures using the 'liberalisatiegrens'. This is a fixed amount that limits the starting rent of social rental housing, as opposed to a prevailing market rent.

Figure 28 shows the changes in housing deprivation rate across North-Western European homeownership countries with dual rental market between 2010 and 2023. In contrast to most countries where the figures remain stable over time, some fluctuations are observed in Luxembourg. In Luxembourg, there is a sharp increase in housing deprivation rate between 2014 and 2016, and gradual decrease over time until a slight increase in the latest wave. Two countries that stand out with a relatively low and stable deprivation rate are Finland and Norway.



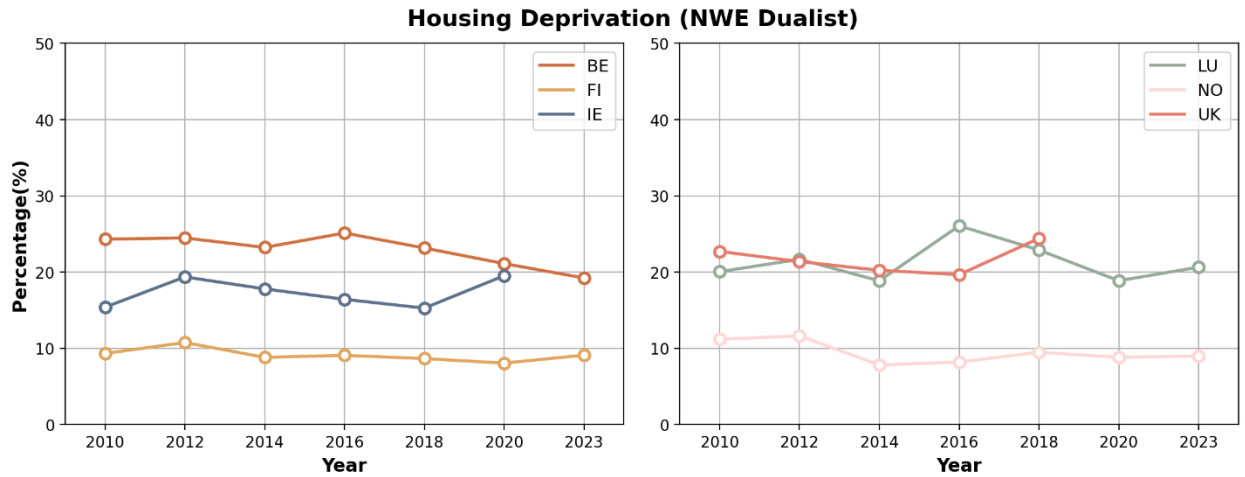


Figure 5.28 Trends in housing deprivation rate across NWE homeownership countries with dual rental market 2010-2023 (%)

Note: disconnected line indicates no data available for that year. NWE refers to North-Western Europe. 2023 data is omitted for IE due to unreliability of the data indicating 0% housing deprivation.

Figure 29 shows the trend examined in Figure 28 by income levels. Although the prevalence differs, the trends for both low- and high-income respondents follow somewhat similar patterns overall. However, closer inspection reveals some discrepancies. Overall, the difference between the low- and high-income remained consistent over time, except for a steady decrease in Belgium after reaching its highest point in 2012 (20.0%p). It is driven by the faster decrease in the deprivation rate among low-income respondents despite the overall decrease among high-income respondents. Belgium, however, shows the highest gap between the two income groups in terms of housing deprivation in 2010 and remains one of the highest in 2023 among the NWE dual rental market countries. In Ireland, the difference between the two income groups fluctuates more than other countries. Although it starts with one of the lowest gap with 8.1%p in 2010, the gap is the highest in 2020 (13.4%). Finland shows the lowest gap in all years, followed by Norway.



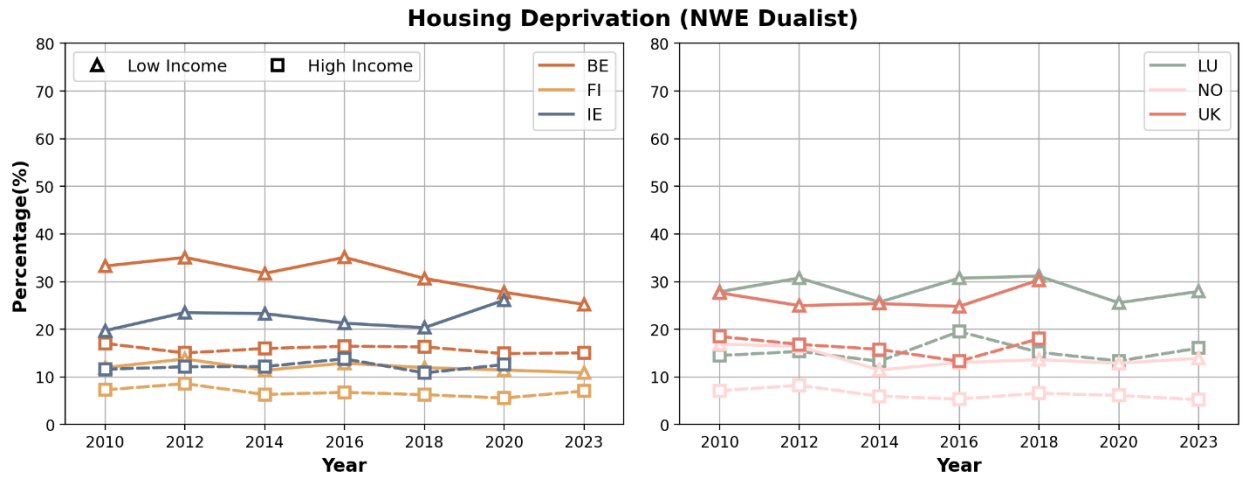


Figure 5.29 Trends in housing deprivation rate across NWE homeownership countries with dual rental market by income 2010-2023 (%)

Note: disconnected line indicates no data available for that year. NWE refers to North-Western Europe. 2023 data is omitted for IE due to unreliability of the data indicating 0% housing deprivation

Figure 30 demonstrates the changes in housing deprivation rate across tenure status between 2010 and 2023 in the NWE dual rental market countries. In Belgium, there is a decrease in housing deprivation in all tenure statuses. The largest decrease is found among the market-rate renters with 7.3%p in Belgium. In Luxembourg, while housing deprivation rate has decreased in most tenure statuses, it increased among the mortgage homeowners by 6.0%p. In Finland and Norway, the changes are generally minimal, with the exception of an increase among the reduced-rate renters in Norway by 19.4%p. It indicates that while the housing deprivation remains generally low in Norway, it is the tenants in reduced-rate rental housing that experience more housing deprivation in 2023 compared to 2010.



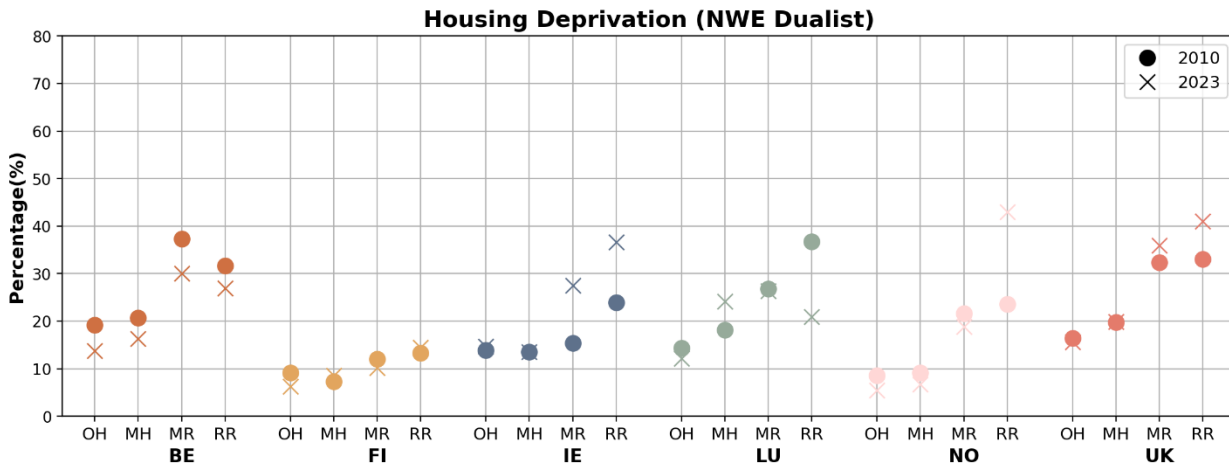


Figure 5.30 Changes in housing deprivation rate across NWE homeownership countries with dual rental market by tenure between 2010 and 2023 (%)

Note: in the UK the latest data is from 2018 and Ireland 2020, instead of 2023. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. In the UK, as of 2017, housing associations are labelled as private rather than social housing providers, leading to a break in the data lines.

Figure 31 shows the trend in housing deprivation among the Southern European countries between 2010 and 2023. Malta and Greece show relatively low deprivation rate and a stable trend with minor fluctuations. However, other countries show a high level of fluctuations in their housing deprivation rate. In Cyprus, it decreased until 2014 then increases again until 2020 and sharply decreases between 2020 and 2023. Portugal shows somewhat an opposite trend, as it increased until 2014 and decreased between 2014 and 2020, which then increased again between 2020 and 2023. In Italy, it increased until 2014, rather sharply decreased between 2014 and 2018, increased again between 2018 and 2020 then decreased again between 2020 and 2023. In Spain, it declines sharply between 2010 and 2012 and shows an overall increasing tendency.



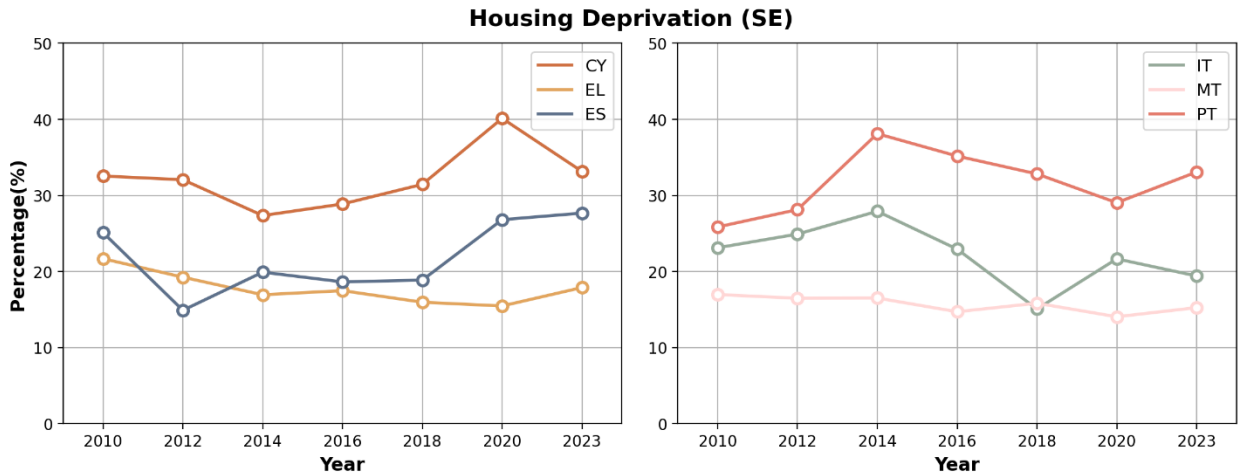


Figure 5.31 Trends in housing deprivation rate across SE family-based homeownership countries 2010-2023 (%)

Note: SE refers to Southern Europe.

Housing deprivation is a more prevalent issue among low-income respondents than high-income respondents in SE family-based homeownership countries (see Figure 32). Despite some fluctuations, certain gap between the two income groups has persisted over time in all countries. After some fluctuations, the gap is enlarged in Cyprus (from 15.4%p in 2010 to 16.6%p in 2023), Greece (from 16.3%p in 2020 to 16.3%p in 2023), Spain (from 13.7%p in 2010 to 15.5%p in 2023) and Portugal (from 14.7%p in 2010 to 18.2%p in 2023). On the contrary, the gap decreased in Italy and Malta. What needs to be noted is that in Italy this change is relatively gradual, while in Malta the gap increased until 2016 and decreases rapidly afterwards. This is mainly driven by the decline in housing deprivation among high-income respondents until 2016, which increased afterwards, while it remains somewhat consistent over time for low-income respondents until 2018 and decreased



afterwards. Malta shows the lowest gap between the two income groups in both 2010 and 2023, while Greece shows the highest gap in 2010 and Portugal in 2023.

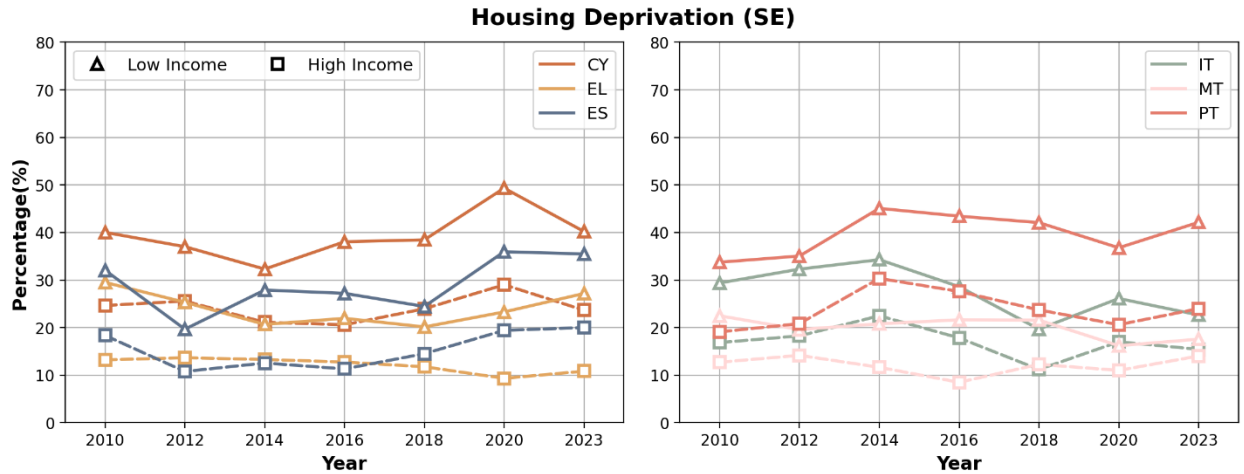


Figure 5.32 Trends in housing deprivation rate across SE family-based homeownership countries by income 2010-2023 (%)

Note: SE refers to Southern Europe.

Figure 33 demonstrates no clear pattern when it comes to changes in housing deprivation rate across tenure status in SE family-based homeownership countries. In Cyprus, it increased for the mortgage homeowners (6.8%p) and market-rate renters (5.3%p) and decreased for reduced-rate renters (4.9%p). Notable changes are found among outright homeowners in Greece (decreasing by 8.2%p), market-rate renters in Spain (increasing by 8.8%p) and Italy (decreasing by 7.2%p), and reduced-rate renters in Malta (decreasing by 14.1%p). In Portugal, all tenure statuses has experienced an increase in housing deprivation rate between 2010 and 2023.



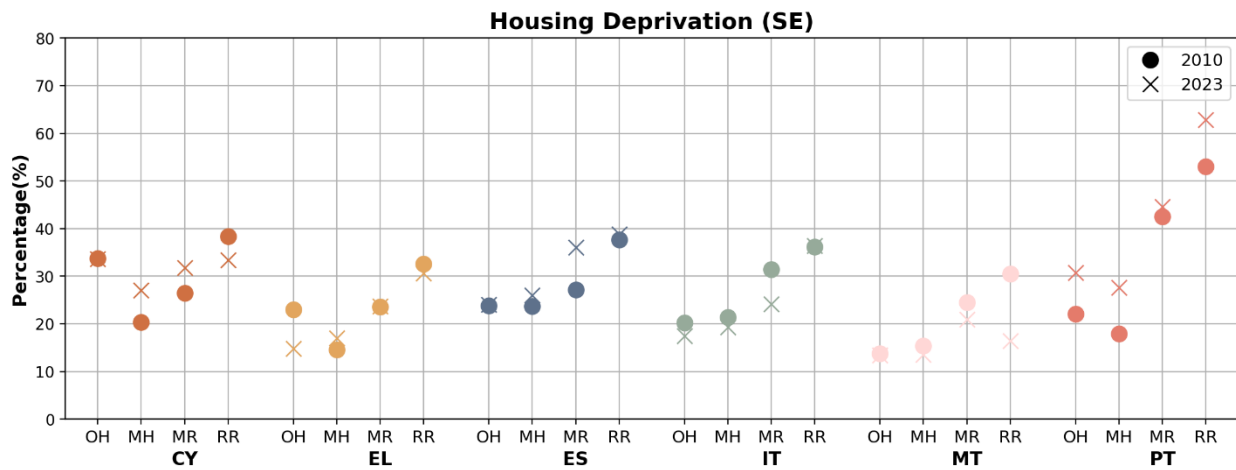


Figure 5.33 Changes in housing deprivation rate across SE family-based homeownership countries by tenure between 2010 and 2023 (%)

Note: SE refers to Southern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

Figure 34 shows the trends in housing deprivation rate across Eastern European countries between 2010 and 2023. Overall, all countries show a declining tendency of housing deprivation, even with some stagnation in some years. Four countries stand out in the figure below for showing some fluctuations over time. First, there is a steady decline in housing deprivation rate between 2010 and 2020 in Czech Republic which has increased slightly between 2020 and 2023. Second, Slovakia shows relatively low housing deprivation rate over time. Third, there is a relatively sharp decline in housing deprivation between 2018 and 2020 in Poland which has slightly increased between 2020 and 2023. Fourth, a slight increase in the end is also evident in Latvia, which has one of the highest



rates of housing deprivation among Eastern European countries, despite a decline over time.

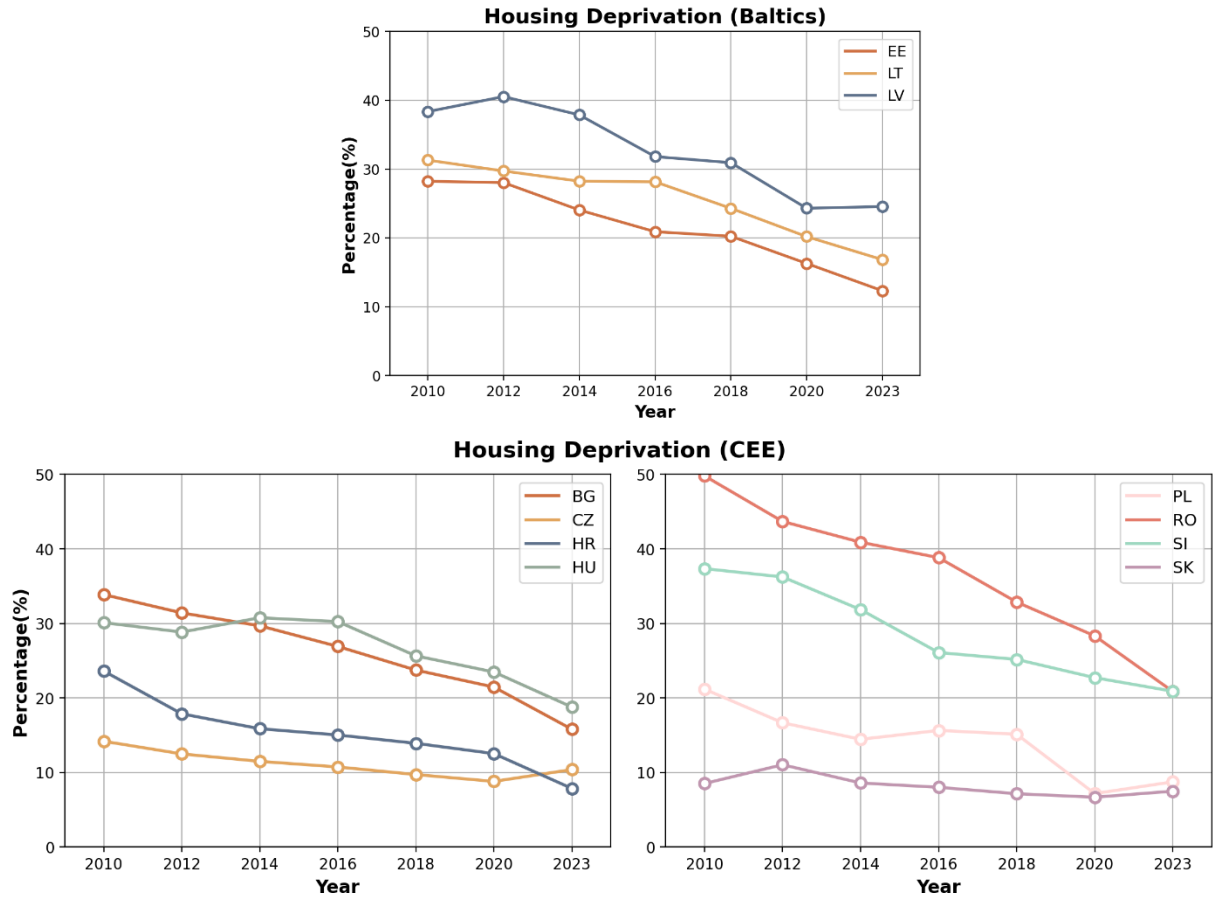


Figure 5.34 Trends in housing deprivation rate across Eastern European countries 2010-2023 (%)

Note: CEE refers to Central Eastern Europe.

Figure 35 shows a relatively high gaps in housing deprivation rate between low- and high-income groups compared to the other countries examined above, while the gap in all observed countries closes over time. This is driven by the more rapid decline in housing deprivation rate among low-income respondents in most countries compared to the more stable and low rates found among high-income respondents. This is especially the case in all Baltic countries, Bulgaria, Croatia, Hungary and Romania. In particular, roughly 77% of low-income



respondents experienced housing deprivation in Romania in 2010, but it decreased to roughly 41% in 2023. Although to a lesser extent, this pattern is also found in Czech Republic, Slovakia, and Slovenia. In Poland, there is a sharp decline between 2018 and 2020 for both low- and high-income respondents, but between 2020 and 2023, housing deprivation only declined for low-income respondents and increased for high-income respondents, albeit slightly.

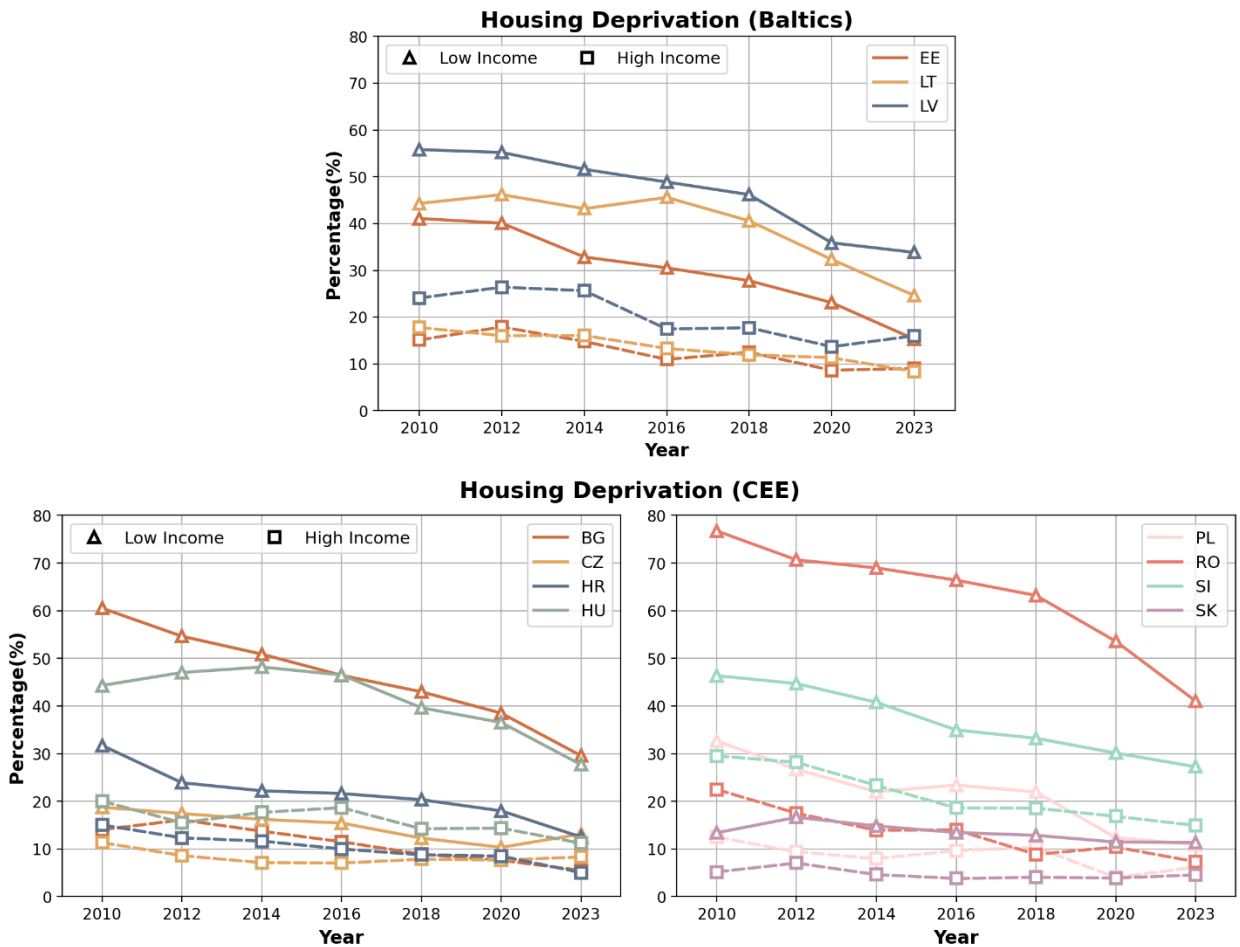


Figure 5.35 Trends in housing deprivation rate across Eastern European countries by income 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated.

Housing deprivation rate decreased for all tenure statuses in most countries, albeit to varying degrees. In Estonia, Latvia and Poland, the changes are significant for all tenure statuses except for a relatively small change for the



mortgage homeowners. It is also the case for Croatia and Hungary, although the decline is relatively small for both types of homeowners. In Romania, larger changes occurred compared to other countries, especially among the mortgage homeowners (decreasing by 43.0%p). Housing deprivation rate among mortgage homeowners is 43.3% in 2010, but falls to 0.3% in 2023. Decrease in all tenure is also found for Slovenia. Rest of the countries show somewhat mixed patterns. In Lithuania, relatively large decrease in housing deprivation occurred among the outright homeowners and reduced-rate renters, but it increased slightly for the mortgage homeowners and market-rate renters. In Czech Republic, the decrease is mainly prominent among the market-rate renters, while reduced-rate renters experience a slight increase in housing deprivation. In Slovakia, there is a large increase in housing deprivation rate among the reduced-rate renters (by 27.5%p), which contrasts with all the other cases in Eastern Europe.

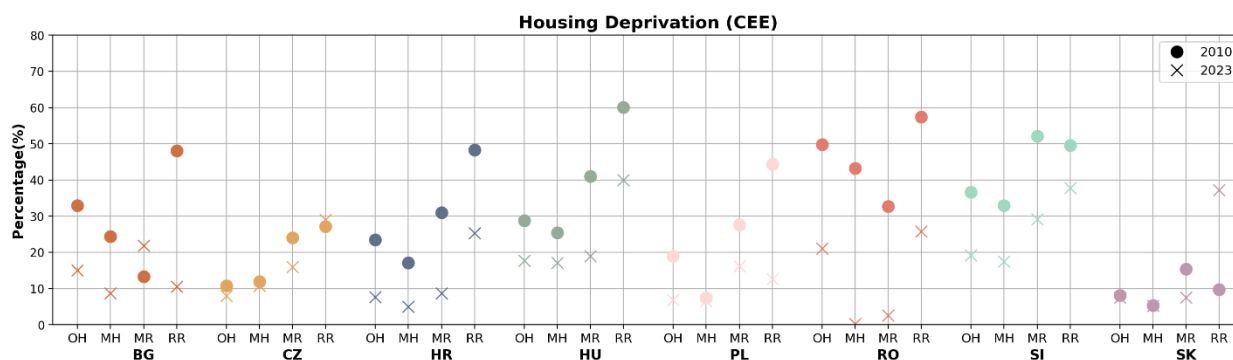


Figure 5.36 Changes in housing deprivation rate across Eastern European countries by tenure between 2010 and 2023 (%)

Note: CEE refers to Central Eastern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

5.2.2 Summary

Housing deprivation across Europe has converged somewhat between 2010 and 2023, with housing quality generally improving in Eastern European countries and deteriorating in some countries in North West of Europe. In unitary rental market countries, deprivation rates were relatively low overall. However, recent increases, particularly in France and Germany, highlight emerging



concerns about housing quality in conservative-corporatise unitary rental market countries, as opposed to the social-democratic unitary rental market countries. France experienced a significant increase in the housing deprivation rate across all tenure statuses, with the least increase among outright homeowners. In North-Western Europe, Belgium has made gradual progress, while countries such as Luxembourg, Ireland and the UK have seen an increase in the housing deprivation rate in the recent years. The progress in Belgium was somewhat evenly distributed across tenure statuses, while the worsening of housing quality in Ireland and the UK affected renters more than homeowners. In Luxembourg, the situation improved for reduced-rate renters but worsened for mortgage homeowners. While there was a significant improvement in housing quality in Eastern Europe, Southern European countries displayed fluctuating trends. Malta and Greece were the exceptions, as they did not experience major changes over time. Portugal, which exhibited the highest level of housing deprivation, experienced a general decline in housing quality across tenure statuses, with the least decline affecting market-rate renters. In Cyprus, which had the second highest level of housing deprivation, the situation worsened for mortgage homeowners and market-rate renters. Among Eastern European countries, Slovakia was an outlier, as housing quality worsened significantly for reduced-rate renters, while improving in all other countries. Overall, changes in housing deprivation were primarily driven by individuals in low-income households, who were the most heavily affected. However, a certain level of housing deprivation persisted among individuals of high-income households in all countries, and the income gap narrowed in many countries due to faster improvement experienced by low-income individuals.

5.3 Overcrowding

This section examines the changes in overcrowding rate across countries between 2010-2023. According to Eurostat, a house is overcrowded when when a “household does not have at its disposal a minimum number of rooms equal to: 1)



one room for the household; 2) one room per couple in the household; 3) one room for each single person aged 18 or more; 4) one room per pair of single people of the same gender between 12 and 17 years of age; 5) one room for each single person between 12 and 17 years of age and not included in the previous category; or 6) one room per pair of children under 12 years of age” (Eurostat, n.d.-a). It has been a key feature of Southern and Eastern Europe given their intergenerational family support culture that coincided with housing unaffordability. As can be predicted, Figure 37 shows that the countries with the unitary rental market and dual rental market tend to show low overcrowding rate even over time. Except for some years in Sweden and in Austria, overcrowding rate in all of these countries have stayed below 10%, albeit with minor fluctuations. No clear intra-regime variations are visible in these regimes, except for the slight increasing tendency over time.

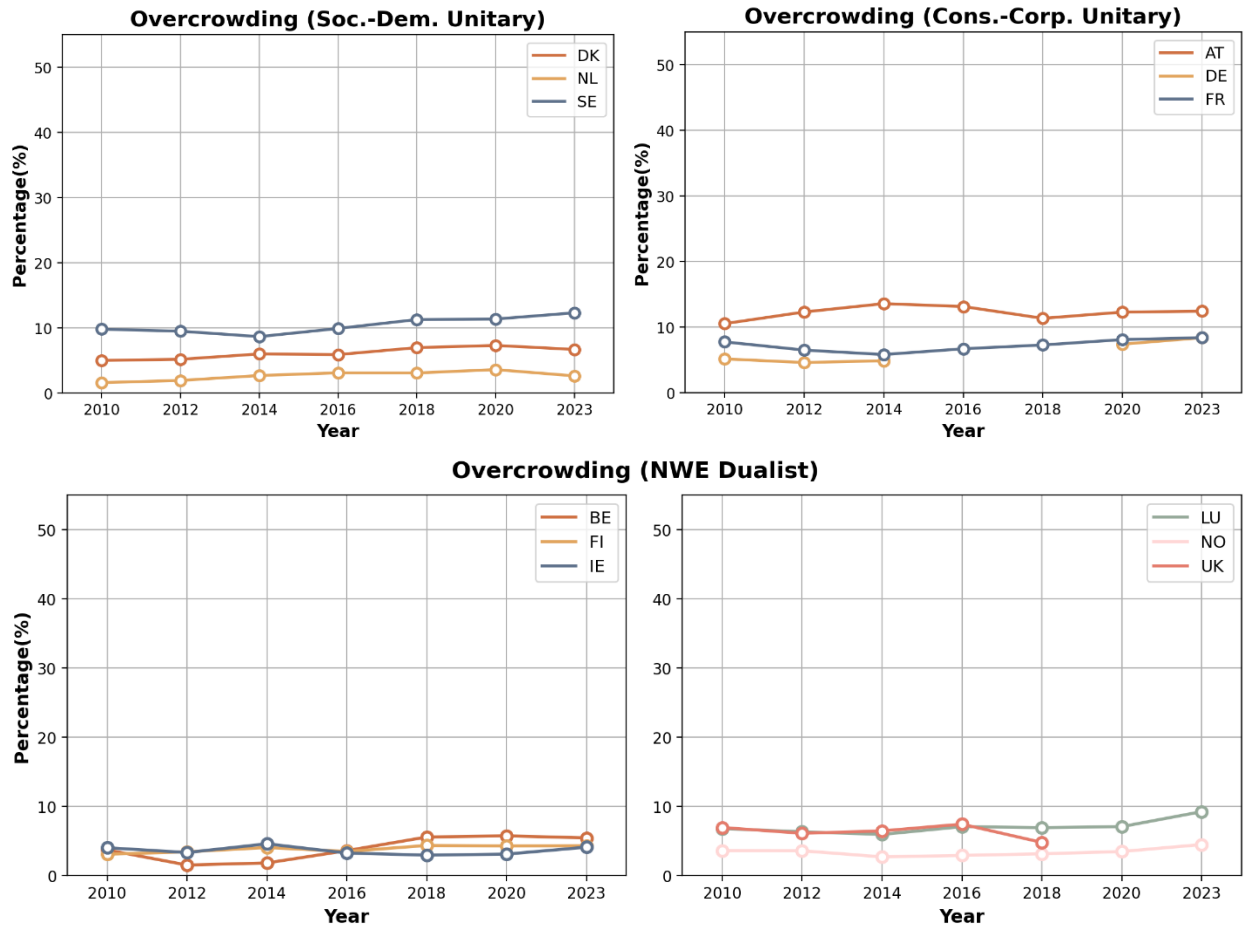


Figure 5.37 Trends in overcrowding rate across unitary and dual rental market countries 2010-2023 (%)

Note: disconnected line indicates no data available for that year. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe

Overcrowding rate is especially low for high-income respondents in these countries, indicating that overcrowding is more of a problem for low-income respondents albeit less prevalent in these countries (see Figure 38). However, it is still relatively higher for high-income respondents in unitary rental market countries than the dual rental market countries. For instance, while the highest rate found in dual rental market regime is 2.8% in the UK in 2014, it is 5.3% in Austria (unitary rental market) in 2014. Among the dual rental market countries,



the UK can also be considered an outlier due to its relatively high share of high-income respondents experiencing overcrowding. In most countries, the overcrowding rate among high-income respondents is relatively stable over time, in contrast to the increasing tendency among low-income respondents. The gap between the low- and high-income in most countries increased when comparing the gap between 2010 and 2023. The two exceptions are Ireland and the UK. In Ireland, the gap decreases over time due to a bigger increase among high-income respondents compared to low-income respondents, while in the UK it is driven by the steeper decline among low-income respondents compared to high-income respondents. The gap is the smallest in the Netherlands with 0.4% in 2010 and 3.8% in 2023, although it increased between these two time points and decreased again, which is driven by the relatively lower overcrowding rate among low-income respondents.



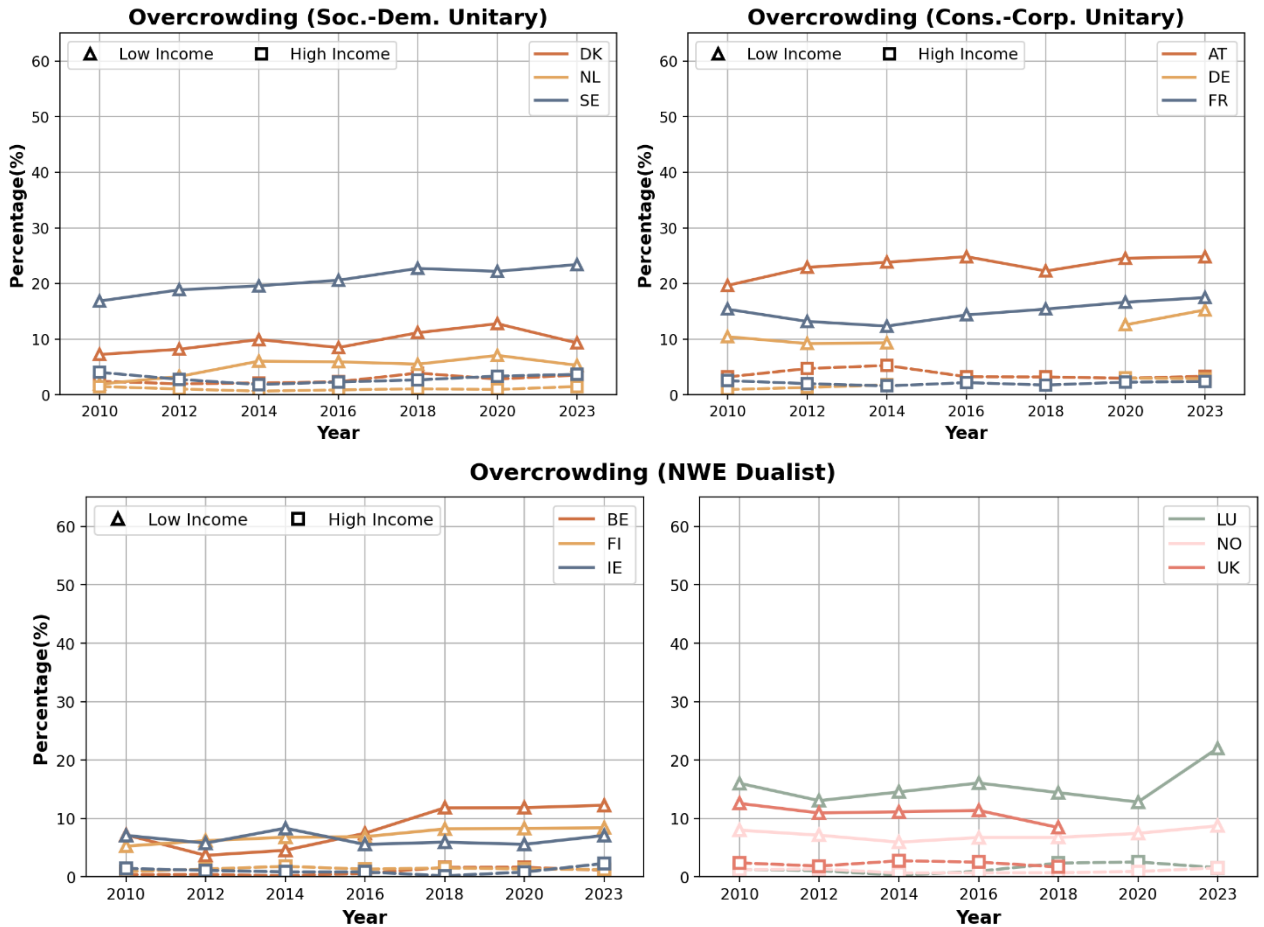


Figure 5.38 Trends in overcrowding rate across unitary and dual rental market countries by income 2010-2023 (%)

Note: low income refers to the first tertile and high income refers to the third tertile. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe.

What is notable is that the overall increase in overcrowding, albeit small, is mainly driven by the renters in all countries (see Figure 39). We see a notable increase among the market renters in Germany, Belgium, Finland; among the reduced-rate renters in Denmark, Sweden, Austria, Germany, France and Luxembourg. However, the UK and Norway also shows a somewhat different pattern, as the overcrowding decreases especially among the renters (by 6.2%p among market-rate renters in the UK, 14.0%p among reduced-rate renters in



Norway). The Netherlands and Ireland show a mixed patterns. In the Netherlands, overcrowding rate increased across tenure status, except for market-rate renters which decreased by 3.8%p. In Ireland, while it increased among mortgage homeowners and market-rate renters, it decreased for outright homeowners and reduced-rate renters.



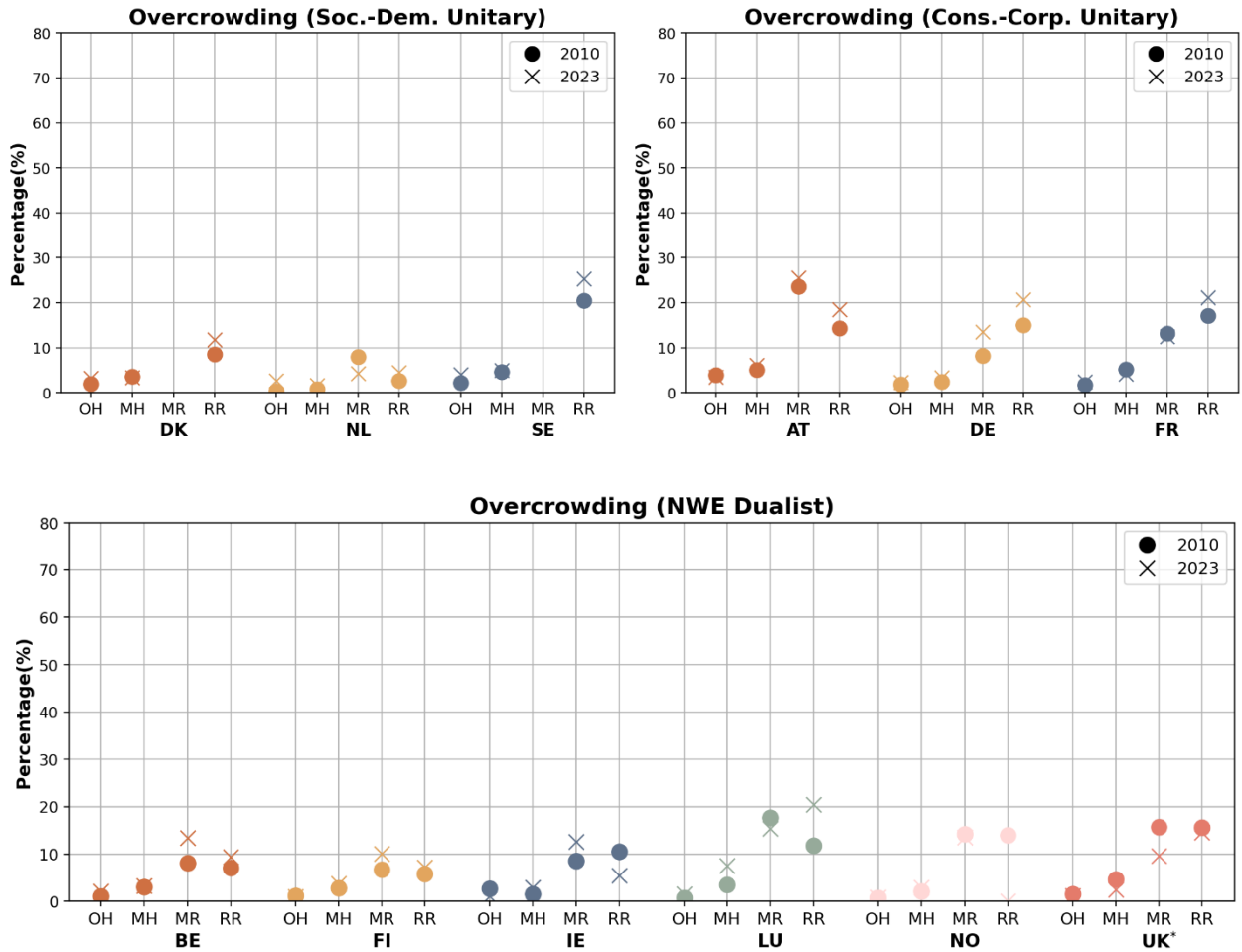


Figure 5.39 Changes in overcrowding rate across unitary and dual rental market countries by tenure between 2010 and 2023 (%)

Note: Some data are missing including the reduced rent in Denmark in 2010 and reduced-rent in Sweden in 2023. In the UK, the latest data is 2018. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Given no clear distinction between market rent and reduced rent in the Soc.-dem. unitary rental market countries, where rents are strictly regulated, all tenants are coded as 'renting at reduced rent'. This applies to DK and SE. In the NL, we distinguish the two rental tenures using the 'liberalisatiegrens'. This is a fixed amount that limits the starting rent of social rental housing, as opposed to a prevailing market rent. In the UK, as of 2017, housing associations are labelled as private rather than social housing providers, leading to a break in the data lines.

Figure 40 demonstrates two diverging patterns when it comes to Southern European family-based homeownership countries, which are considered to show a high share of overcrowding. Greece and Italy form a group with relatively higher overcrowding rate that is persistent over time, between 20-30%. Spain, Malta and Cyprus also show a relatively stable trend over time, but show relatively lower overcrowding rate, between 0-10%. Spain and Malta somewhat diverge from



Cyprus when it comes to recent years as overcrowding rate increases between 2018-2020, although in Malta it decreases again between 2020 and 2023. Portugal is closer to the second group considering its relatively low overcrowding rate over time around 10%, but shows a distinct trend with a decrease between 2010 and 2012 and an increase between 2020 and 2023.

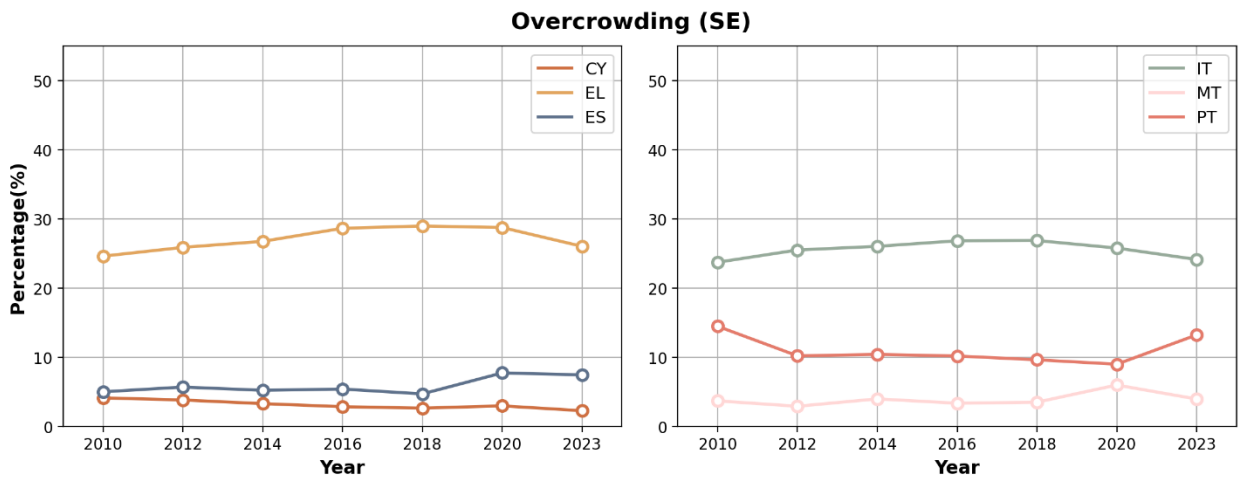


Figure 5.40 Trends in overcrowding rate across SE family-based homeownership countries 2010-2023 (%)

Note: SE refers to Southern Europe.

The two countries with relatively high overcrowding rate overall (Greece and Italy) show high overcrowding rates for both the low- and high-income (see Figure 41). Nearly 20% of high-income respondents in Greece experience overcrowding, which is higher than what low-income respondents experience in Cyprus and Spain. It is also similar for Italy. Moreover, although the share of overcrowding among high-income respondents is relatively high, the share among low-income respondents is particularly high in these countries, leading to the gap between the low- and high-income to be the largest among Southern Europe. In Cyprus, Spain and Malta, the gap between the low- and high-income are generally low, due to relatively low overcrowding rate among low-income respondents. However, in Spain, there has been some increase in the gap (although with some fluctuations) as the overcrowding rate increased for low-



income respondents faster than its increase among high-income respondents. In Portugal, the gap is somewhat stable at around 13 %p, but the increase in overcrowding rate among low-income respondents between 2020 and 2023, in contrast to a minimal increase among high-income respondents during that period, has led to a greater gap between the two income groups.

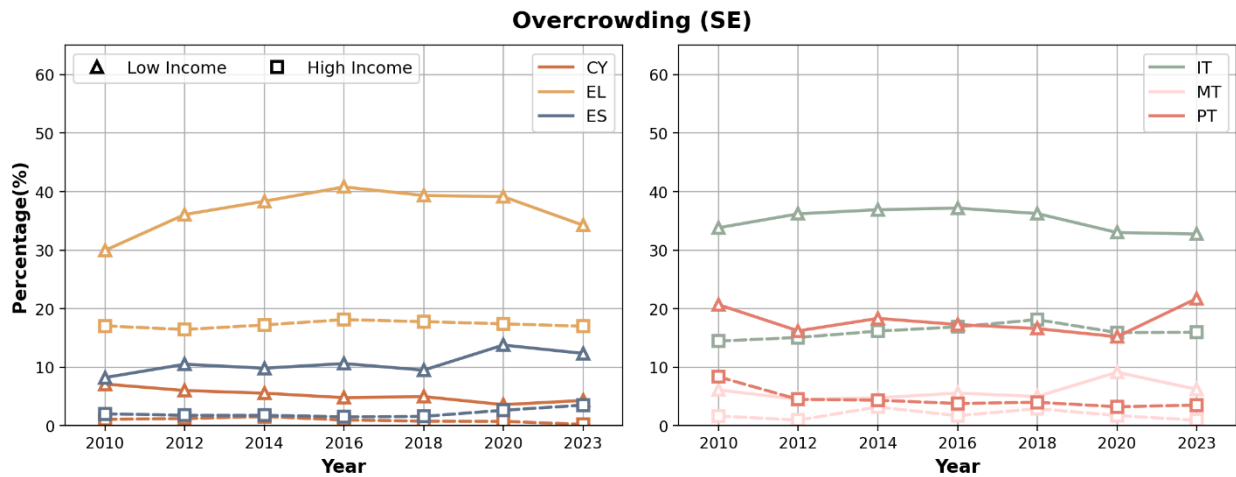


Figure 5.41 Trends in overcrowding rate across SE family-based homeownership countries by income 2010-2023 (%)

Note: SE refers to Southern Europe.

Patterns diverge when we look at the changes across tenure status in these countries (Figure 42). Overcrowding increased for mortgage homeowners for both Greece and Italy, but while it increased for all types of renters in Italy, it did not increase for renters in Greece. Instead, there is a substantial decrease in overcrowding among the reduced-rate renters (10.1%p) and to a smaller extent among the market-rate renters (1.1%p). In Spain, overcrowding increased for all tenure statuses, but more prominently for reduced-rate renters (by 5.0%p). Moreover, while the changes occurred for renters in both Malta and Portugal, they showed opposite patterns. In Malta, overcrowding increased among the market-rate renters (8.4%p) and decreased among the reduced-rate renters

(4.0%p). On the contrary, in Portugal, it decreased among the market-rate renters (4.9%p) and increased among the reduced-rate renters (18.0%p).

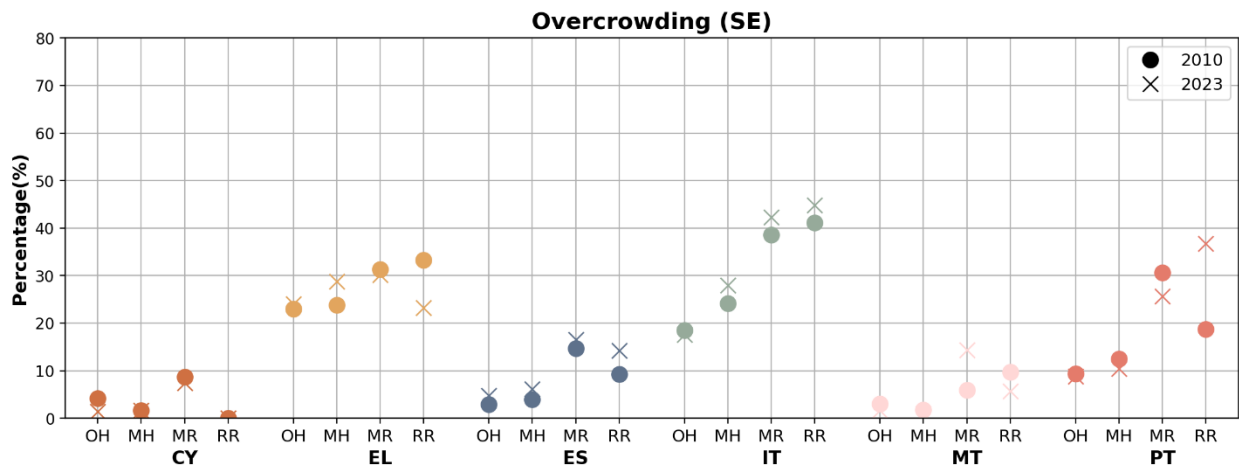


Figure 5.42 Changes in overcrowding rate across SE family-based homeownership countries by tenure between 2010 and 2023 (%)

Note: SE refers to Southern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

In line with the literature, Eastern European countries tend to show higher overcrowding rate than other countries, albeit with cross-national differences (Figure 43). Two major patterns can be observed among the Eastern European countries. Baltic countries show somewhat a similar pattern with a sharp decline in overcrowding between 2010 and 2012, and maintained it at similar rate over time, with the exception of a rather sharp increase between 2012 and 2014 in Lithuania. Among the CEE, Slovenia shows similar pattern as these countries. It needs to be noted that while these countries share overall tendency, they vary significantly in terms of the ‘stable’ overcrowding rate. For instance, it is between 30-40% for Latvia, while it is between 10-20% in Estonia. Thus, despite the sharp



decline in early 2010s, Latvia still shows a relatively high overcrowding rate. Another pattern is a more gradual declining trend found in Romania, Bulgaria, Croatia, Poland, Slovakia and Czech Republic. It needs to be noted that while most of these countries show relatively high overcrowding rate, Czech Republic shows a relatively low rate. One outlier in Eastern Europe is Hungary, which starts similar to most of the other CEE countries, then experiences a sharp decline in overcrowding rate between 2016 and 2018.

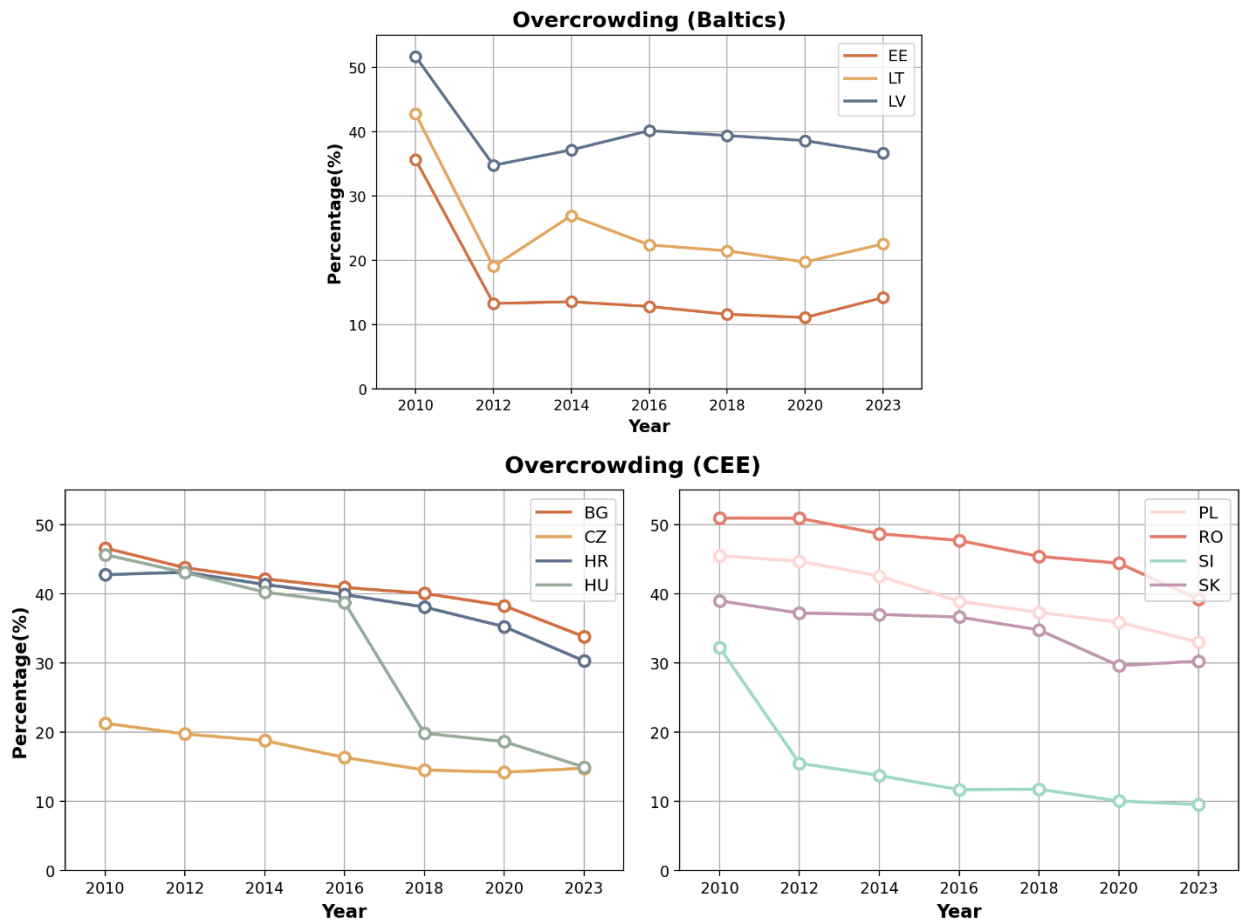


Figure 5.43 Trends in overcrowding rate across Eastern European countries 2010-2023 (%)

Note: CEE refers to Central Eastern Europe.



The two patterns discerned in Figure 43 becomes somewhat blurred when we examine its differences across income groups (see Figure 44). What is notable is that overcrowding is also a prevalent issue among high-income respondents, although to a lesser extent than low-income respondents. Overcrowding rate in Latvia among high-income respondents is higher than the overall overcrowding rate among low-income respondents in the other Baltic countries. The gap between the two income groups decreases over time in this country even to the extent that the overcrowding rate is higher among high-income respondents (although by 0.1%p), driven by the increase in overcrowding rate among high-income respondents after the ‘sharp decline’ between 2010 and 2012. The gap increases again as the overcrowding rate decreases among high-income respondents between 2020 and 2023. In Lithuania, the gap fluctuates over time, but decreases to 0.8%p in 2023. In Estonia, the gap between the two income groups decreased until it reached 3.7%p in 2018, but increased again afterwards. In Slovenia, a CEE country that showed similar ‘sharp decline’ in early 2010s, shows gradual decrease in overcrowding rate for both low- and high-income respondents. However, as it decreases faster for low-income respondents, the gap between the two decreases over time. Bulgaria is a unique case where the difference between the two income groups are small in all years observed, albeit with some fluctuations. Figure below demonstrates that overcrowding rate is high for both low- and high-income respondents in Bulgaria. The high share of overcrowding among high-income respondents is also the case in Croatia, Hungary, Poland, Romania and Slovakia, but the gap between the two income groups is large when compared to Bulgaria. Hungary especially maintains a relatively high gap over time. Although the overcrowding rate is relatively lower in Czech republic, the gap between the income groups remains persistent over time as the low overcrowding rate among high-income respondents is maintained. It shows a somewhat similar pattern as Slovenia except for the sharp decline in the beginning in Slovenia and increased overcrowding among low-income respondents between 2020 and 2023 in Czech Republic.



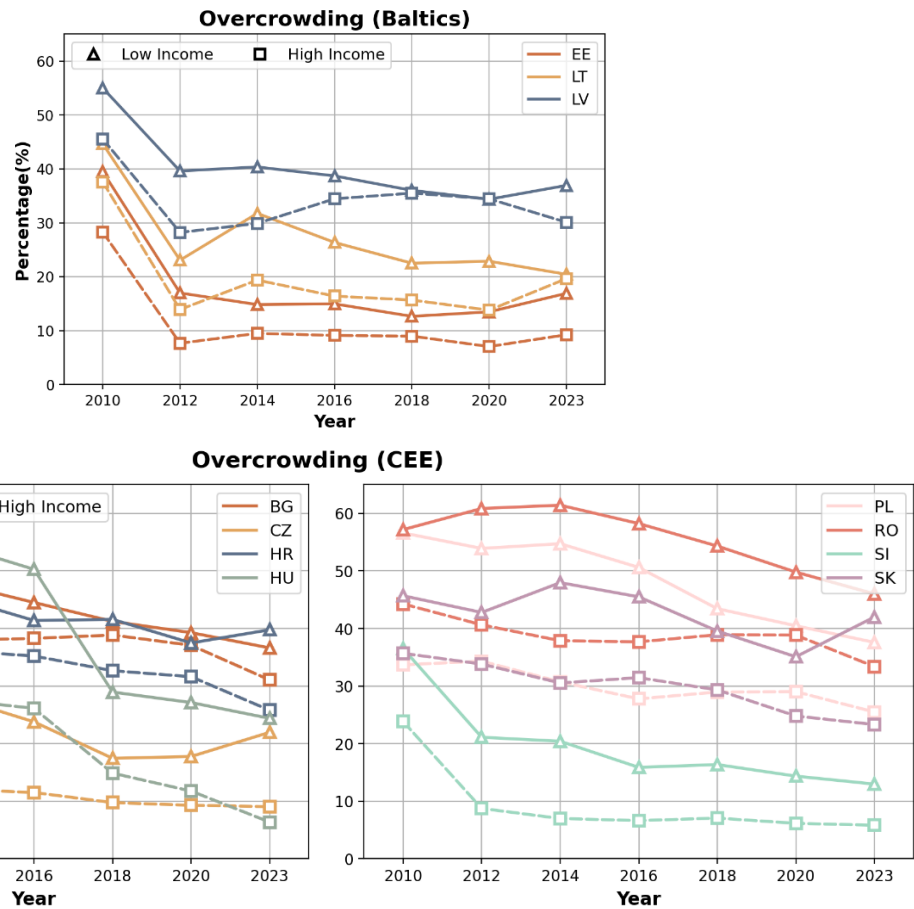


Figure 5.44 Trends in overcrowding rate across Eastern European countries by income 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated.

Overall, overcrowding decreased in all tenure statuses across Eastern Europe (Figure 45). The only exception is an increase in overcrowding among the reduced-rate renters in Slovakia (5.4%p). The decrease is somewhat evenly distributed across tenure status in Estonia, Lithuania, Bulgaria, Hungary, Croatia, and Slovenia. In Latvia, the decrease is less prominent among the market and reduced-rate renters, and in Poland, it is less prominent among the mortgage homeowners and market-rate renters. In Romania, there is almost no change



among the mortgage homeowners, but a large change among the market-rate renters (33.5%p).

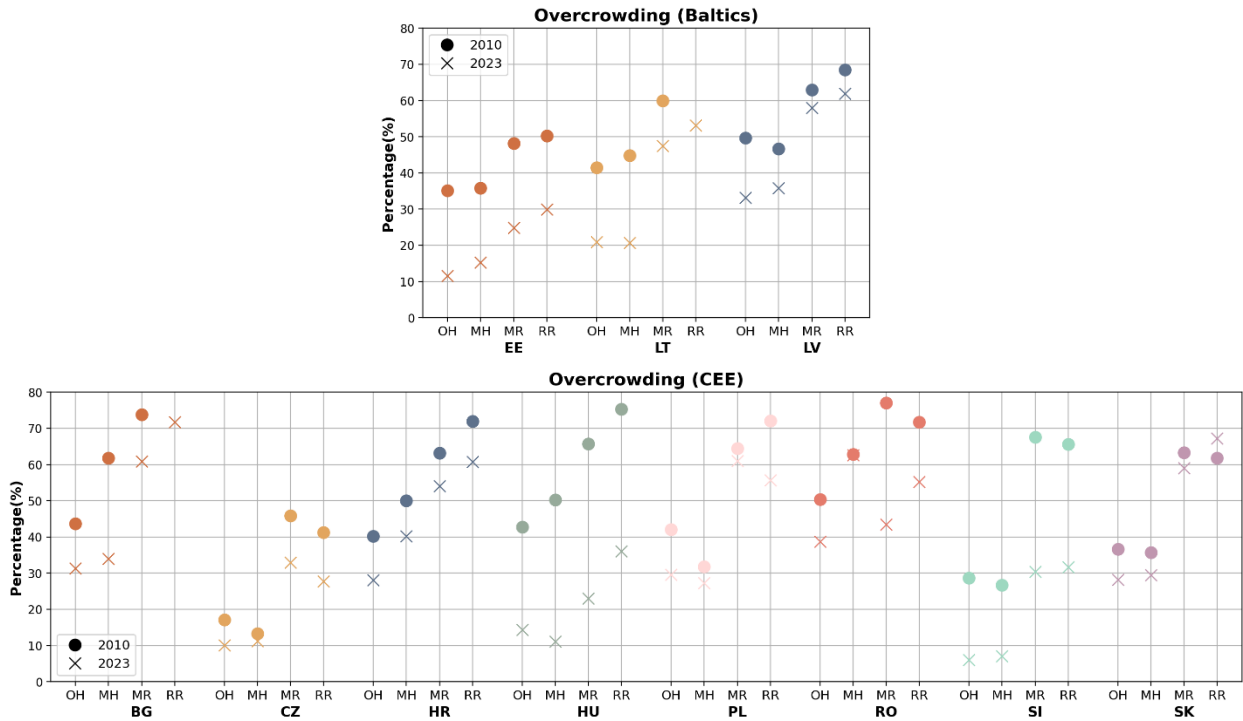


Figure 5.45 Changes in overcrowding rate across Eastern European countries by tenure between 2010 and 2023 (%)

Note: CEE refers to Central Eastern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Few data points in 2010 are not visible in this figure due to high numbers. Reduced-rent in Lithuania in 2010 is 82.74% and reduced-rent in Bulgaria in 2010 is 86.55%.

5.3.1 Summary

Between 2010 and 2023, overcrowding remained a persistent housing issue in Europe, particularly affecting low-income households and renters. However, patterns varied by region. Countries with unitary and dual rental markets, such as Sweden, the Netherlands, and Finland, maintained relatively low rates, though some increases were observed. A closer look revealed a notable increase was observed between 2020 and 2023 in Luxembourg, affecting low-income and reduced-rent households. In these countries, overcrowding disproportionately



affects low-income households, and the gap between individuals in low- and high-income households widened in most countries. Notably, there was an increase among low-income respondents, in contrast to stable low overcrowding rates among high-income respondents. In most countries, overcrowding increased among renters.

By contrast, some Southern and Eastern European countries consistently reported the highest overcrowding rates (e.g., Greece, Italy, Latvia, Bulgaria, Croatia, Romania, Poland and Slovakia), despite a declining trend in some of these countries. Income level was not the most crucial factor in these countries, as overcrowding was prevalent among both low- and high-income respondents. Latvia and Bulgaria, in particular, have exceptionally high overcrowding rates among high-income respondents that do not differ significantly from those among low-income respondents. Changes across tenure status was relatively minor for Southern European countries, except for a decrease among reduced-rate renters in Greece and an increase among reduced-rate renters in Portugal. The rapid declines in overcrowding exhibited in the Baltic countries, Hungary and Slovenia were distributed across tenure status, albeit to a different extent. Slovakia is an outlier in that it has experienced an increase in the overcrowding rate among reduced-rate renters over time.

Overall, our data suggest that overcrowding is related to low income in Northern and Western European countries, whereas in most Southern and Eastern European countries, it is related to more than just the limited affordability of housing – specifically, norms around intergenerational co-residence (Norris & Domański, 2009; Stephens et al., 2015). Thus, a slight increase in overcrowding rates, especially among renters in Northern and Western countries, is likely to be linked to rising housing costs, particularly in the private rental sector in recent years (a phenomenon already explored in the context of Sweden by Grundström et al., 2024; Listerborn, 2023). Conversely, the sharp decline observed in some Eastern European countries among both high- and low-income respondents could indicate a change in overall living arrangements in these countries.

5.4 Security

We define housing insecurity as the state where households may be forced to move or be evicted, which in the extreme case could result in homelessness. Due to the limited data availability, we see if individuals have ever been in arrears with their rent/mortgage or utilities³³ (see also Waldron, 2023). This is a retrospective data based on the period of past twelve months.

5.4.1 Rent/Mortgage Arrears

Figure 46 presents the trend in the prevalence of rent/mortgage arrear across unitary rental market countries between 2010 and 2023. In conservative-corporatist unitary rental market countries, the three countries vary in terms of overall prevalence but share similarities in terms of stability of the trend. Sweden also shows a relatively stable trend over time. In Denmark, with the exception of a small decline in in 2016, the trend is generally stable. The Netherlands shows an increasing trend between 2010 and 2014 and decreasing trend afterwards.

³³ Note that utility arrears are part of the Energy Poverty in the following section.



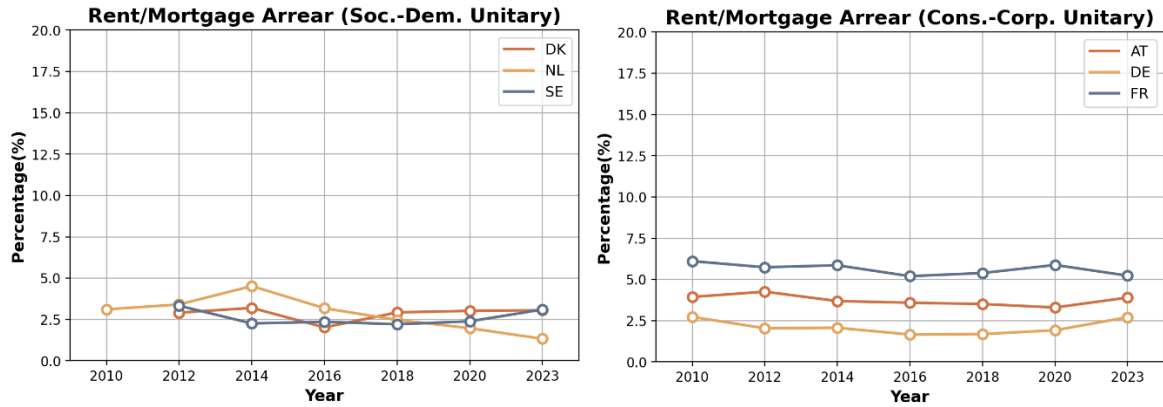


Figure 5.46 Trends in prevalence of rent/mortgage arrear across unitary rental market countries 2010-2023 (%)

Note: disconnected line indicates no data available for that year. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries.

Prevalence of rent/mortgage arrear for high-income respondents is generally low in all unitary rental market countries, with the exception of 2020 in Sweden and Denmark, which shows an increase but decreases again in 2023 (see Figure 47). This increase is especially notable because we do not see as sharp an increase among low-income respondents. On the contrary, increase in the prevalence of rent/mortgage arrear in 2014 in the Netherlands is driven by low-income respondents. In the conservative-corporatist unitary rental market countries, the difference in the prevalence across countries is more visible among low-income respondents as high-income respondents generally show a low prevalence in all countries (all below 2% in all years observed). The gap between the low- and high-income is therefore driven by how prevalent these arrears are among low-income respondents. France shows the highest gap, followed by Austria and Denmark.



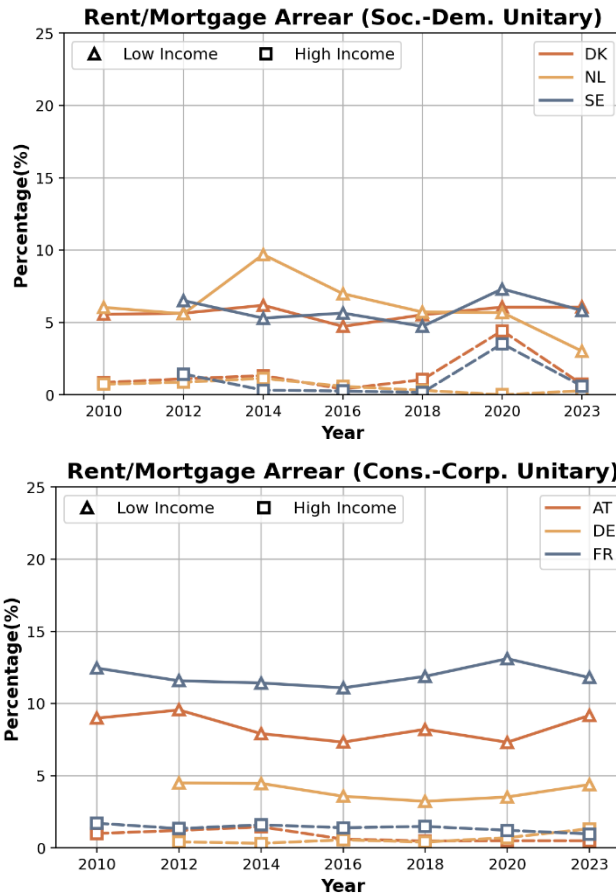


Figure 5.47 Trends in prevalence of rent/mortgage arrear across unitary rental market countries by income 2010-2023 (%)

Note: low income refers to the first tertile and high income refers to the third tertile. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries.

The change in the prevalence of rent/mortgage arrears between years 2010 and 2023 is not so evidently different across tenure status, which can be expected from the generally stable overall trend (Figure 48). In Denmark and Sweden, it is the reduced-rate renters that show the highest increase in arrear, by 1.2%p and 6.7%p respectively. In both the Netherlands and France, all tenure statuses show a decrease in rent/mortgage arrears. This contrasts with Germany, where all tenure statuses except for the outright homeowners have experienced increase in rent/mortgage arrears.



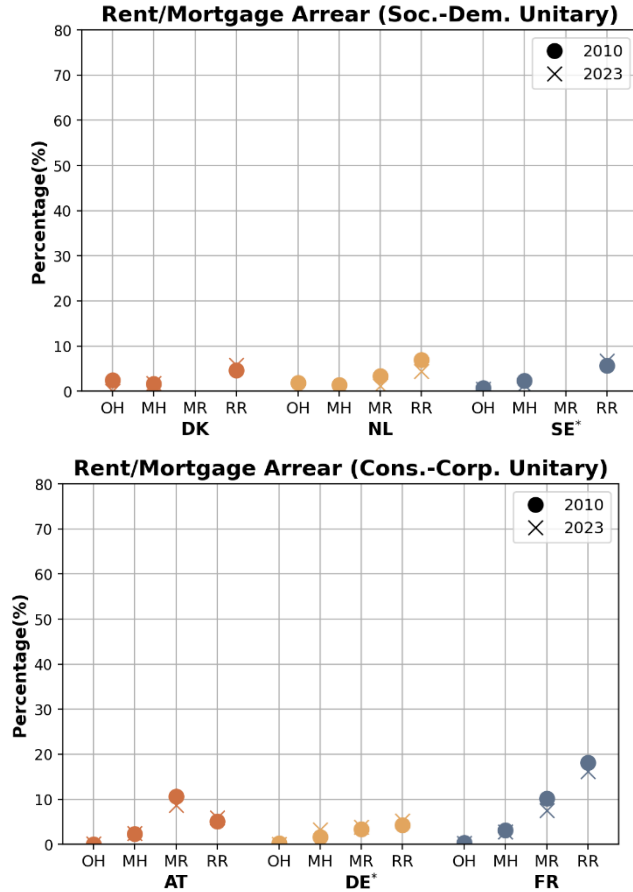


Figure 5.48 Changes in prevalence of rent/mortgage arrear across unitary rental market countries by tenure between 2010 and 2023 (%)

Note: For Sweden and Germany, the earliest available data is from 2012, instead of 2010. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Given no clear distinction between market rent and reduced rent in the Soc.-dem. unitary rental market countries, where rents are strictly regulated, all tenants are coded as renting at 'reduced rent'. This applies to DK and SE. In the NL, we distinguish the two rental tenures using the 'liberalisatiegrens'. This is a fixed amount that limits the starting rent of social rental housing, as opposed to a prevailing market rent.

Among the NWW homeownership countries with a dual rental market, Ireland is the only country with significant changes over time in the prevalence of rent/mortgage arrears, as the other countries generally show a stable trend. In Ireland, slightly more than 12% of the population experienced rent/mortgage arrears in 2010, which declined sharply until 2018 to almost 5%. This increases in 2020 to 7.8%, but falls again in 2023 to roughly 5%. Despite this large decline, Ireland remains the country with the highest prevalence of rent/mortgage arrears among the countries observed in Figure 49. Belgium shows an overall decreasing trend, while Luxembourg shows the opposite. In the UK, it is stable until 2016 but



increases in 2018. In Norway and Finland, the trend is generally stable except for a decrease in 2014 and 2016 in Norway.

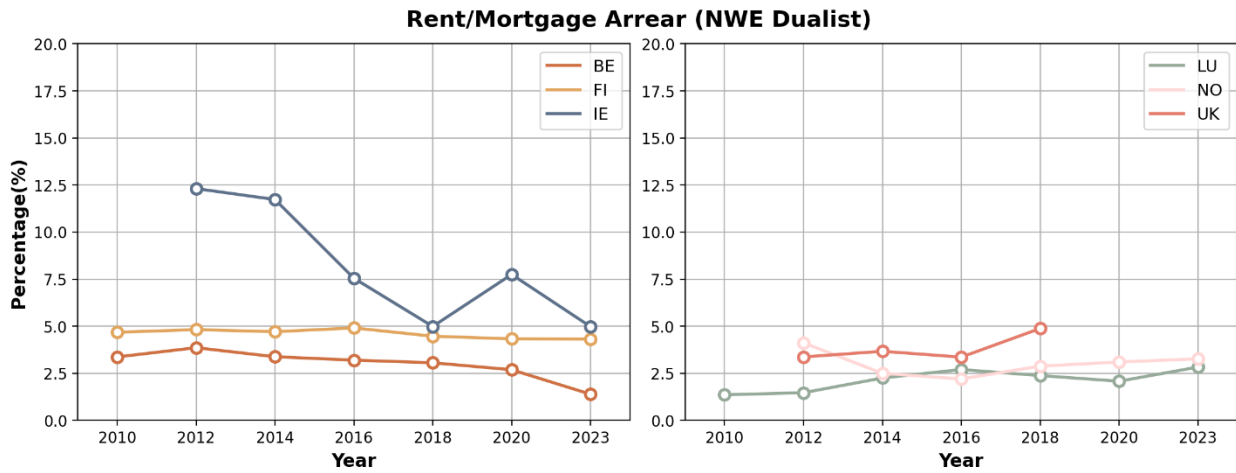


Figure 5.49 Trends in prevalence of rent/mortgage arrear across NWE homeownership countries with dual rental market 2010-2023 (%)

Note: disconnected line indicates no data available for that year. NWE refers to North-Western Europe

Figure 50 shows that the sharp decline in rent/mortgage arrear rate is mostly driven by the decrease among low-income respondents, although it also decreases among high-income respondents, but to a lesser extent. As high-income respondents rent/mortgage arrear rate remains low over time, whether it increases/decreases/remains stable among low-income respondents determines the gap between the two income groups. Figure 50 presents that the gap remains somewhat stable for Finland and Luxembourg, while it decreases for Belgium due to its decrease among low-income respondents. This is also the case in Norway between 2012 and 2014. Finally, increase in the prevalence of rent/mortgage arrears between years 2016 and 2018 has led to increase in gap between the low- and high-income in terms of rent/mortgage arrears.



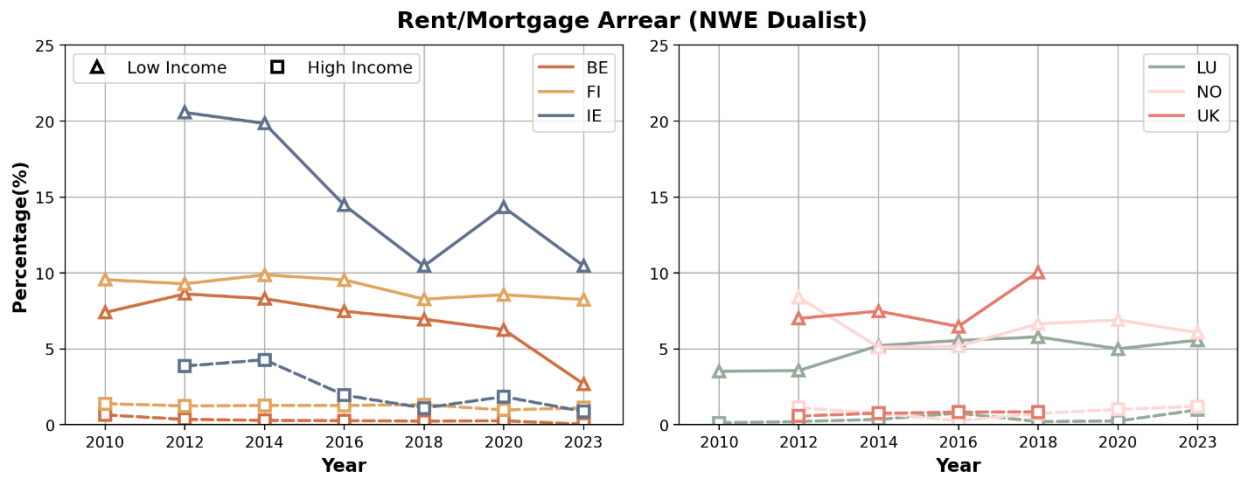


Figure 5.50 Trends in prevalence of rent/mortgage arrear across NWE homeownership countries with dual rental market by income 2010-2023 (%)

Note: disconnected line indicates no data available for that year. NWE refers to North-Western Europe

Figure 51 presents how the changes in the prevalence of rent/mortgage arrears occurred in each tenure status. In Belgium, the decrease in rent/mortgage arrears is driven by market- and reduced-rate renters, while it is the market- and reduced-rate renters as well as mortgage homeowners in Ireland. No significant change occurred to any tenure in Finland and Luxembourg, although in Finland most tenure types experienced a slight decrease in arrears while the opposite was the case in Luxembourg. In Norway, while it decreased for the market-rate renters and to a smaller extent the homeowners, it increased for the reduced-rate renters (by 5.8%p). Finally, the overall increase in the prevalence of rent/mortgage arrears in the UK is driven by the market renters and reduced-rate renters (7.6%p each). From this, we can infer that the changes are primarily driven by the renters.



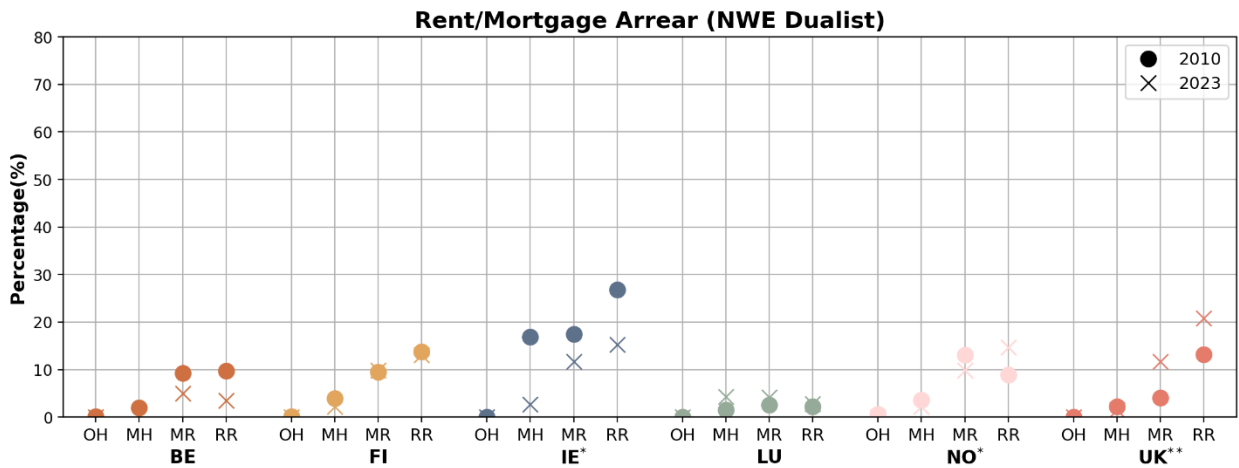


Figure 5.51 Changes in prevalence of rent/mortgage arrear across NWE homeownership countries with dual rental market by tenure between 2010 and 2023 (%)

Note: In the UK the latest data available is from 2018, not 2023, and the earliest available data is from 2012. For Ireland and Norway, the earliest data available is from 2012. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. In the UK, as of 2017, housing associations are labelled as private rather than social housing providers, leading to a break in the data lines.

Among the SE family-based homeownership countries, four patterns are observed in terms of the changes in the prevalence of rent/mortgage arrears (Figure 52). First, in Cyprus and Greece, there is an increase in arrears until 2014-2016, and starts to decrease over time. The differences between the two are the different level of prevalence (Greece being higher than Cyprus) and the fact that it increases again between 2020 and 2023 in Cyprus. Second, there is a more gradual decrease in Italy and Portugal. The two countries share similar prevalence, but the difference is one-time increase in 2014 in Portugal. Spain shares a similar trend as Portugal between 2010 and 2018, but diverges from it as the prevalence increases between 2018 and 2020, although it slightly decreases after. In Malta, the change is mostly stable, with a small upside-down U shaped curve due to an increase in the beginning and a decrease in the end.



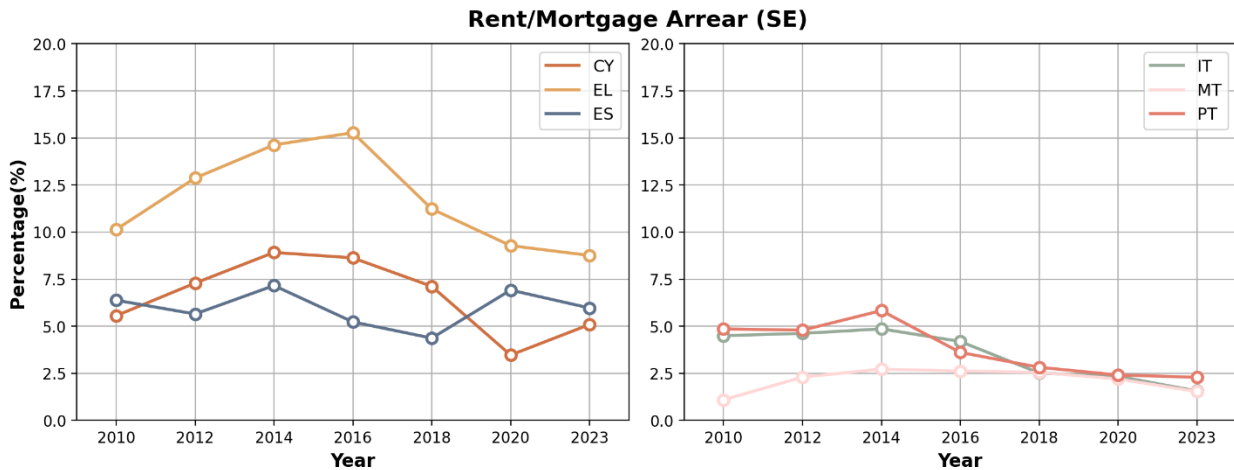


Figure 5.52 Trends in prevalence of rent/mortgage arrear across SE family-based homeownership countries 2010-2023 (%)

Note: SE refers to Southern Europe.

Figure 53 shows that the trends observed in Figure 52 is mostly driven by the prevalence of rent/mortgage arrears among low-income respondents and is more pronounced when only low-income respondents are considered. Low-income respondents in Greece shows the highest prevalence in all years, although high-income respondents in Greece also shows a relatively high prevalence of rent/mortgage arrears, the gap between the two is one of the largest in the SE family-based homeownership countries, due to a large prevalence among low-income respondents. The second largest gap is found in Spain, where the prevalence of rent/mortgage arrears is the second largest among low-income respondents but one of the lowest among high-income respondents. Cyprus, in most years, also shows relatively high prevalence of rent/mortgage arrears among high-income respondents, but it decreases after 2020. This, in contrast to the sharp increase among low-income respondents between 2020 and 2023, leads to an increased gap between the low- and high-income in 2023. In Portugal, except for year 2014, when the rent/mortgage arrears become more prevalent among low-income respondents, the gaps decline over time. Italy shows a somewhat similar pattern. Rent/mortgage arrears are least



prevalent in Malta for both low- and high-income respondents. The gap between the two income groups declined between 2020 and 2023 with the relatively larger decrease among low-income respondents.

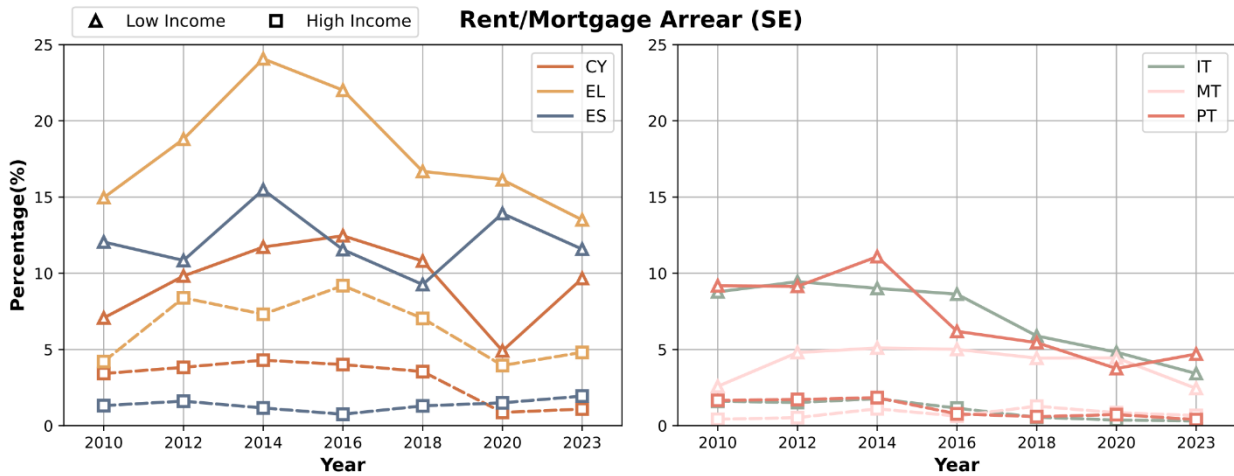


Figure 5.53 Trends in prevalence of rent/mortgage arrear across SE family-based homeownership countries by income 2010-2023 (%)

Note: SE refers to Southern Europe.

The prevalence of mortgage homeowners' mortgage arrears have declined in all countries between 2010 and 2023, although by different extents, while different patterns are found for the market- and reduced-rate renters (see Figure 54). In Cyprus, it decreased for both renters, but more significantly among the reduced-rate renters (by 34.9%p). It also decreased for both renters in Italy, but more prominently for the market-rate renters (by 12.2%p). In Greece, both renters show increase in the prevalence of rent/mortgage arrears, while in Portugal it shows a mixed picture with a decrease among market-rate renters and an increase among reduced-rate renters.



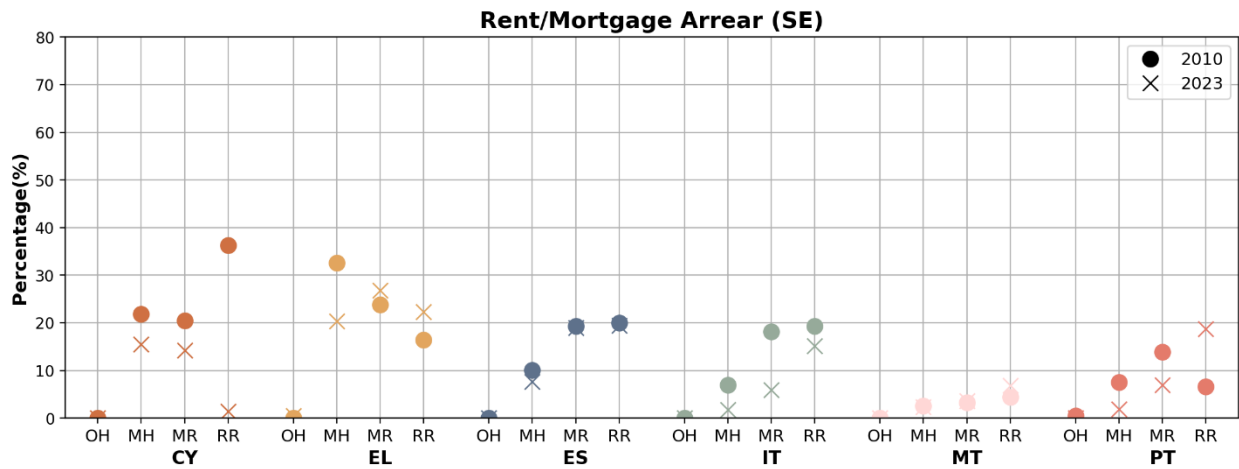


Figure 5.54 Changes in prevalence of rent/mortgage arrear across SE family-based homeownership countries by tenure between 2010 and 2023 (%)

Note: SE refers to Southern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

In all Eastern European countries, the prevalence of rent/mortgage arrears has decreased between 2010 and 2023, but in different patterns, and with an exception of Romania that increased by 0.03%p (see Figure 55). Most notable change occurred in Latvia and Hungary, with the former showing a steady decline over time, while it decreases after increasing until 2014. Slovenia shows a similar pattern as Hungary although with smaller changes, and Czech Republic shows a relatively steady decline similar to Latvia. Relatively large fluctuations are found in Slovakia, although showing a decreasing trend overall. The other countries show relatively stable trends in the prevalence of rent/mortgage arrears over time.



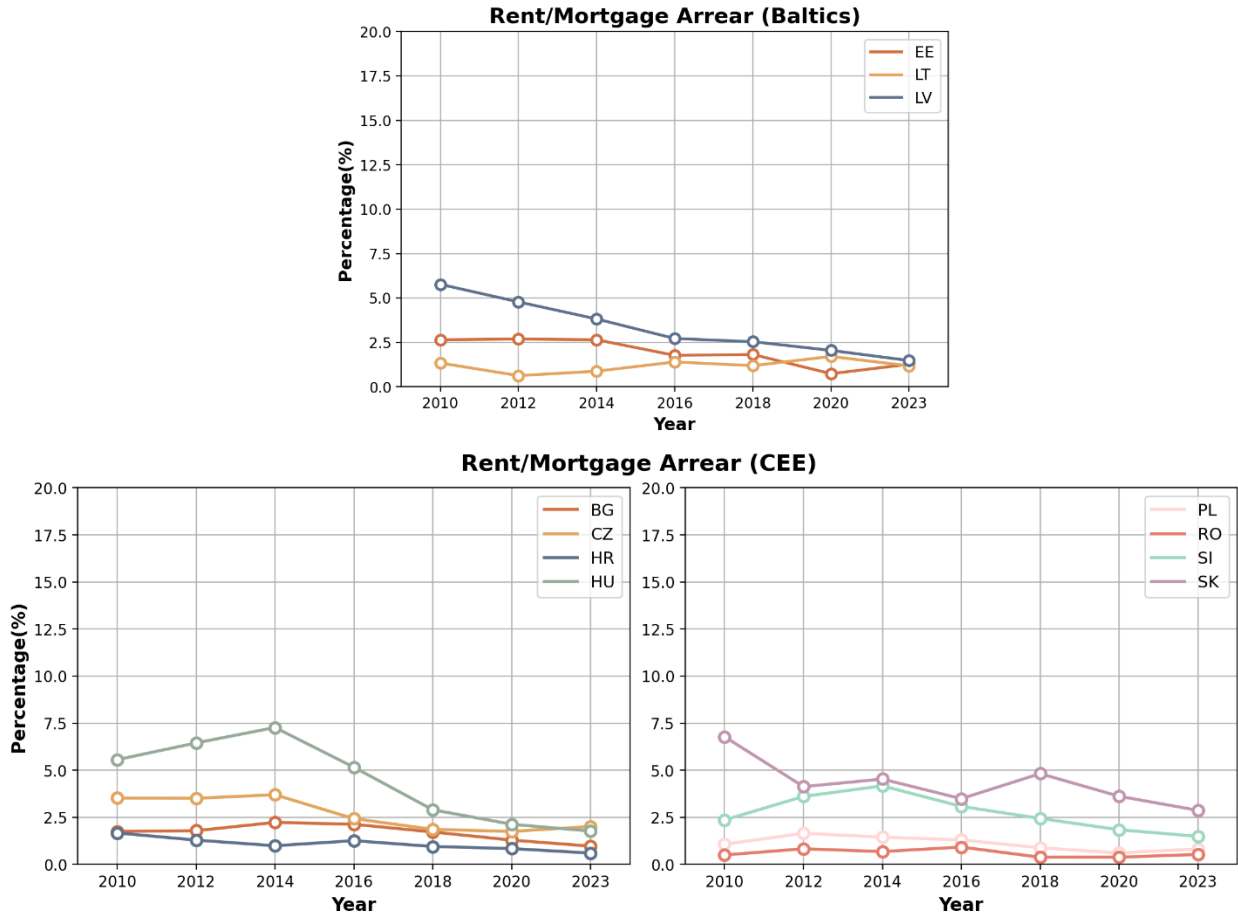


Figure 5.55 Trends in prevalence of rent/mortgage arrear across Eastern European countries 2010-2023 (%)

Note: CEE refers to Central Eastern Europe.

With the exception of Slovakia, there is less fluctuation in the prevalence of rent/mortgage arrears among high-income respondents in all Eastern European countries examined in Figure 56. The change is primarily driven by low-income respondents and so is the gap between the low- and high-income. What needs to be noted is that in a number of countries, the difference between the low- and high-income is close to non-existent. This is the case in Estonia, Lithuania, Bulgaria, Croatia, Poland and Romania. In Latvia, Hungary and Slovakia, due to the overall decrease in the prevalence of rent/mortgage arrears among low-income respondents, the gap between the low- and high-income decreased over time. Note that in Slovakia, the gap even though the overall prevalence is



relatively high among low-income respondents, the gap decreased due to relatively higher prevalence among high-income respondents. The highest low-high income gap is found in Czech Republic as the prevalence among high-income respondents remains stably low.



Figure 5.56 Trends in prevalence of rent/mortgage arrear across Eastern European countries by income 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated.

In all countries in Eastern Europe, with the exception of Poland, Estonia, Romania and Slovakia, show decrease in the prevalence of rent/mortgage arrears in all tenure statuses between 2010 and 2023 (Figure 57). Patterns vary in terms of the extent of decrease. For instance, in Latvia and Czech Republic, the biggest decrease is found among the reduced-rate renters (28.4%p and 5.6%p



respectively), while it is among the market-rate renters in Lithuania, Croatia, Hungary, Bulgaria and Slovenia (12.5%p, 17.2%p, 18.4%p, 14.3%p and 19.4%p respectively). In Estonia, almost no change has occurred among the market-rate renters, and in Poland and Slovakia it increased for reduced-rate renters as opposed to the decreasing trend found in other tenure statuses. On the contrary, it is the mortgage homeowners who experienced an increase in prevalence of rent/mortgage arrears in Romania.

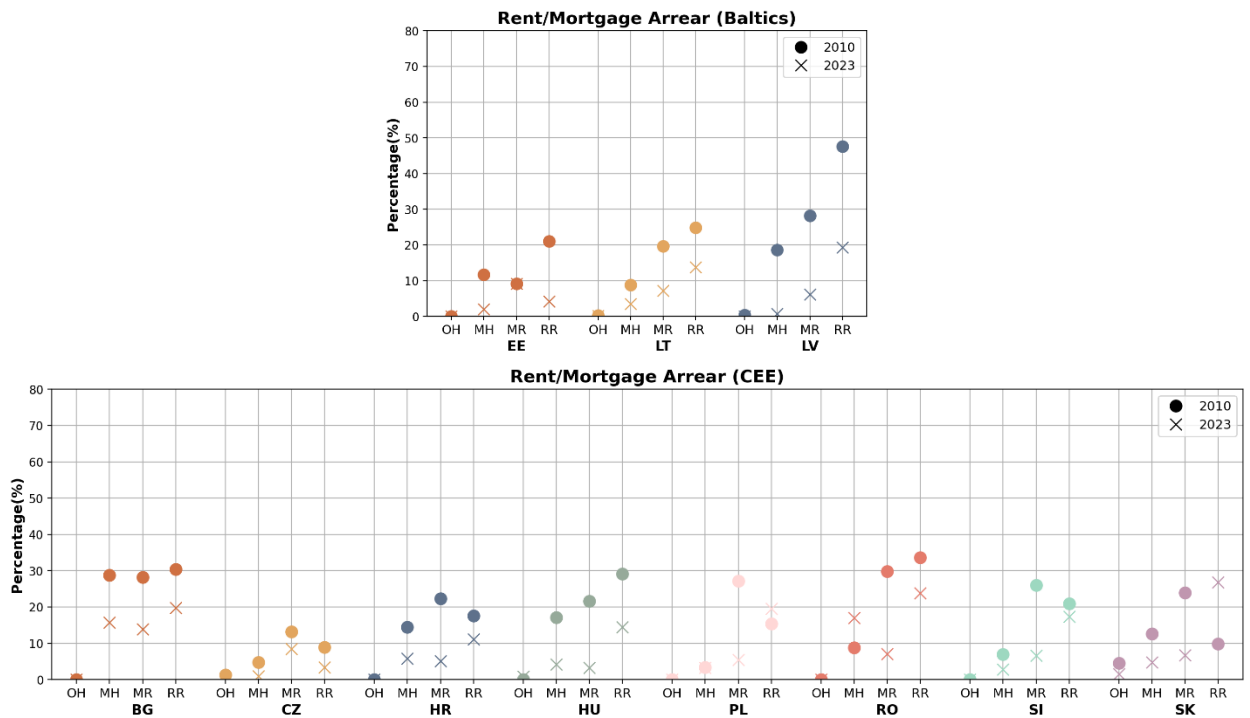


Figure 5.57 Changes in prevalence of rent/mortgage arrear across Eastern European countries by tenure between 2010 and 2023 (%)

Note: CEE refers to Central Eastern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

5.4.2 Summary

Between 2010 and 2023, rent or mortgage arrears across Europe remained stable or declined. However, disparities persist between income levels and tenure statuses. Low-income households consistently experienced higher arrears, driving the disparity between income groups, particularly in countries such as France, Greece, and Spain. While arrears remained low among high-income



households, temporary increases were observed in Sweden and Denmark in 2020, returning to lower levels by 2023. In Greece and Cyprus, the prevalence of arrears remained relatively high, even among high-income respondents, although it has declined in recent years. Changes across tenure status show mixed results. There were no substantial changes in any tenure status in countries with a unitary rental market, while notable changes were observed for renters in few North-Western homeownership countries with a dual rental market. Housing security in terms of rent or mortgage arrears improved among renters in Belgium and Ireland, but worsened among the renters in the UK and reduced-rate renters in Norway. It should be noted that the significant progress in Ireland was also driven by a substantial decline in arrears among mortgage homeowners. Despite the general improvement in arrears, the number of reduced-rate renters in arrears increased in some countries, including Greece, Portugal, Poland and Slovakia. While Romania maintained low arrears over time, changes were observed across tenure status. The situation improved for renters, but it worsened for mortgage homeowners. Overall, the data highlight a general improvement in housing security across Europe over time. However, low-income households and renters remain relatively more vulnerable to rent or mortgage arrears, which, in extreme cases, could even lead to eviction or homelessness.

5.5 Energy poverty

Energy poverty is when “*a household must reduce its energy consumption to a degree that negatively impacts the inhabitants' health and well-being*” (European Commission, n.d.). Building on the list of indicators developed by EU Energy Poverty Observatory (EPOV) to measure energy poverty using different sources (see Gouveia et al., 2023), we use two of the available indicators that do not overlap with the other housing problems above: (1) heating affordability (i.e. the ability to keep housing adequately warm) and (2) having arrears on utility

bills. Similar to the rent/mortgage arrears, utility arrears refers to having arrears in the past twelve months.

5.5.1 Heating Unaffordability

Figure 58 shows the trend in heating unaffordability rate over time between 2010 and 2023 in North Western European countries with unitary and dual rental markets. Note that in this section, we examine “unaffordability” as an indicator of energy poverty, as the variable is reverse-coded to have high rate to indicate lower ability to afford adequate heating in the housing. The countries generally show a low and stable trend that increases overall. Although it is not as visible on the figure due to the scale of y-axis³⁴, Ireland, Belgium, Germany and France show a relatively higher heating unaffordability rate than other countries. France, in particular shows the highest rate in 2023 compared to all the other time points and countries in Figure 58.

³⁴ The range of y-axis is set to be consistent for all other figures with the same housing problem



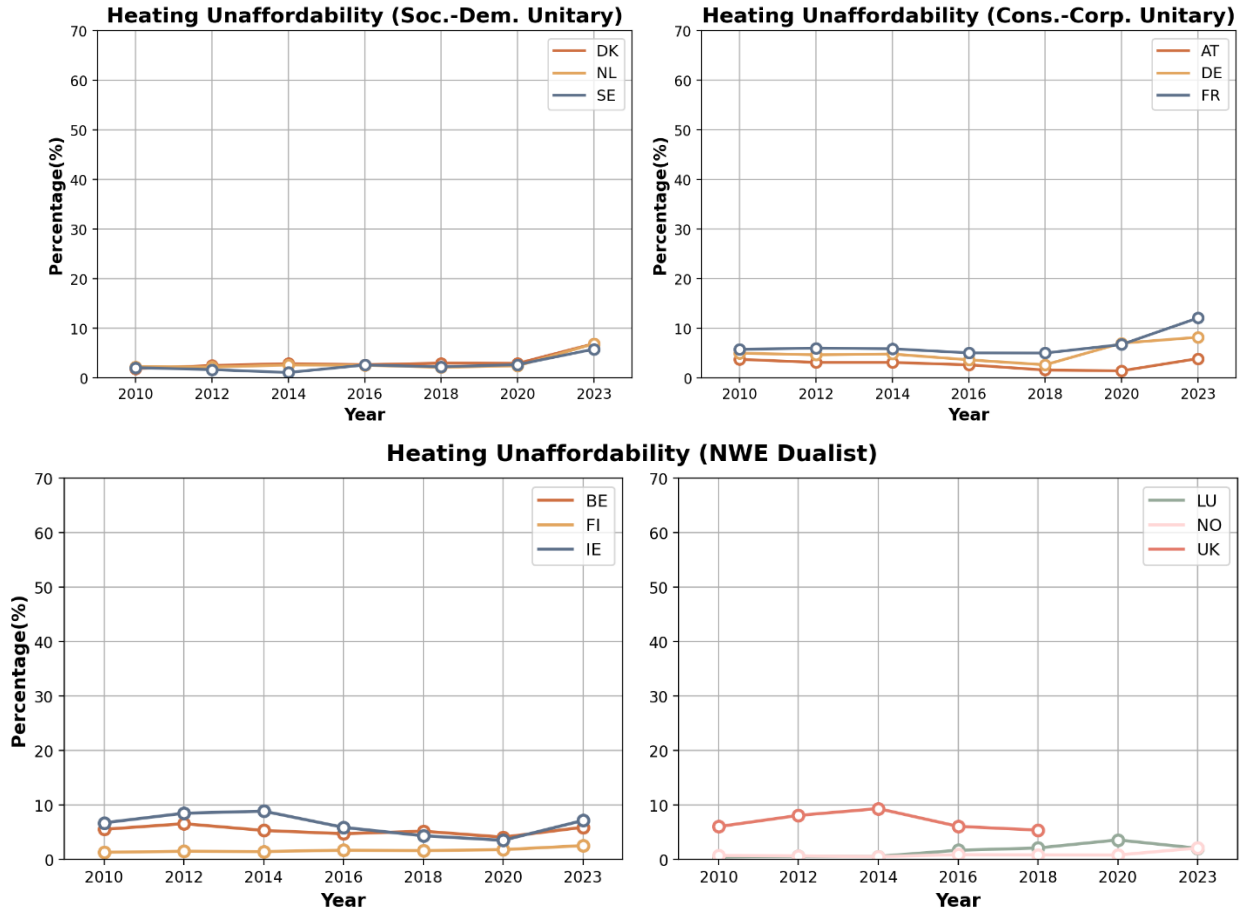


Figure 5.58 Trends in heating unaffordability rate across unitary and dual rental market countries 2010-2023 (%)

Note: disconnected line indicates no data available for that year. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe.

Heating unaffordability rate among high-income respondents is generally very low (i.e. less than 3% for most years and countries), although it increased in most countries between 2020 and 2023 (see Figure 59). The gaps in heating unaffordability between the low- and high-income depends on the rate among low-income respondents. In general, we see an increase in the gap between the low- and high-income across these countries over time, but it also shows an overall decrease in some countries, such as Belgium and Ireland. In Finland, Norway and Luxembourg, both low- and high-income respondents show low



heating affordability rate over time, although the overall increase among low-income respondents contributes to increase in low-high income gap.

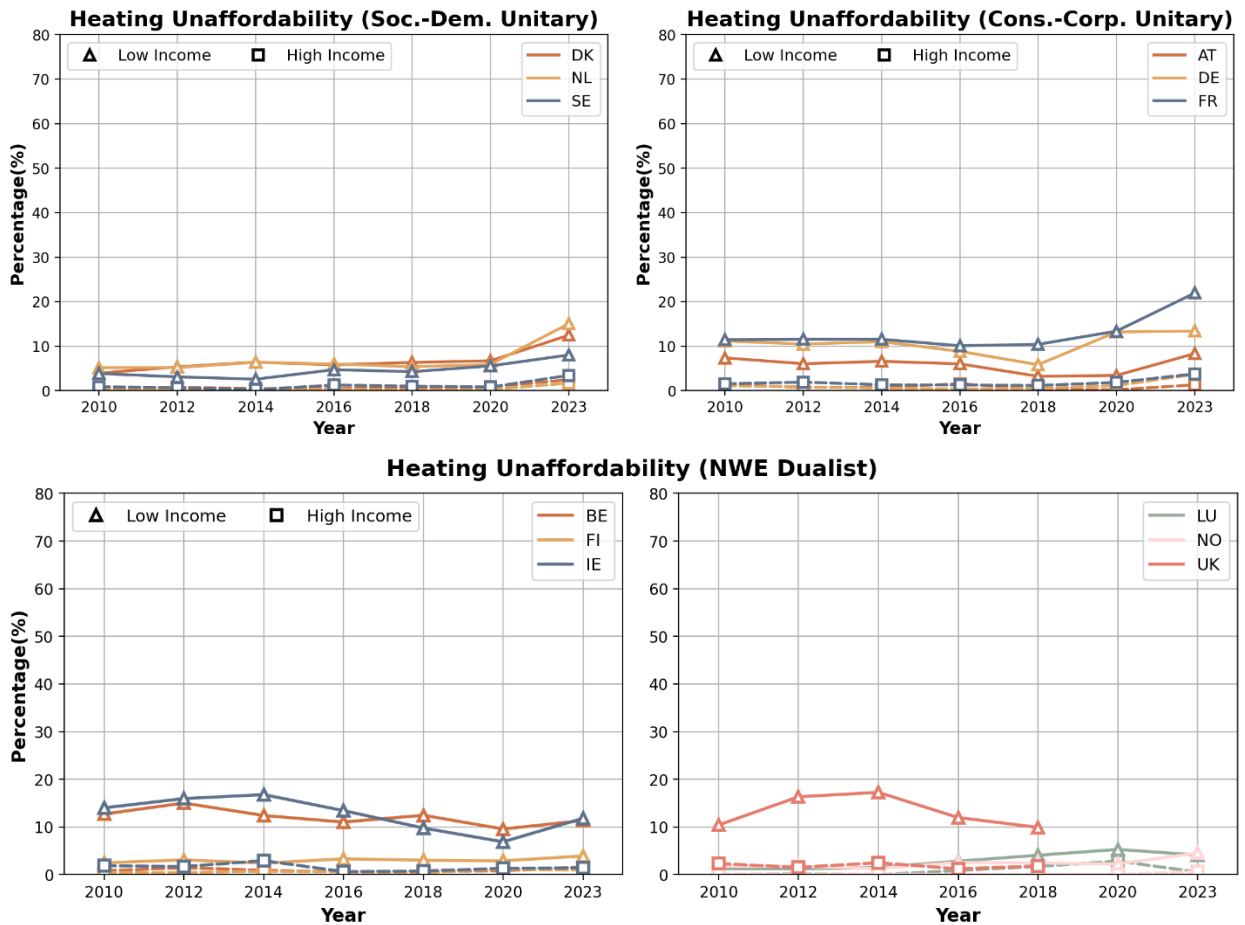


Figure 5.59 Trends in heating unaffordability rate across unitary and dual rental market countries by income 2010-2023 (%)

Note: low income refers to the first tertile and high income refers to the third tertile. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe.

In all social-democratic unitary rental market countries, heating unaffordability rate increased across tenure status (see Figure 60). The most notable difference is found among the reduced-rate renters in the Netherlands (13.0%p) and Denmark (6.9%p). Among the conservative-corporatist unitary rental market countries, while Germany and France show an increase in heating unaffordability rate across all tenure statuses, the change is more prominent in France than in Germany, especially among the renters. Moreover, Austria does not show a



significant change between 2010 and 2023. Somewhat mixed patterns are observed for the NWE homeownership countries with dual rental market. In Belgium and Ireland, heating became more unaffordable among the market-rate renters, while it became less unaffordable for the reduced-rate renters. No substantial changes are observed in Finland, Luxembourg and Norway, but they show increase in heating unaffordability in all tenure statuses. On the contrary, heating became more affordable for more people in the UK over time for all tenure statuses between 2010 and 2020, although the change is minimal.

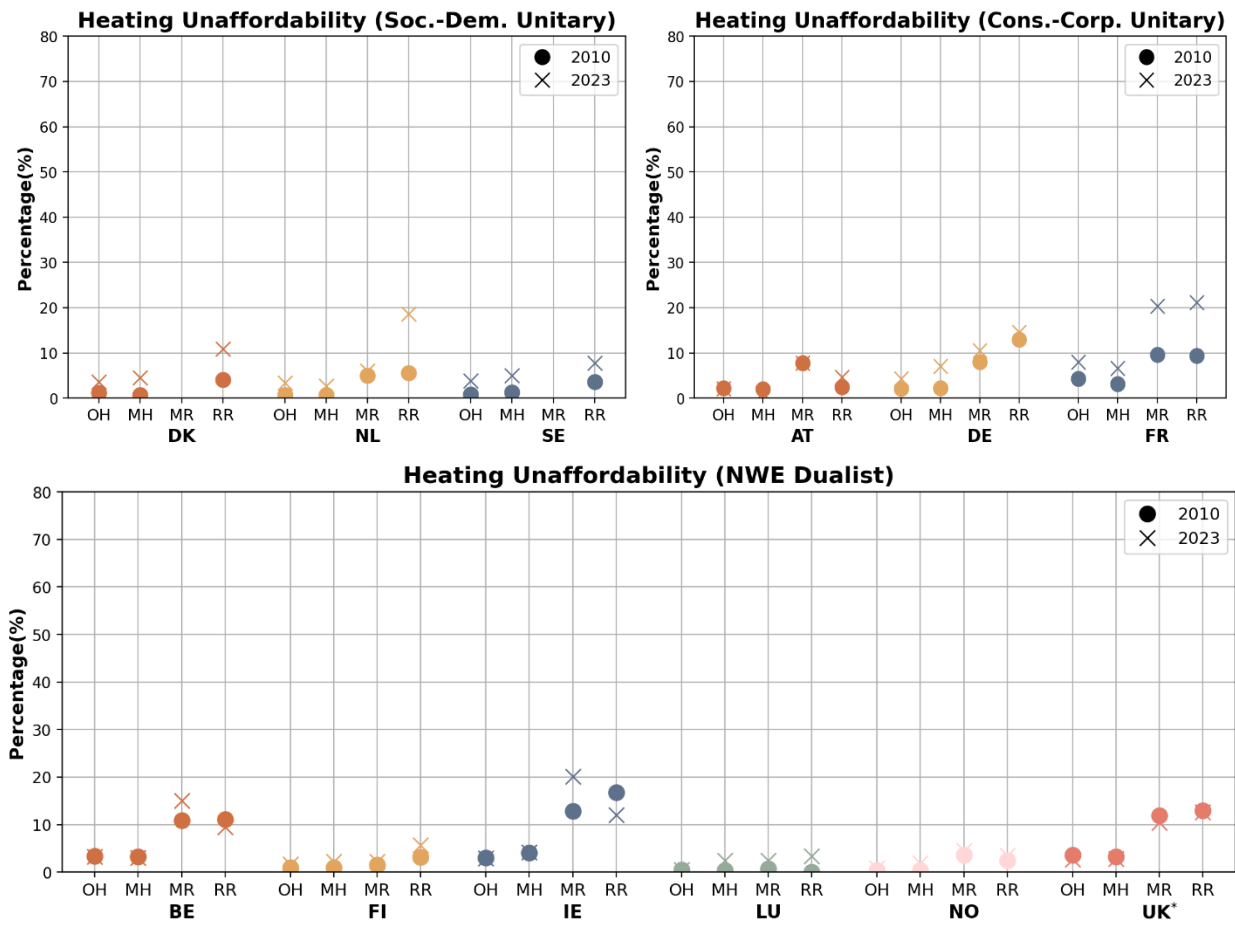


Figure 5.60 Changes in heating unaffordability rate across unitary and dual rental market countries by tenure between 2010 and 2023 (%)

Note: Some data are missing including the reduced rent in Denmark in 2010 and reduced-rent in Sweden in 2023. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Given no clear distinction between market rent and reduced rent in the Soc.-dem. unitary rental market countries, where rents are strictly regulated, all tenants are coded as renting at 'reduced rent'. This applies to DK and SE. In the NL, we distinguish the two rental tenures using the 'liberalisatiegrens'. This is a fixed amount that limits the starting rent of social rental housing, as opposed to a prevailing market rent. In the UK, as of 2017, housing associations are labelled as private rather than social housing providers, leading to a break in the data lines.



Heating affordability rate is generally higher among the SE family-based homeownership countries than among the countries with NWE unitary or dualist rental market. However, there is no clearly discernible pattern that can be observed among these countries (Figure 61). Spain shows relatively low heating unaffordability, although it increases in the recent years, especially between 2020 and 2023. It is the only country with a somewhat steady increase over time. Greece shows an increasing trend until reading the highest point in 2014 (32.9%), then decreases over time until it increases again in 2023. Somewhat similar pattern is found in Italy, with its peak in 2012 (21.3%) and a slight increase in 2023 after a decreasing trend. Both Cyprus and Portugal shows a relatively steady downward trend over time, except for the divergence in the year 2023, when it continues to decrease in Cyprus but increases slightly in Portugal. Malta shows a very unique pattern with a sharp decline in heating unaffordability rate between 2014 and 2016, and this rate is maintained over time afterwards.

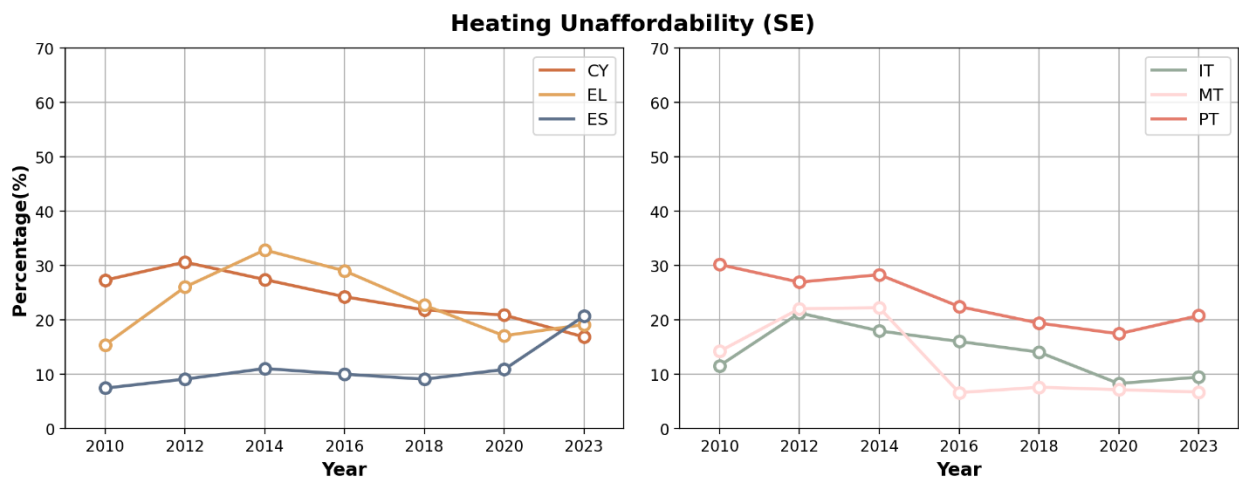


Figure 5.61 Trends in heating unaffordability rate across SE family-based homeownership countries 2010-2023 (%)

Figure 62 shows the trends in heating unaffordability rate across SE family-based homeownership countries by income between 2010 and 2023. The similarity in the trends among low-income respondents with the overall trends examined in Figure 61 indicates that the heating unaffordability is more



pronounced among low-income respondents. However, even high-income respondents in these countries show relatively high heating unaffordability compared to the countries in Northern Europe examined above. The biggest gap between the low- and high-income is found in Cyprus, Greece and Portugal, due to the generally high heating unaffordability rate among low-income respondents in these countries. The gap is not only smaller in Italy and Malta but got smaller over time, due to the decrease in heating unaffordability rate among low-income respondents in these countries over time.

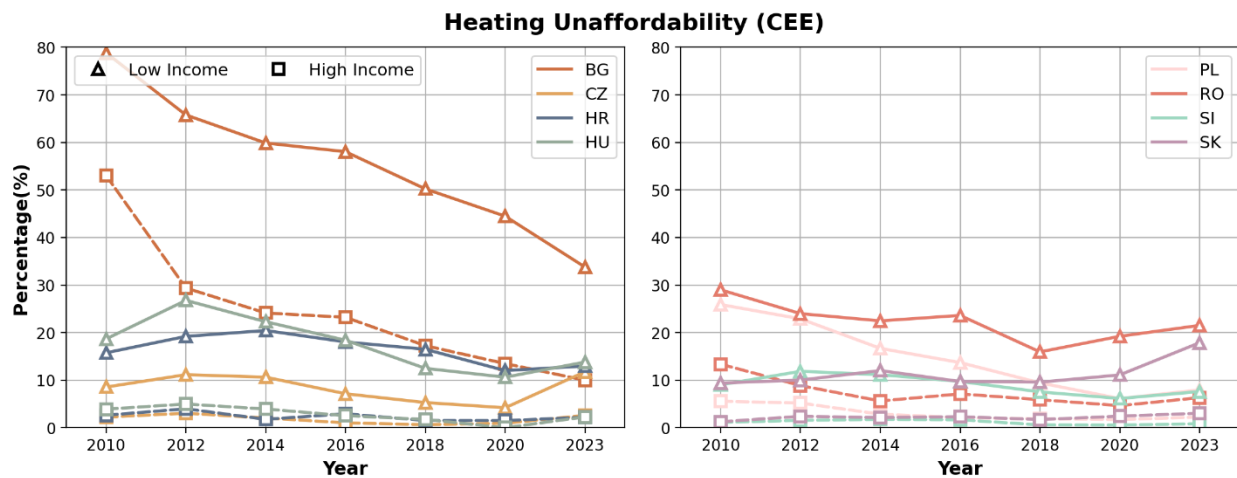


Figure 5.62 Trends in heating unaffordability rate across SE family-based homeownership countries by income 2010-2023 (%)

Note: SE refers to Southern Europe.

Figure 63 shows how the changes in heating unaffordability unfolds across tenure status comparing the year 2010 and 2023. Cyprus is the only country where it decreased for all tenure statuses, the reduced-rate renters in particular (45.0%p). In Greece and Spain, all tenure statuses experienced an increase in heating unaffordability, especially for the reduced-rate renters. In the other three countries, the picture is rather mixed. In Italy, it increased for mortgage homeowners (although slightly) while it decreased for the rest; and Malta shows somewhat the opposite with a slight increase among the renters but a more substantial decrease among the homeowners. Portugal shows decreased heating



unaffordability for all tenure statuses with the exception of reduced-rate renters that also increased substantially (by 15.7%p).

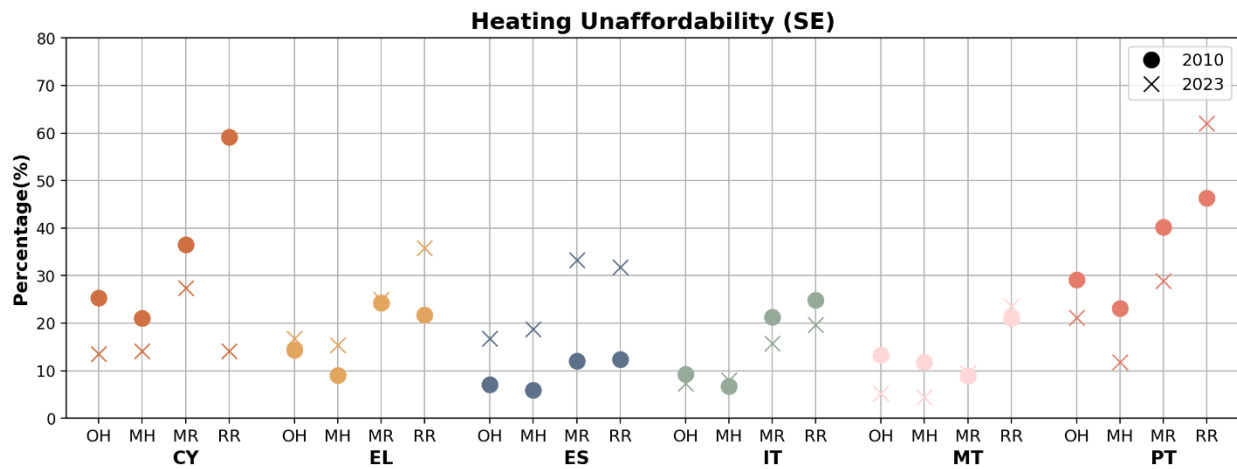


Figure 5.63 Changes in heating unaffordability rate across SE family-based homeownership countries by tenure between 2010 and 2023 (%)

Note: SE refers to Southern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

Figure 64 shows the trends in heating unaffordability rate across Eastern European countries between 2010 and 2023. Lithuania and Bulgaria show significantly higher heating unaffordability rate compared to the other countries, despite the decrease over time that is especially rapid in Bulgaria. In Bulgaria more than 60% of the population experienced not being able to afford adequate heating in 2010, and, although it decreased over time, still shows one of the highest rate in all Europe in 2023. Latvia shows a somewhat high rate of heating unaffordability in 2010 but it gradually decreases over time. Although it is not very visible in the figure below, the decreasing trend is found for Hungary, Romania and Poland. The rest of the countries show a relatively stable trend in heating unaffordability over time. Overall, Estonia, Czech Republic and Slovakia show an increase in heating unaffordability over time, and it is the opposite for Croatia and Slovenia.



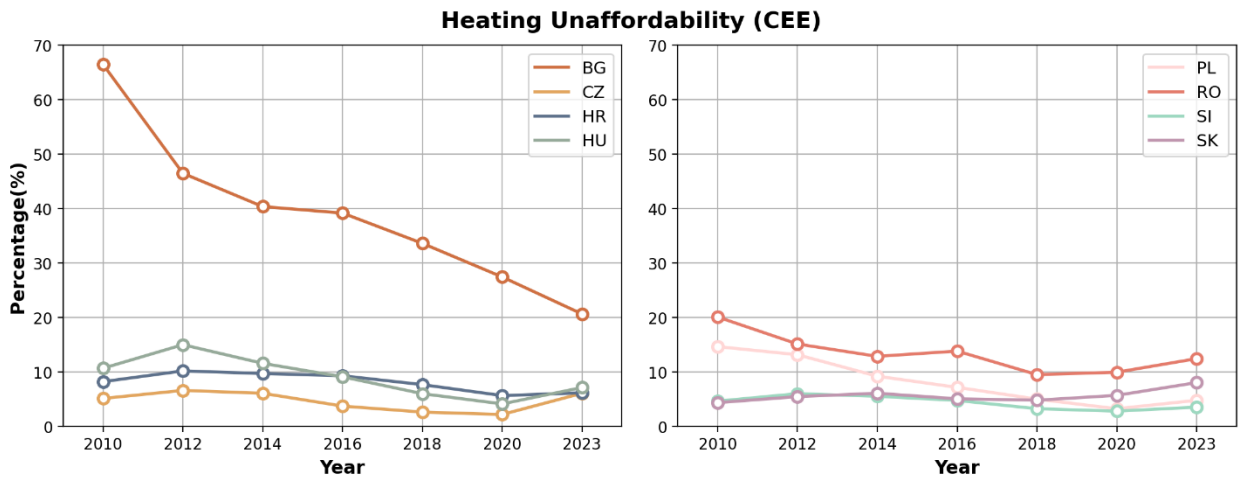
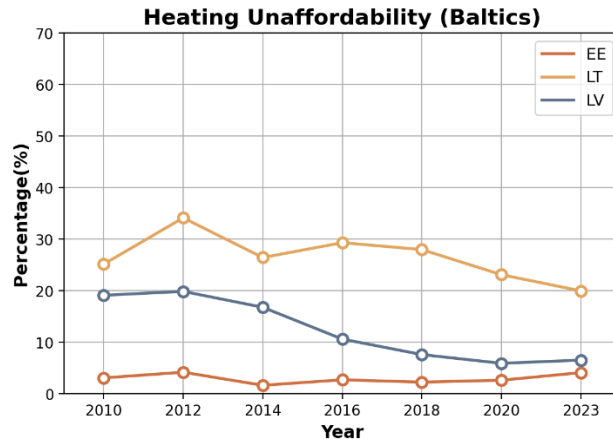


Figure 5.64 Trends in heating unaffordability rate across Eastern European countries 2010-2023 (%)

Note: CEE refers to Central Eastern Europe.

While in most countries it is low-income respondents driving the general trends in heating unaffordability rate over time in Eastern Europe with overall low and stable trend among high-income respondents, Lithuania and Bulgaria show distinct patterns across income. In Lithuania, due to the stable trend among low-income respondents in contrast to the volatile trend among high-income respondents, the general trend observed in Figure 64 is driven by the changes among high-income respondents. Figure 65 shows an upward trend between 2010 and 2012 and then a continuous downward trend in heating unaffordability



rate among high-income respondents in this country. This indicates that the heating affordability only improved among high-income respondents over time, while it was an issue across income levels in the early 2010s. In Bulgaria, heating is unaffordable even to more than half of high-income respondents in 2010, but they are still doing better than low-income respondents, almost 80% of which experienced heating unaffordability in 2010. Although both declined over time, the gap between the two remained persistently high and is the highest among all Eastern European countries observed. In Romania, although the heating unaffordability among high-income respondents is relatively higher than the other countries, the gap between the low- and high-income remains persistent as both income groups share similar trends over time.



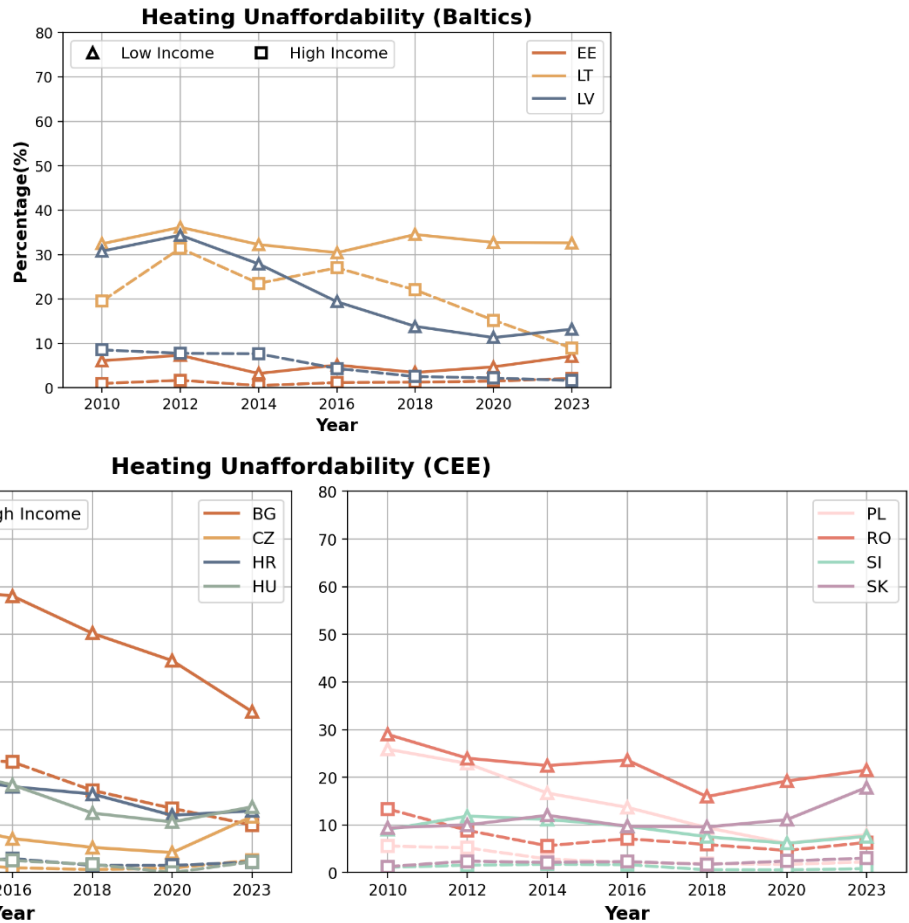


Figure 5.65 Trends in heating unaffordability rate across Eastern European countries by income 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated.

Figure 66 shows how the changes in heating unaffordability across Eastern Europe between 2010 and 2023 manifests across tenure status. In Lithuania, Latvia, Bulgaria and Hungary, it decreased for all tenure statuses. The largest change is found among the market-rate renters in Lithuania (44.0%p), reduced-rate renters in Latvia (26.1%p) and Hungary (11.6%p), and mortgage homeowners in Bulgaria (52.3%p). Most tenure statuses improved in terms of heating affordability in Croatia, Poland, Romania and Slovenia. It got worse among reduced-rate renters in Croatia and Slovenia (1.7%p and 5.1%p, respectively), among outright homeowners in Poland (2.9%p) and mortgage homeowners in Romania (2.5%p). Mixed patterns are found in Estonia, but the changes are rather



small. On the contrary, heating affordability worsened for all tenure types in Czech Republic, albeit slightly, and for most of the tenure statuses in Slovakia, especially the reduced-rate renters (50.3%p).

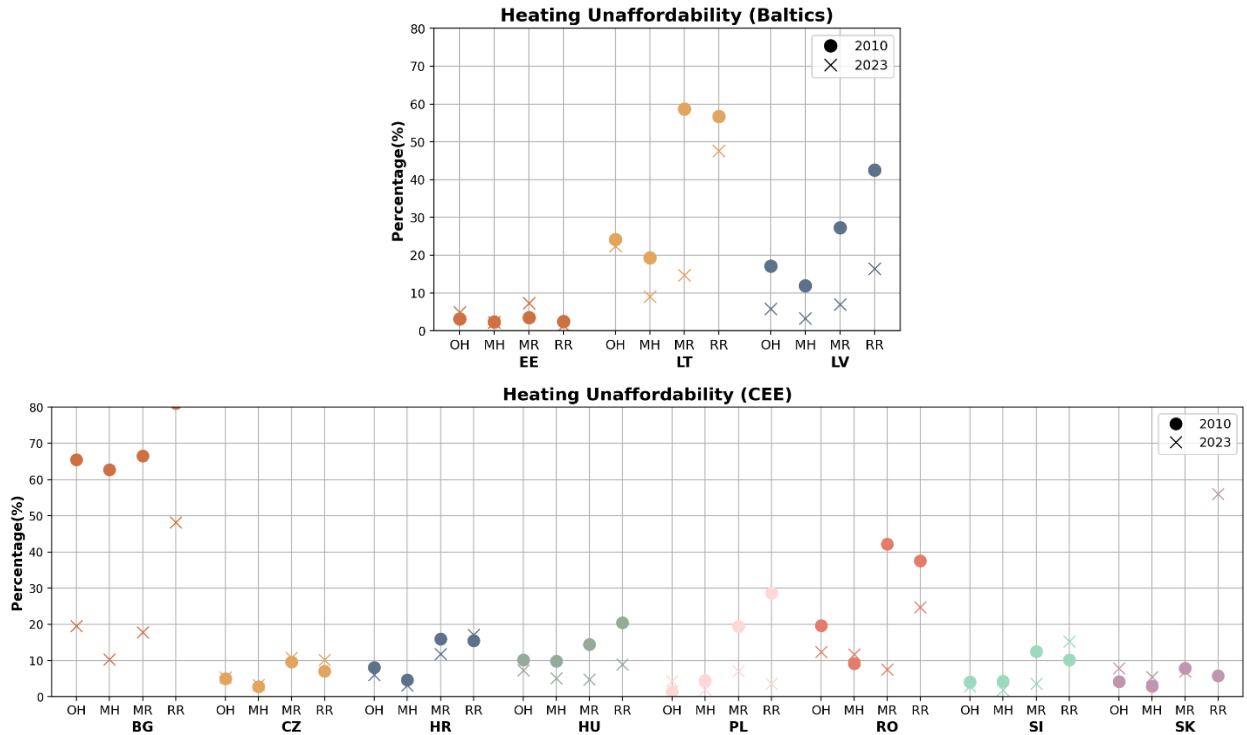


Figure 5.66 Changes in heating unaffordability rate across Eastern European countries by tenure between 2010 and 2023 (%)

Note: CEE refers to Central Eastern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

5.5.2 Utility Arrear

Similar to what was observed above with the rent/mortgage arrears, Figure 67 shows that the prevalence of utility arrear across unitary rental market countries is generally stable and low. The only country that shows prevalence higher than 5% for all time points is France. Compared to social-democratic countries, all conservative-corporatist countries show an upward trend in the recent years. NWE homeownership countries with a dual rental market also shows similarly stable trends, with the exception of Ireland. Ireland is an outlier in this group of countries because as high as roughly 18% of the population experienced utility arrears until 2014. However, it decreased over time and now shows a rate smaller



than 10%. Although the changes are not as visible in the figure below, Luxembourg shows an overall upward trend, while Belgium and the UK show over downward trends.

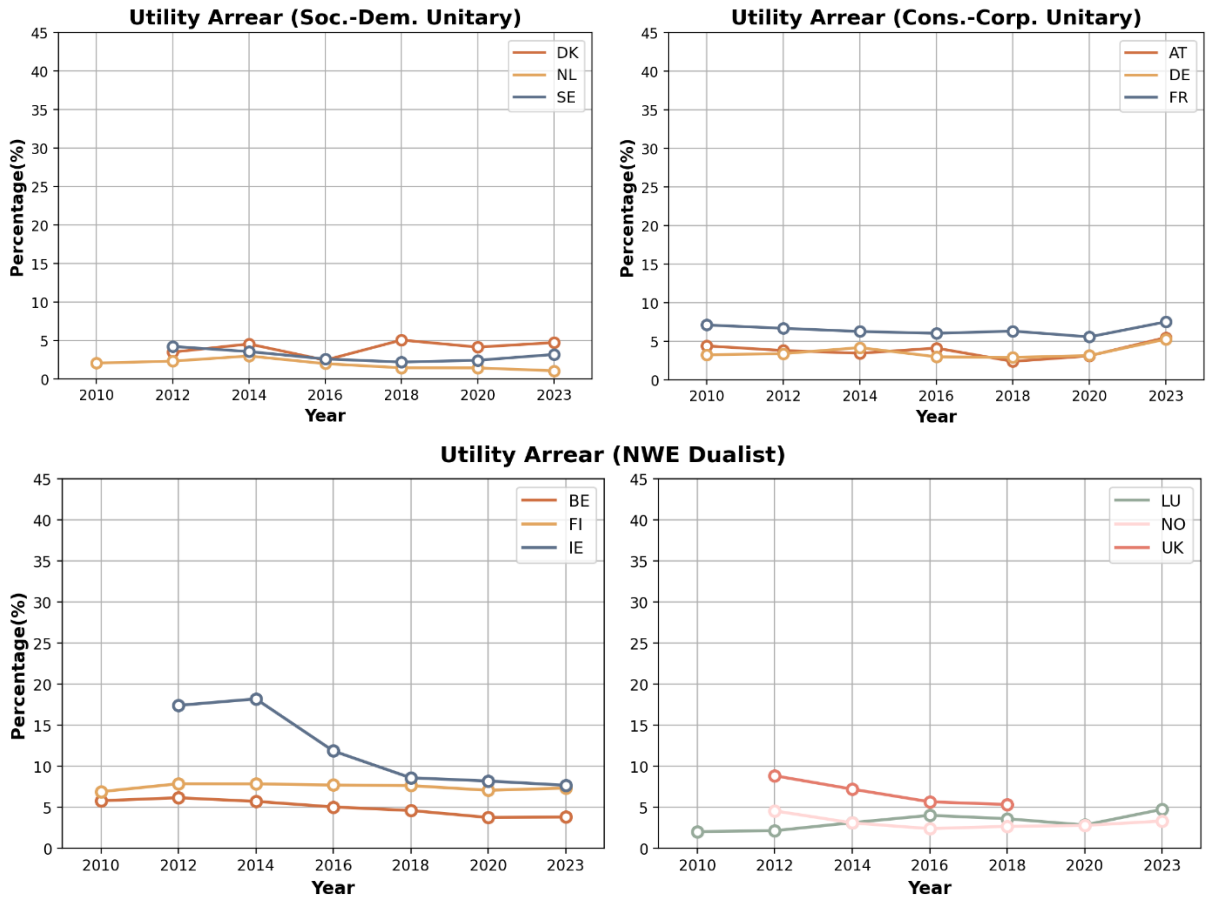


Figure 5.67 Trends in prevalence of utility arrear across unitary and dual rental market countries 2010-2023 (%)

Note: disconnected line indicates no data available for that year. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe.

The trends observed in Figure 67 can also be observed in Figure 68 among low-income respondents. With the exception of Ireland and Finland, utility arrear is very rarely experienced among high-income respondents. Even in these two countries, the highest rate is 3.5% in Finland in 2014 and 5.7% in Ireland in 2014. As



the prevalence is mostly low and stable over time among high-income respondents, the gap between the low- and high-income and its trend over time is mostly determined by the rate of low-income respondents. The gap is the lowest over time in the Netherlands and the highest in Ireland.

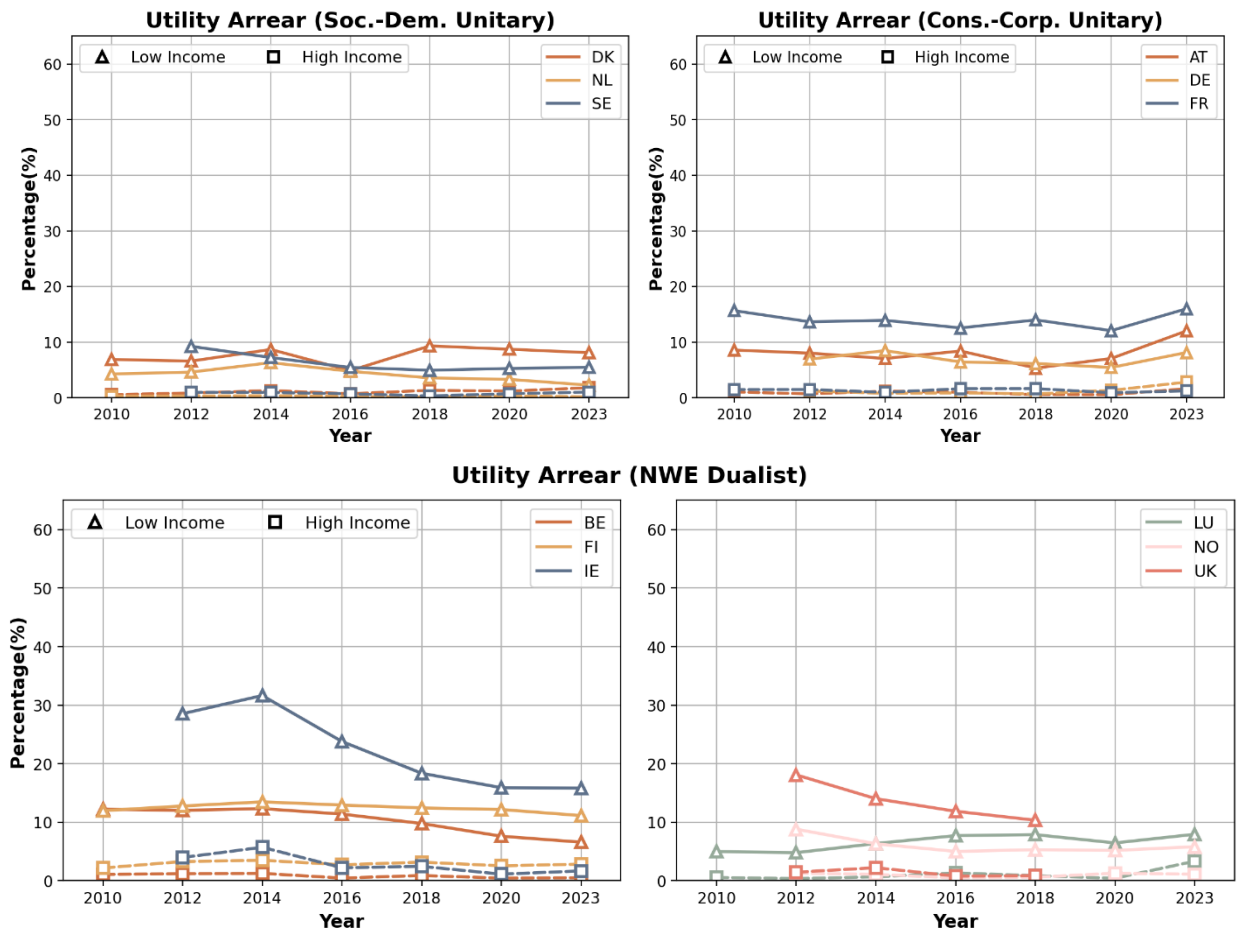


Figure 5.68 Trends in prevalence of utility arrear across unitary and dual rental market countries by income 2010-2023 (%)

Note: low income refers to the first tertile and high income refers to the third tertile. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe.

Figure 69 shows the changes in the prevalence of utility arrears between the years 2010 and 2023 across tenure status. The change is generally minimal across the unitary rental market countries for all tenure statuses. It decreased for all



tenure statuses in the Netherlands and increased for all in Germany. In France, utility arrears increased for both the market- and reduced-rate renters but decreased for the homeowners. Among the NWE homeownership countries with dual rental market, the prevalence of utility arrears decreases for all tenure statuses in Belgium, Ireland, Norway and the UK. In Luxembourg, utility arrears increase for all tenure statuses, with the highest change among the market-rate renters by 4.8%p.

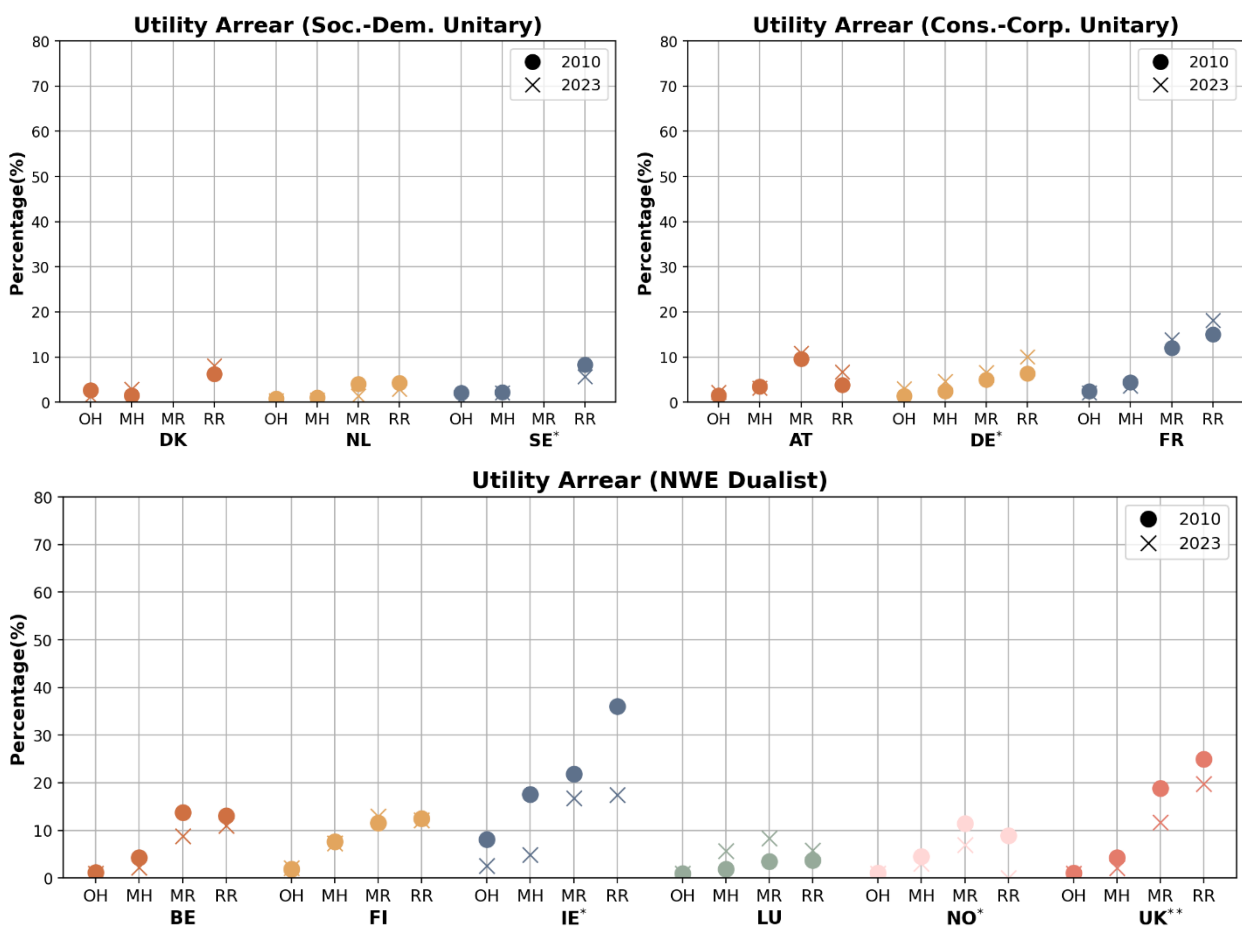


Figure 5.69 Changes in prevalence of utility arrear across unitary and dual rental market countries by tenure between 2010 and 2023 (%)

Note: Ireland compares year 2012 and 2023, and the UK compares 2012 and 2018 data due to data availability. Soc.-dem. unitary refers to social-democratic unitary rental market countries and cons.-corp. unitary refers to conservative-corporatist unitary rental market countries. NWE refers to North-Western Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent. Given no clear distinction between market rent and reduced rent in the Soc.-dem. unitary rental market countries, where rents are strictly regulated, all tenants are coded as renting at 'reduced rent'. This applies to DK and SE. In the NL, we distinguish the two rental tenures using the 'liberalisatiegrens'. This is a fixed amount that limits the starting rent of social rental housing, as opposed to a prevailing market rent. In the UK, as of 2017, housing associations are labelled as private rather than social housing providers, leading to a break in the data lines.





Figure 70 shows the trends in the prevalence of utility arrears between 2010 and 2023 across Southern European family-based homeownership countries. In all countries, with the exception of Greece, the prevalence of utility arrears increased until it reaches its peak in 2014, and decreased afterwards. However, this decrease is relatively small in Spain, so when it increases again from 2020, it reaches higher than 2014 (9.6% in 2023). Even though it increases again in 2020 in Italy as well, the decrease after 2014 is relatively large that the prevalence remains low. As mentioned, Greece is an outlier in this figure, not only in terms of its high prevalence of utility arrears which reaches 42.2% at its highest, but also in terms of its changing pattern. In contrast to the other continues, prevalence of utility arrears increase until 2016 and decrease from then to 2020, and then increases again in 2023. Despite the rapid decrease between 2016 and 2020, it remains the highest in all countries observed in this chapter.

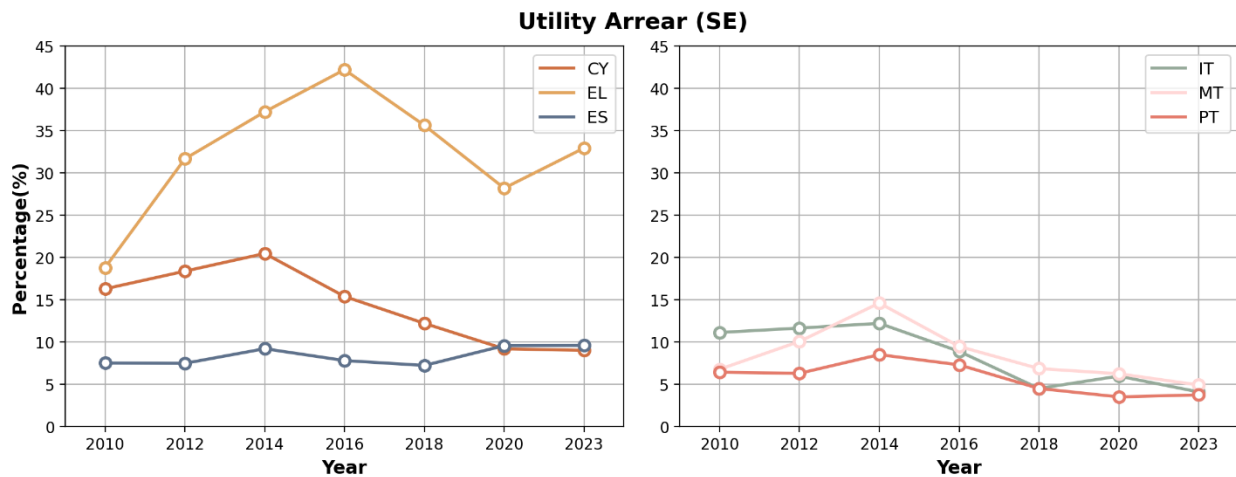


Figure 5.70 Trends in prevalence of utility arrear across SE family-based homeownership countries 2010-2023 (%)

Note: SE refers to Southern Europe.

Figure 71 shows how the trends observed in Figure 70 varies by income. This figure provides some explanations for the unique features observed in Greece. Focusing on the change between 2014 and 2016, we can observe only a small



increase among low-income respondents, and the continued rapid increase in the overall prevalence is driven by the rapid increase among high-income respondents during this time. While in most SE countries, the prevalence reaches its peak in 2014, it rose substantially among high-income respondents shortly after this period. Moreover, increase observed in the overall trend since 2020 for Spain is strengthened by the small but steady increase among high-income respondents, especially in 2023. Another thing to note is that while in some countries (e.g. Cyprus and Malta) both low- and high-income respondents follow similar patterns of change over time, in some countries (e.g., Spain, Italy, Portugal) the prevalence of utility arrears remains low and stable over time. This indicates that in some countries (such as the former cases) certain national context influences both low- and high-income households, although the gaps remain persistent, while in other countries (such as the latter cases) changes only occur among low-income respondents.

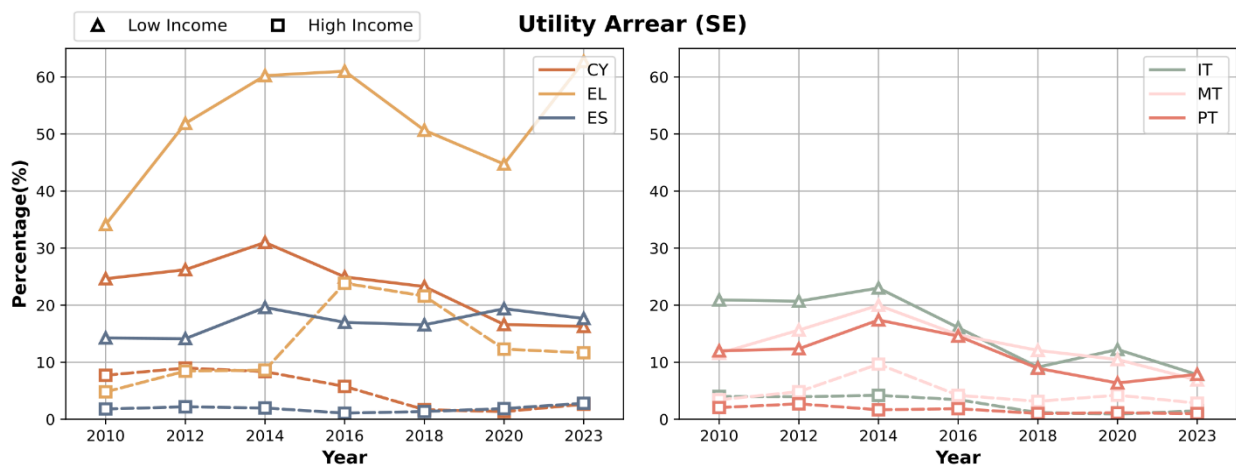


Figure 5.71 Trends in prevalence of utility arrear across SE family-based homeownership countries by income 2010-2023 (%)

Note: SE refers to Southern Europe.

Figure 72 shows the changes in the prevalence of utility arrear across the SE family-based homeownership countries by tenure between the year 2010 and 2023. In Cyprus, Italy and Malta, there is a decrease in the prevalence across all tenure statuses. The largest change in in Cyprus and Malta countries occurred



among the reduced-rents (Cyprus: 27.9%p; Malta: 3.7%p), while it is among the market renters in Italy (17.0%p). Increase in all tenure statuses is observed in Greece and Spain, with the largest change found also for the reduced-rate renters (Greece: 26.5%p; Spain: 5.4%p), however, followed by mortgage homeowners in Greece (23.5%p) and market-rate renters in Spain (4.4%p). In Portugal, utility arrears became more prevalent by 1.1%p among the reduced-rate renters, while it became less prevalent in all the other tenure statuses. The largest

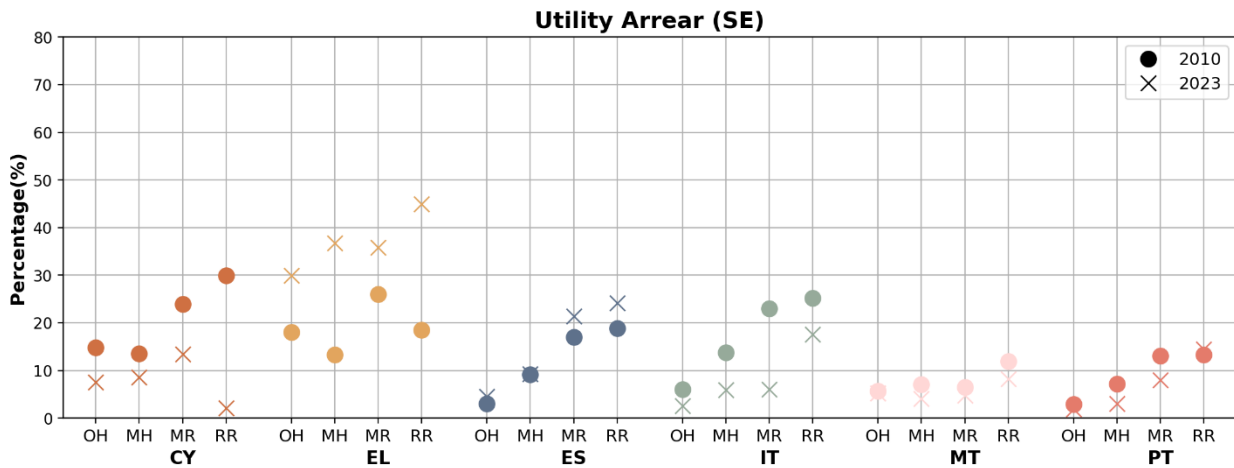


Figure 5.72 Changes in prevalence of utility arrear across SE family-based homeownership countries by tenure between year 2010 and 2023 (%)

Note: SE refers to Southern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

Figure 73 shows the trends in the prevalence of utility arrears across Eastern European countries between 2010 and 2023. In Baltics, all countries show an overall declining trend. Two notable things are; first, prevalence of utility arrears starts to decrease after reaching its highest point in 2012 in Lithuania (12.6%); second, Latvia has experienced a large decline in utility arrears since 2010, as it started from relatively high rate of 22.5% and decreased to be show similar rate as the other Baltic countries. Three patterns can be observed among the Central Eastern European countries. First, similar to the Southern European countries, utility arrears tend to increase in early 2010s and decrease over a decade after reaching its highest point in 2012 or 2014. This is the case for Romania, Croatia,



Latvia, Slovenia, Poland and to a small extent Czech Republic. Second, although following the similar pattern as the first pattern since reaching its highest point in 2014, Bulgaria shows a decrease of utility arrears in 2012. Third, Slovakia maintains a relatively similar prevalence of utility arrears over time, despite some fluctuations.

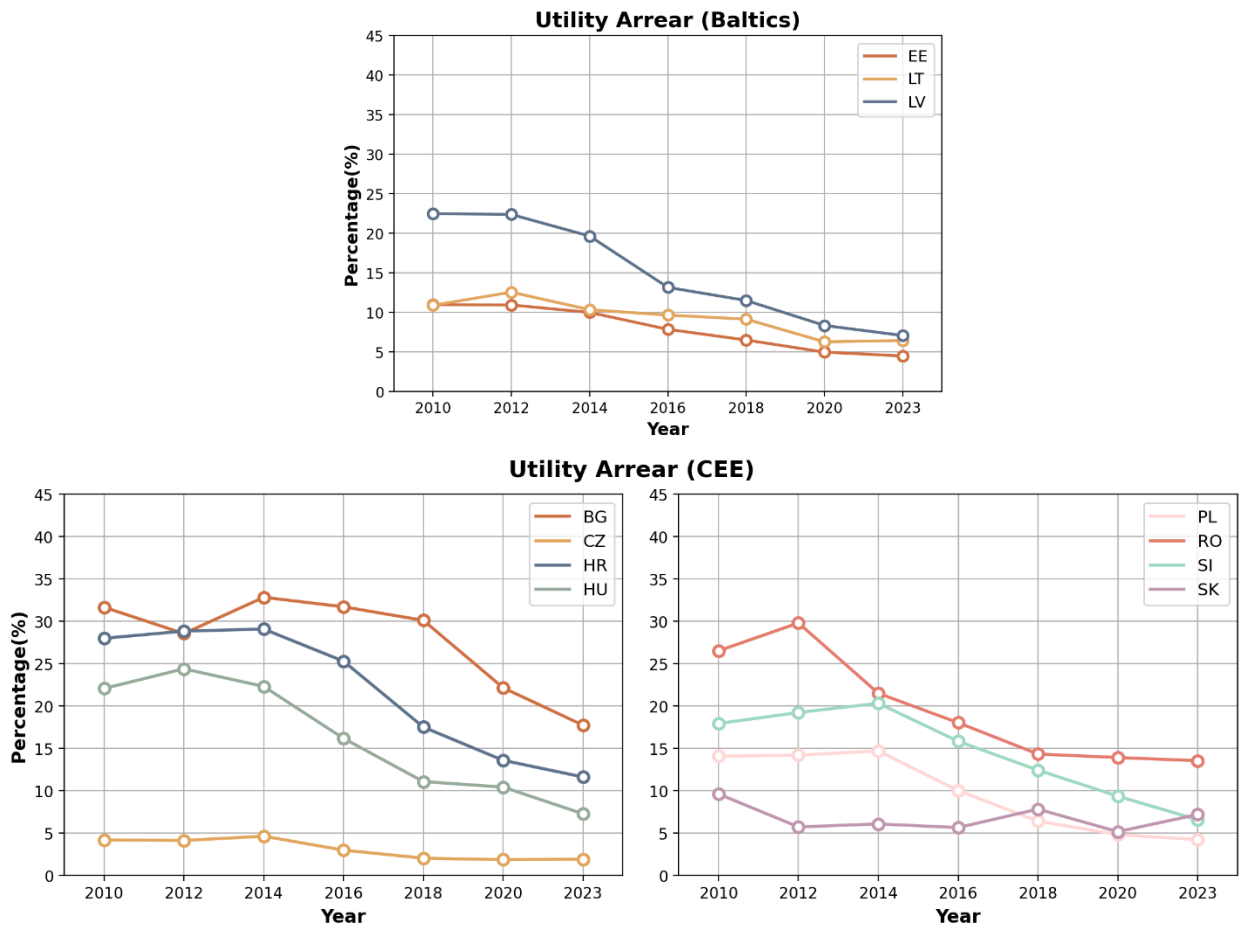


Figure 5.73 Trends in prevalence of utility arrear across Eastern European countries 2010-2023 (%)

Note: CEE refers to Central Eastern Europe.

Figure 74 shows how the trend observed in Figure 73 varies across income level. With the exception of Czech Republic where the utility arrears is relatively not common even among low-income respondents, all other countries show relatively higher prevalence of utility arrears among high-income respondents



compared to the other European countries outside of Eastern Europe. However, in all countries, low-income respondents are more likely to experience utility arrears than high-income respondents, and their trend is more volatile than that of high-income respondents. This is a consistent finding across regimes. In most countries, the decrease in the prevalence of utility arrears among low-income respondents contributed to decreasing the gap between the low- and high-income over time. However, some countries (i.e. Bulgaria, Croatia, Romania, Slovakia) show an overall increase in the gap between the low- and high-income. In Bulgaria, this is because of the increase among low-income respondents in 2016, when it already starts to decrease among high-income respondents. Similar can be said about Croatia and Romania, because the prevalence of utility arrears only decreased over time among high-income respondents, while it increased in 2012 (and 2014 for Croatia) among low-income respondents. In Slovakia, the trend fluctuated for both income groups over time, but the bigger gap in 2023 is mostly due to the relatively rapid increase in the prevalence of utility arrears in 2023 among low-income respondents.



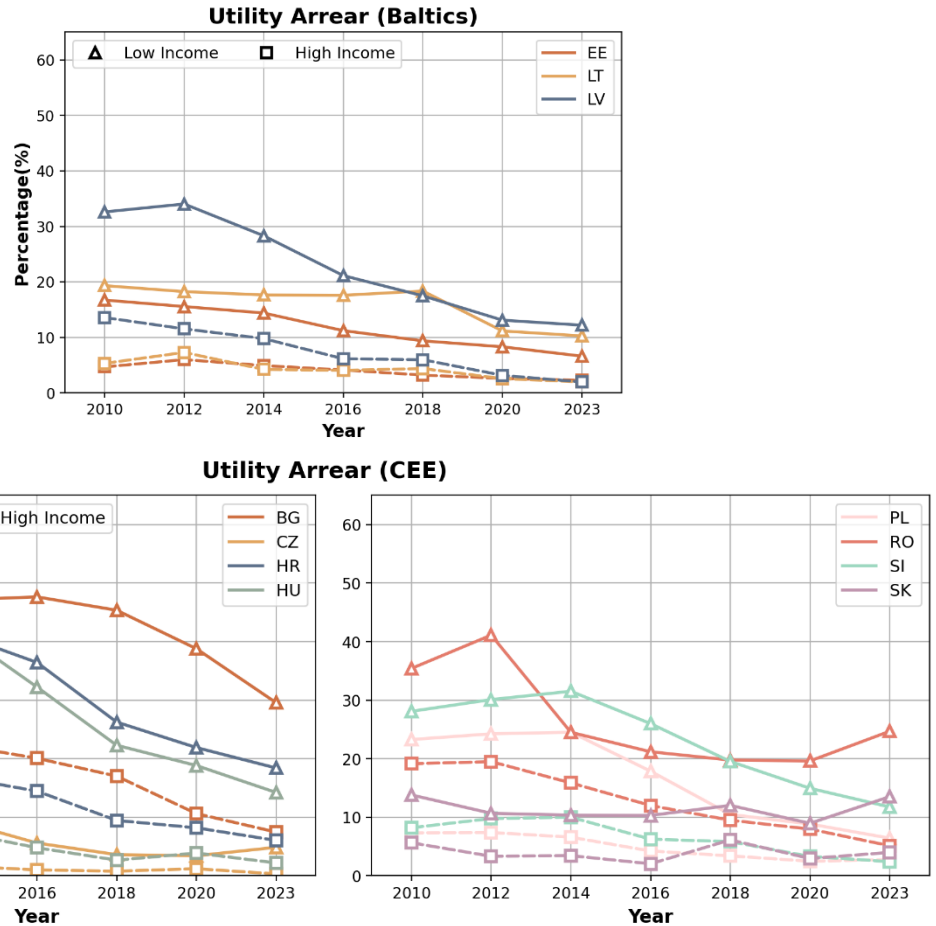


Figure 5.74 Trends in prevalence of utility arrear across Eastern European countries by income 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. Note that reliability of household income data from Hungary between 2018-2021 are currently being debated.

Figure 75 shows the changes in the prevalence of utility arrears by tenure status between years 2010 and 2023 in Eastern Europe. In all countries, with the exception of Poland and Slovakia, there is a decrease in all tenure statuses. The largest difference within each country is found among the market-rate renters in Bulgaria (23.3%p) and Czech Republic (5.6%p), mortgage homeowners in Croatia (28.5%p), reduced-rate renters in Romania (41.7%p) and market-rate renters in Slovenia (22.5%p). In Hungary, mortgage homeowners, market- and reduced-rate renters experience less utility arrears to a similar extent, all almost 25%. In Poland and Slovakia, there is a decrease in all tenure statuses except for the reduced-rate rent, which increases by 7.8%p in Poland and 12.6%p in Slovakia.



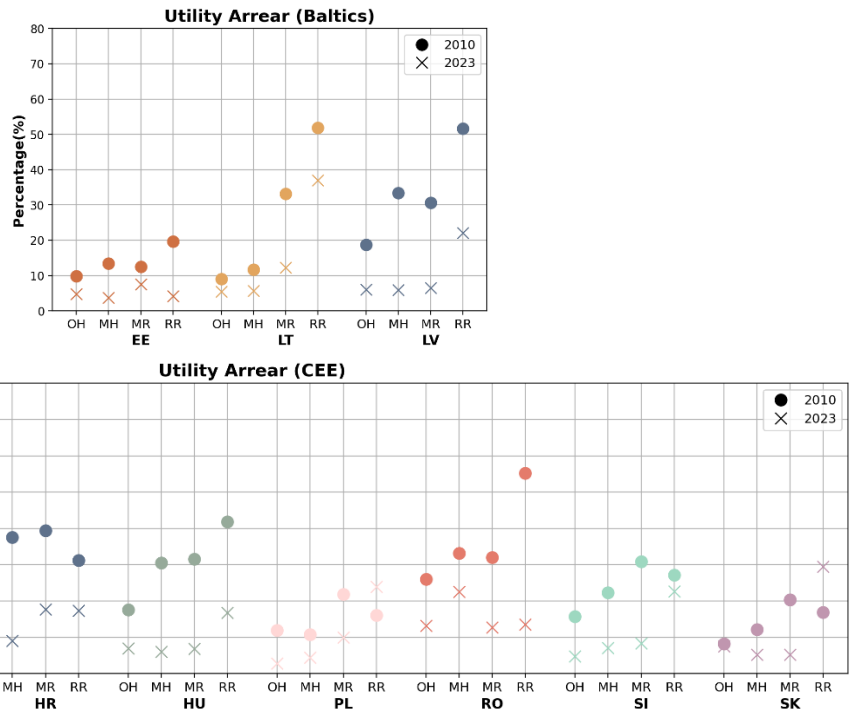


Figure 5.75 Changes in prevalence of utility arrear across Eastern European countries by tenure 2010-2023 (%)

Note: CEE refers to Central Eastern Europe. OH=Outright Homeowners, MH=Mortgage Homeowners, MR=Market Rent, RR=Reduced Rent.

5.5.3 Summary

Between 2010 and 2023, heating unaffordability — used as a measure of energy poverty — remained a significant issue across Europe, particularly for low-income households and renters. Even in countries with a generally low housing unaffordability rate (notably Northern and Western European countries), many countries observed a slight increase after 2020. While individuals in high-income households generally experienced low and stable unaffordability rates, Lithuania and Bulgaria stood out due to their high level of heating unaffordability, even among individuals in high-income households. Furthermore, while a large gap between the two income groups remained in Bulgaria, Lithuania showed a distinct pattern where changes over time were led by high-income individuals. In Lithuania, the housing unaffordability rate remained relatively stable over time for



low-income respondents, but fluctuated considerably for high-income respondents. Moreover, Cyprus, Greece, and Portugal exhibited significant income-based disparities. By tenure status, reduced-rate renters were consistently the most affected, with notable increases in countries such as the Netherlands, Denmark, Greece, Portugal and Slovakia. In contrast, Cyprus and several Eastern European countries (e.g., Lithuania, Latvia and Bulgaria) saw improvements across most tenure statuses. In Spain and France, both market- and reduced-rate renters found heating more difficult to afford.

We observed significant regional differences in terms of utility arrears. It remained relatively low and stable in Northern and Western Europe (with the exception of Ireland), in contrast to the fluctuations and high levels of utility arrears as well as the overall decline, in Southern and Eastern Europe (with the exception of Greece, which has seen a sharp increase in recent years). Low-income respondents consistently faced higher arrears, with the gap between income groups narrowing in some countries due to improvements among low-income households. Greece is a notable outlier, with relatively high arrears for high-income respondents, but also a widening gap in recent years due to a sharp increase among low-income respondents. Slight increases in recent years in Conservative-corporatist unitary rental market countries were driven by low-income respondents, while the slight increase in Luxembourg was driven by high-income respondents. Among countries experiencing substantial changes over time, all tenure statuses exhibited similar patterns (either increasing or decreasing). However, Poland and Slovakia are two notable outliers, where arrears increased for reduced-rate renters while decreasing for all other tenure statuses.

Overall, the data reveal that energy poverty remains a key issue in Southern and Eastern Europe and that more attention is needed for Northern and Western Europe, especially for low-income respondents households and renters. The data demonstrate how the sharp increase in energy prices in recent years (FEANTSA, 2024) has affected households differently depending on their income level and whether they are homeowners or renters.



5.6 Conclusion

This chapter examined trends in five key housing problems (i.e. affordability, quality, overcrowding, security and energy poverty) between 2010 and 2023 across Europe. The analysis focused on seven indicators: objective overburden, subjective burden, housing deprivation, rent or mortgage arrears, heating affordability and utility arrears. We found diverging trends in Europe's housing market, mainly driven by low-income households and renters.

Overall, social-democratic unitary rental market countries showed a generally low and stable level of the housing problems observed in this chapter, with the exception of the objective overburden rate. While the conservative-corporatist unitary rental market countries showed similar patterns to social-democratic countries in many problems, variations were observed within this regime with regard to affordability and quality issues. Germany tends to have a relatively high level of objective overburden rate, while France has a relatively high subjective burden rate and rate of housing deprivation. Austria, on the other hand, has experienced a sharp increase in the overburden rate in recent years. North-Western European dual rental market countries demonstrated substantial differences in most housing problems across countries. This calls for closer examination of what constitutes a dual rental market regime, as different outcomes may be due to variations in individual attributes. Norway, in particular, has more in common with social-democratic countries than countries in the dual rental market regime.

Southern and Eastern Europe experienced more dramatic shifts. Greece stands out in Southern Europe with its high objective overburden rate and high level of (both) arrears, albeit with fluctuations over time and declines in rent or mortgage arrears. This suggests that housing costs are a significant issue in Greece, endangering the housing security of its population. This further explains its high rate of overcrowding, which is potentially related to intergenerational co-

residence (see Dagkouli-Kyriakoglou, 2018). Conversely, Cyprus and Portugal showed persistently poor housing quality, which may explain their high heating unaffordability rates and utility arrears (for Cyprus's case), albeit with a decline over time. By contrast, most Eastern European countries showed overall improvements in the observed housing problems over time. Housing quality improved substantially in particular (with the exception of Slovakia and the Czech Republic, which already had better housing quality than the rest), reaching a level similar to that in some Western countries, such as Belgium, Luxembourg, France and Germany. Overall improvements in utility arrears are likely to be related to housing quality and, consequently, improvements in subjective burden. Despite sharp declines in some countries, especially between 2010 and 2012, overcrowding has remained a persistent issue in Eastern European countries.

Across Europe, individuals in low-income households consistently bore the brunt of housing problems. These respondents face higher rates of housing cost overburden, poor housing quality, housing insecurity, overcrowding, and energy poverty. By contrast, high-income respondents were generally insulated from these issues, with cost overburden rates typically below 3%. However, subjective housing cost burdens have risen even among high-income respondents in many countries. While a certain level of housing deprivation persists among high-income groups, notable improvements in housing deprivation among low-income groups in Eastern Europe have narrowed income-based disparities. In Northern and Western European countries, income level was a key determining factor in overcrowding, while in some Southern and Eastern European countries, overcrowding at a high level implies other contributing factors besides income. Some Eastern European countries and Greece have a relatively high level of energy poverty among high-income respondents, which has declined over time. Nevertheless, the persistence of high burdens among low-income respondents across housing problems underscores inequality in the European housing market.

Examining the trend by tenure status revealed nuances that varied across countries. Renters, especially those in reduced-rate rental housing, were more vulnerable across all observed indicators. In contrast, outright homeowners generally fared better, with mortgage homeowners showing mixed results depending on the country and indicator. The Netherlands, Ireland, the UK and Spain are good examples of these opposing patterns between homeowners and renters when it comes to overburden rate. Furthermore, discrepancies were found between market- and reduced-rate renters. In some cases, market-rate renters fare better over time, while the housing situation for reduced-rate renters worsens (e.g. overburden in Spain, Malta, Lithuania; subjective burden in Portugal; housing deprivation in Slovakia; overcrowding in Portugal and Slovakia; renter/mortgage arrears in Norway, Portugal, Slovakia; heating affordability in Portugal, Slovenia; and utility arrears in Poland and Slovakia). This may be due to the residualisation of social housing or state intervention in housing issues (Angel, 2023). Slovakia, in particular, stands out for its worsening situation for reduced-rate renters over time. Conversely, there have been cases where the situation has improved for reduced-rate renters but worsened for market-rate renters (e.g., overburden in Estonia; subjective burden in Ireland; housing deprivation in Cyprus and Bulgaria; overcrowding in Ireland; and heating affordability in Ireland). This may be due to deregulation and increased housing costs in the private rental sector in most countries (EUROFOUND, 2023). Ireland stands out as a typical example of a worsening situation for market renters. These patterns highlight nuanced changes in each country that could be obscured by aggregate data, revealing how housing problems in Europe have primarily affected renters over time.



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