



## **Housing, Neighborhoods and Inequality**

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## Abstract

This chapter provides an up-to-date review of the literature on housing, inequality, and neighborhoods while highlighting their many intersections. Inequality across and within countries is generally high and growing, particularly in terms of wealth. Levels and trends in inequality depend on multiple factors, such as institutions and varying exposure to shocks, and cannot be understood without accounting for the role of housing. Housing is a major component of households' expenditures and the most important and evenly distributed asset in the population. Moreover, regional inequalities may not be as severe as they initially appear after accounting for differences in housing costs across geographies. Conversely, the negative outlook on these inequalities may be exacerbated when considering the implications of households' uneven sorting within cities – with the most disadvantaged individuals predominantly residing in neighborhoods with lower-quality local public goods and amenities. Sorting endogenously arises due to multiple factors and impacts the dynamics and persistence of inequality through neighborhood effects, with schools playing a crucial role. National housing policies and interventions at the local level can help revert segregation and undesirable inequality dynamics. Housing allowances, tax incentives to build affordable housing in high-income neighborhoods, and school desegregation policies appear to be the most promising avenues to that goal.

## Introduction

Inequality has gained momentum in recent years in the public and academic debate. That discussion is often centered on national-level inequality, although disparities between and within regions and cities may be even starker. In that regard, the contribution of housing and neighborhoods to understanding inequality is often not emphasized enough. Housing is a major component of household consumption and wealth and, at the same time, the “door of entry” to neighborhoods. Neighborhoods affect us in many ways and may have the key to thriving in life. As such, they have substantial implications for the dynamics and persistence of inequalities. As with the public debate, the academic discussion on housing, inequality, and neighborhoods has proliferated. It is, however, uncommon to see the three of them connected.

This handbook chapter offers the most up-to-date review of the literature on housing, neighborhoods, and inequality while highlighting the many dots that tie the three of them together and pointing out avenues for future research.

The chapter starts by providing some basic definitions and clarifying methodological concepts about the measurement of income and wealth. With the lightest-possible toolkit equipped, it reviews the extensive literature analyzing income and wealth inequality and their trends.

Inequality is high and growing, particularly in terms of wealth. Recent estimates suggest that the global top 10% of the population captures 52% of the world’s income and as much as 76% of global wealth. In contrast, the bottom 50% only earns and owns 8.5 and 2% of worldwide income and wealth, respectively. Despite these numbers, global income inequality across countries has decreased in the past decades – primarily due to the rise of China. However, income and wealth inequality within countries has generally increased since the 1980s.

Some countries are more unequal than others. While European – particularly Northern European – countries are relatively equal, Latin-American and African countries are highly unequal. These patterns are also reflected in recent trends. Differences in initial conditions, institutions, exposure to shocks, and policies help explain cross-country heterogeneities in inequality trajectories.

Regions, cities, and neighborhoods are themselves unequal. We know significantly less about within-country inequalities and trends, but we are aware that they exist and are substantial, particularly in large cities. There are several underlying factors explaining levels and trends, but, at the core, there is the fact that individuals and firms sort unevenly across and within cities.

Before analyzing the causes and consequences of sorting, the chapter takes a detour to explore the role of housing in understanding inequality. Section 2 discusses the role of housing as a source of income, cost, capital asset, and consumption good. Housing is crucial to understand income inequality, as housing expenditures (or imputed rents) take up

a significant fraction of households' income. It is even more essential to understand wealth inequality, as housing is the most evenly distributed asset across the entire wealth distribution.

The chapter then discusses a strand of work arguing that even though nominal inequalities across cities appear large, *real* (or net of housing) inequalities are not as severe as differences in the cost of living are significant across locations.

The section ends by discussing the role of housing as a consumption good. Uneven sorting hurts poorer households, who are predominantly located in neighborhoods with fewer amenities and lower-quality local public goods, despite still paying high housing costs.

Section 3 investigates the causes and consequences of sorting in detail. It first reviews the extensive evidence, predominantly from the United States (US), showing how and why households sort across space based on income, race, and preferences – thus resulting in segregated neighborhoods on these dimensions.

Racial and income segregation in the US increased significantly during the Great Migration and over the past three decades. The literature has attributed these dynamics to several factors, including preferences for homophily (in terms of income and race) and tipping points, heterogeneity in preferences for safety and other amenities and public goods, and commuting costs. Housing has also had a predominant role in terms of durability, homeownership rates, and land use regulations.

Neighborhoods drive economic inequality and social mobility. The section concludes by quickly reviewing the extensive evidence on neighborhood effects, which span a wide array of outcomes. One of these outcomes is social mobility, which critically depends on local schools' quality. As poorer households locate in low-quality school districts, segregation amplifies inequalities and dampens social mobility.

The final section of the handbook, Section 4, reviews the role of housing policies in addressing inequality and segregation challenges. It briefly zooms out back to the national level to consider their general implications for inequality and incidence in, for example, house prices. It then zooms in back to the neighborhood level and review their effects on segregation and other outcomes.

National housing policies have an impact on inequality. Evidence suggests that housing allowances and tax incentives for developers and landlords to provide affordable housing might be the most effective in achieving redistributive goals. In contrast, mortgage tax deductions are unambiguously regressive. Either way, the policy specifics and other parameters, such as the housing supply elasticity, are crucial to quantify their exact impact and incidence.

The section, and the handbook chapter, concludes by reviewing local policies attempting to alleviate segregation. It discusses several policies, including rent control, public housing, housing vouchers, and reforms to school districts. Some versions of public housing and

policies desegregating schools appear to be the most effective in combating segregation and undesirable social mobility dynamics.

## Main Text

### **1 Inequality in income and wealth**

#### **1.1 Definitions and measurement methods**

##### **1.1.1 Definitions: inequality, income, and wealth**

The Gini index is the most widely used measure of inequality. It summarizes dispersion in a distribution with a number between 0 and 1, with 0 reflecting “income” evenly distributed in a population and 1 reflecting a situation with one individual capturing all income. Some argue that the Gini is hard to interpret and does not capture dynamics well (e.g., the Gini could increase because the top percentiles increased their income or because the middle of the distribution hollowed out). For that, it is increasingly common to find studies using “shares” (e.g., the share of income captured by the top 10%) or “ratios” (e.g., the 90/10 ratio captures the relative difference in income between an individual in the 90th percentile compared to another in the 10th). See Cowell (2011) for an overview of the most common inequality measures and their properties.

Current income is the most common variable studied. That is partly due to data availability (current income is easier to measure than wealth or permanent income), and partly because we think it constitutes a good proxy for welfare. Researchers and policymakers often use different definitions of “income.” For example, the World Inequality Lab (WIL) typically uses “post-replacement, pre-income tax” income as their benchmark definition for income. Our discussion on worldwide income inequality in the next section is based on their results using this measure. Other institutions use pre-tax income or disposable income. It is essential to be aware of the specific metric used, as different definitions can lead to very different conclusions, especially in countries with high state capacity and redistribution. Wealth is another object of broad interest in the policy debate. As highlighted in the next section, it is difficult to measure, and current estimates are subject to multiple concerns. For example, the definition of wealth may include private pension plans, but it typically does not account for pension rights.

##### **1.1.2 Measuring income and wealth inequality**

Income inequality estimates are the most widely available across the globe. Several institutions and individual researchers have measured the state and trends in income inequality using a wide array of data sources and methodologies. It is worth mentioning the

World Inequality Database (WID) by the WIL, the Luxembourg Income Study (LIS) by the Luxembourg Institute of Socio-Economic Research (LISER), the World Income Inequality Database (WIID) by the United Nations (UNU-WIDER), the work by the Organization for Economic Cooperation and Development (OECD) (OECD, 2022a), and the Standardized World Income Inequality Database (SWIID) by Solt (2016, 2020). These all constitute invaluable resources to policymakers and researchers on income inequality. Most of these institutions use a combination of household surveys and (linked) administrative tax records to estimate inequality. A problem with surveys is that top-income earners are underrepresented, and capital income is not as well measured. In response, researchers at the WIL introduced the Distributional National Accounts (DINA) methodology (Alvaredo et al., 2020), which combines the previous sources with aggregate statistics to fully distribute national (capital and labor) income across the population. The DINA methodology has provided a benchmark to measure inequality consistently across the globe and is quickly becoming the gold standard in inequality research.

Our knowledge about wealth inequality is significantly more limited, and its measurement is more subject to concerns. The recent literature has primarily relied on five data sources and methods to estimate wealth inequality today and in the long run: surveys (Kuhn et al., 2020), returns from income or estate taxes (Lundberg and Waldenström, 2018), inheritances (Alvaredo et al., 2018), returns from wealth taxes (Jakobsen et al., 2020), and rich lists (Klass et al., 2006). Each data source and method has its strengths and weaknesses (see Kopczuk (2015) for an accessible overview of them). For example, it seems that administrative wealth tax data should be the gold standard to measure wealth. However, not many countries have a wealth tax and, when they do, they often have high exemption thresholds and deductions that make most households with positive wealth tax exempt. For example, the wealth tax in Spain (*impuesto sobre el patrimonio*) has an exemption for the first 700,000 euros of net wealth and a 300,000-euro deduction for the main residence. With these deductions, less than 0.5% of the population pay this tax (Agencia Tributaria, 2020). In addition, asset valuation and tax evasion (more prevalent at the very top of the distribution) are crucial, and assumptions on these items can largely influence inequality estimates (Alstadsæter et al., 2019). Most of the results discussed below are based on the DINA methodology introduced by WIL researchers, which combines survey and administrative tax data and macroeconomic balance sheets (Alvaredo et al., 2020).

There are several open avenues for future research on income and wealth inequality measurement. For income inequality, one could think about the spatial distribution of local public goods and amenities. Some individuals can benefit from better schools, hospitals, or government services because they own or rent a dwelling in a good city or neighborhood. These inequalities are not accounted for in current measures of income inequality. The work by Domènech-Arurí et al. (2022), measuring housing value inequalities across geographies, goes in this direction. For wealth, one could think of incorporating pension rights into existing measurements (currently, only private pension plans are included in some of the estimates). These are crucial throughout wealth distribution. For the very top, as Zucman (2019) suggests, one could look at new data sources such as leaks from financial institutions, tax amnesties, or macroeconomic statistics of tax havens to better gauge the magnitude of billionaires' wealth.

## **1.2 From country-level to neighborhood-level inequality**

### **1.2.1 Inequality across countries**

Income inequality is high, but some countries and regions are more unequal than others. According to Chancel et al. (2021), 10% of the global population takes 52% of global income. In contrast, the bottom 50% earns 8.5% of it. These are worldwide figures that hide significant heterogeneity. While the top 10% “only” earn 35% of the income in Europe, they capture close to 60% of the income in the Middle East, Africa, and Latin America. Similarly, the bottom 50% capture almost 20% of the income in Europe, but less than 10% in the Middle East, Africa, or Latin America. A more thorough inspection of these world regions reveals significant heterogeneities. For example, while Europe is the least unequal region in the World overall, differences are substantial when comparing Scandinavian countries (the least unequal in the World) with the South or East of Europe (Morgan and Neef, 2020).

Wealth concentration is even more extreme. While the poorest half of the world population only owns 2% of the global wealth, the top 10% owns 76% of the total (Chancel et al., 2021). That image is even starker when looking at the top 0.1%, who own 11% of the total wealth. These super-rich individuals possess their wealth mainly in financial assets, in contrast with those in the rest of the distribution (whose primary source of wealth is real estate). The asset composition pattern is similar worldwide, but, as with income, there is substantial across and within-region heterogeneity in the levels of inequality, with Europe being the least unequal world region (For example, the top 1% owns 25% of the wealth in Europe. The same figure is 46% in Latin America).

Although overall worldwide inequality has decreased in recent decades (primarily due to the rise of China), within-country inequalities have generally increased since the 1980s, ending 40 years of declining trends in the aftermath of the Second World War (WW2) (Piketty and Zucman, 2014, Bosmans et al., 2014, Saez and Zucman, 2016, Piketty and Saez, 2014, Bauluz, 2019, Alvaredo et al., 2013). Recent research has produced long-run series (starting as early as 1700) of income and wealth inequality worldwide. Inequality was high and relatively stable at the beginning of the twentieth century. It decreased in the inter-war period and especially after WW2. The trend has reverted since 1980. These trends have been similar in most Western countries, although the recent acceleration has been more pronounced in some countries (e.g., in the US).

There is extensive literature studying the determinants and dynamics of inequality. One of the first explanations was the Kuznets curve hypothesis (Kuznets, 1955), under which inequality dynamics would exhibit an inverted U-shaped pattern going hand-in-hand with the economic development process. Since then, the literature has dismissed this view of inequality as a quasi-deterministic process. Data availability and the differences in the trends and levels exhibited by, for example, the US and Europe (both highly developed regions) are inconsistent with the hypothesis. Market forces and policy ought to play a role. A large

portion of the recent literature focuses on understanding the widely documented increases in income inequality since the 1980s, emphasizing wage inequality (Except at the very top, labor is the primary source of income throughout the distribution. There is a large separate literature on top incomes. See [Alvaredo et al. \(2013\)](#) for a review).

The literature has identified several factors explaining the increased dispersion in earnings since the 1980s, particularly in high-income countries. On the one hand, college wage premiums have increased substantially due to demand for skilled labor outgrowing supply and the complementarities between cognitive skills and technology (Berman et al., 1998, Autor, 2014). Some argue that college wage premiums alone can account for up to 70% of the increased dispersion in earnings (Goldin and Katz, 2010, Lemieux, 2006). These have increased more and are substantially higher in the US relative to other industrialized nations (Hanushek et al. (2015) estimate the US has the largest skill premium among the industrialized nations (at 28%). For reference, the same figure is 15% in Sweden). On the other hand, real wages for non-college-graduates have stagnated in recent decades due to several reasons, including trade and globalization (outsourcing of manufacturing jobs to developing countries) (Autor et al., 2016, Feenstra and Hanson, 1996), and institutions such as unions or minimum wage policies (Card et al., 2017, Western and Rosenfeld, 2011, Teulings, 2003, DiNardo and Lemieux, 1997). Finally, since the 1990s, automation has contributed to job polarization, “hollowing out” many jobs previously in the middle of the wage distribution (Autor et al., 2008, Goos et al., 2009, Van Reenen, 2011, Acemoglu and Restrepo, 2019).

Initial conditions and the dynamics of income inequality are both crucial to understand the evolution of wealth inequality. As previously discussed, wealth concentration is substantially higher than income (Chancel et al., 2021). Thus, in a situation in which returns to capital exceed those from income, wealth inequality is poised to follow explosive dynamics Piketty (2014). Self-perpetuating factors are part of the story, particularly for those at the top. For most individuals in the rest of the wealth distribution, whose wealth is mainly in the form of real estate, house prices play an important role. Thus, in high homeownership countries, housing booms or stock market busts would typically reduce wealth inequality (Martínez-Toledano, 2020).

### **1.2.2 Inequality within countries**

Individuals are not evenly distributed within a country. That creates inequality across regions and cities. Unfortunately, our knowledge about these inequalities is severely hampered as soon as we go underneath country borders, particularly in middle and low-income countries where data is scant, commonly highly aggregated, and its quality is often a cause for concern. In response, recent work has sought alternative methods to characterize income and its dispersion in developing regions. An example is night lights data (Henderson et al., 2012, Jean et al., 2016). For high-income countries, data quality is significantly better, and recent work has strongly emphasized granularity, particularly in light of the now-recognized significance of local environments (see Section 3.2). For example, in the US, the Opportunity Atlas offers a great resource to visualize and study inequality and



social mobility at the local level (Chetty et al., 2018). In Belgium, Domènech-Arumí et al. (2022) uses the granularity of cadastral data to study housing inequality at multiple levels of aggregation, from the nation and down to the local neighborhood level (Domènech-Arumí, 2022). Similar approaches exploiting granular data to document inequalities within countries (across and within regions and cities) offer a promising avenue for future research on, for example, neighborhood effects.

People and firms sort across regions and cities based on multiple factors. These include industry composition, human capital, amenities, the housing market, and demographics. The interactions between them in agglomeration economies – productive people and firms are more productive if they are close to one another – is a major force driving sorting (Puga, 2010, Eeckhout et al., 2014, Behrens et al., 2014). These externalities raise income in some geographies more than others (e.g., small towns versus large cities), which, combined with sorting on skill and productivity, naturally create inequality between regions and cities (Glaeser et al., 2009, Baum-Snow and Pavan, 2013, Baum-Snow et al., 2018). See Behrens and Robert-Nicoud (2015) and Combes and Gobillon (2015) for an overview of the theory and empirics of agglomeration and sorting.

The extent of agglomeration economies and inequality dynamics vary with specific circumstances, initial conditions, and local industry composition. For example, Detroit was once a thriving city thanks to the car industry (General Motors and Chrysler have their headquarters there). High wages in manufacturing and the automotive sector in expansion made that possible. However, with the fall in real wages in routine-task jobs (such as those in manufacturing) accelerating in the 1990s and the automobile crisis in the late 2000s, Detroit's economic status quickly entered a downward spiral (David et al., 2013, David and Dorn, 2013). The other side of the coin is Silicon Valley, which specialized in the tech industry and had a large pool of skilled individuals that spurred innovation and made the Bay area (and those working in the tech industry) thrive (Kerr and Kominers, 2015). Thus, because the industry composition and the pool of human capital are fixed in the short run, regional and city diversification across industries (or lack thereof) is crucial to explain the rise and fall of cities in response to shocks (e.g., international trade) (Autor et al., 2016).

Finally, cities themselves are unequal. People sort across and within neighborhoods based on income, race, origin, local public goods, amenities, and other characteristics. This sorting generates inequality by design. More problematic is that this sorting (and segregation in particular) has significant implications on long-term education and labor market outcomes and, consequently, social mobility and inequality dynamics. Section 3.2 discusses these implications. Before that, the handbook takes a small detour to properly introduce housing, which is crucial to enrich our perspectives on inequality and a better understanding of sorting.

## **2 Inequality and housing**

### **2.1 Housing as a source of income: rents and imputed rents**

The most straightforward approach to studying the contribution of housing to inequalities is to treat it as a source of income. Indeed, the rent paid by tenants and received by their landlords is often subject to income tax. Landlords typically constitute a small share of the population (André and Meslin, 2021). As rental income is more unevenly distributed than labor income, it effectively contributes to increasing income inequality. Most existing measures of income inequality account for rental yields received by landlords.

Owner-occupiers and imputed rents are often left out of the picture and inequality estimates. While rental yields are an important component of fiscal revenues and are commonly accounted for in inequality indicators, the rent saved by homeowners is often absent. However, homeowners' rent savings (i.e., imputed rents) represent a significant share of their income and consumption. They also represent a substantial share of national income, especially in countries with high homeownership. For example, Botey and Chapelle (2020) estimate that imputed rents represent 7% of the French Net National Income. Given the size, the inclusion (or not) of imputed rents (or the rent saved by subsidized housing beneficiaries) impacts inequality estimates.

Several cross-sectional studies have tried to estimate the contribution of imputed rents to income inequality. For example, Frick and Grabka (2003) and Frick et al. (2010) show that in several high-income countries, including the US, accounting for imputed rents in disposable income leads to a decline in estimated levels of poverty and inequalities. These results have been partially confirmed in France, where homeowners and social tenants constitute a significant share of households (Driant and Jacquot, 2005, Baclet and Raynaud, 2008). These findings are intuitive as housing capital is more evenly spread across the income distribution relative to other sources of capital income (Garbinti et al., 2021). Moreover, social housing programs represent large in-kind subsidies concentrated at the bottom of the income distribution (Trevien, 2014, Eerola and Saarimaa, 2018). Recent methodologies to measure income inequality, such as the DINA, account for the contribution of imputed rents (Piketty et al., 2018), while in-kind benefits associated with access to social housing often remain out of the scope of post-distribution inequality estimates. A regular observation from national accounts data is that while housing prices increased over the 2000s in several countries, rents remained relatively stable, limiting their contribution to income inequalities (Friggit, 2016, Bonnet et al., 2014).

## **2.2 Housing as a cost: from nominal to real income**

Another stream of literature treats housing as a consumption good rather than a source of income. The role of housing in consumption appears particularly important as it (i.e., rents and imputed rents) represents a sizeable share of households' expenditures, oscillating between 10 and 30% of total consumption in OECD countries (OECD, 2022b). This approach provides several new insights to assess the role of housing when measuring inequalities.

Several papers highlight that the cost of housing matters when measuring inequalities in *real* terms. This literature applies the same reasoning as when performing cross-country comparisons. Estimated income inequalities are often large in nominal terms but become

smaller when adjusting for local price variations using Purchasing Power Parity (PPP) (Almås, 2012), in the same fashion that differences in exchange rates tend to overestimate inequalities between countries. In its seminal contribution, Moretti (2013) applies this reasoning to compare the purchasing power of wages between US Metropolitan Statistical Areas (MSA). In a nutshell, he substitutes the housing component in the US Consumer Price Index (CPI) for a location-specific index based on local rents and prices. He finds that changes in housing costs lead to overestimating wage inequalities as more expensive cities simultaneously concentrate higher wages and faster-growing housing costs. These would imply lower consumption and utility inequalities than previously documented, as college graduates (with higher wages) are located in the most expensive cities (where demand for their skills is higher). Thus, considering housing expenditures, the conclusion is that existing measures would overestimate real inequalities. In the French context, Carbonnier (2021) applied a slightly different methodology and built local price deflators based on self-declared minimum income (to live “decently”). As Moretti (2013), the author finds that not accounting for price differentials leads to an overestimation of within-country inequalities, but also to an underestimation of the poverty rate.

Other studies qualify the role of housing as a mechanism for alleviating nominal inequalities. Albouy et al. (2016) uses a spatial equilibrium model in the spirit of Rosen (1979) and Roback (1982) and adds non-homothetic preferences to account for the fact that the share of housing consumption is higher among poorer households. The authors carefully investigate how rising housing costs affect households’ housing burdens differently depending on their position in the income distribution. They argue that while the divergence in housing costs between cities reduced real income inequalities, the nationwide rise in housing costs disproportionately affected poor tenants, thus contributing to increases in real income inequality.

## **2.3 Housing as a capital good**

Housing is both a consumption and capital good. Thus, its price variation generates substantial capital gains or losses and changes in the composition of wealth. In a series of contributions, Piketty (2014) and Piketty and Zucman (2014) noted that several western countries such as France, the United Kingdom (UK) or Canada had experienced large rises in their wealth-to-income ratios in recent decades. Piketty (2014) warns that this situation, combined with capital returns being greater than those from income ( $r > g$ ), could lead to a substantive increase in wealth inequality. Since then, recent work has noted that increases in house prices, and land, are primarily responsible for the rise in capital-to-income ratios observed since the early 2000s (Knoll et al., 2017, Bonnet et al., 2014, 2015, Friggit, 2016). This discussion has generated renewed interest in comprehending the impact of rising house prices on inequality dynamics.

### **2.3.1 House prices and wealth inequality**

Rising house prices naturally raise questions about their influence on wealth inequality, which depends on: first, the homeownership rate; second, the submarkets affected by this rise; and third, the distribution of housing wealth relative to other types of wealth.

Rising house prices only benefit the owners of housing wealth. In countries with high homeownership rates (such as France, the US, or the UK), homeowners become relatively wealthier than tenants when prices rise, thus increasing wealth inequality. In addition, since older households are more likely to own their homes, rising prices also increase inter-generational wealth inequality. That is what Botey and Chapelle (2020) finds for France. The authors estimate the primary gains of the rise in house prices from the early 2000s accrued to older homeowners, while younger households might have been harmed through rent increases. Finally, for the same reason, rising house prices also exacerbate wealth inequalities between the middle class, predominantly homeowners, and the poorest, who are likelier to be tenants in the public or private housing sector.

Heterogeneity across submarkets in the rise of house prices may have important implications for wealth inequality when sorting is substantial. For example, recent work has highlighted that house prices have grown less in predominately Black neighborhoods in the US, thus exacerbating the White-Black racial wealth gap (Akbar et al., 2019).

Finally, rising house prices change the composition of wealth, increasing the share of housing and developed land in national wealth accounts. For example, in France and the UK, the recent housing boom pushed housing wealth to represent over 50% of national wealth in 2010, up from 25% in 1990. Housing is the most evenly distributed type of capital as most households own their house (Garbinti et al., 2021). Consequently, rising housing prices can reduce wealth inequalities. In Europe and the US, this effect tends to dominate the two previously documented as rising house prices improve the position of the middle class relative to the wealthiest (whose asset portfolios are dominated by financial assets) (Bonnet et al., 2014, Carbonnier, 2015). Blanchet and Martínez-Toledano (2022) confirms this intuition showing that wealth inequalities did not rise as much in Europe as in the US due to housing representing a larger share of total wealth. Kindermann and Kohls (2016), Kaas et al. (2019) and Aladangady et al. (2017) reach similar conclusions focusing in the Eurozone and the US, respectively.

### **2.3.2 Capital gains and the wealth effect**

Capital gains can affect consumption inequalities through wealth effects. Properly quantifying their magnitude remains an open question. While some studies argue that wealth effects are negligible (Calomiris et al., 2009), others find significant effects on consumption (Paiella and Pistaferri, 2017). The limited role of wealth effects may be a consequence of homeowners typically not refinancing their mortgages or reselling their homes (for example, using reverse mortgages) to boost consumption (Bonnet et al., 2014, 2015).

Overall, rising housing values generate capital gains that do not seem to contribute to income inequality. They tend to reduce wealth inequality (especially in high homeownership

countries) as real estate capital is more evenly distributed than financial assets. Conversely, housing busts tend to be associated with rising inequalities as wealthier households are less exposed to housing and have a higher ability to reshuffle their assets (Martínez-Toledano, 2020).

## **2.4 Housing as a consumption good**

Housing is a merit good; therefore, consuming a suboptimal amount of housing generates suboptimal allocations and affects inequalities. For example, the underconsumption of housing space (surface) causes overcrowding, which might negatively impact children's educational outcomes (Goux and Maurin, 2005). Also, consuming poor-quality housing might negatively affect health.

Inequality in housing consumption has increased in recent years. Aladangady et al. (2017) measures inequalities in housing consumption accounting for the fact that housing is a composite good that combines land, associated with utility derived from the location (e.g., amenities), and a housing structure (i.e., the surface and quality of the dwelling) that provides shelter. Their results suggest that housing consumption inequalities in the US decreased after WW2 but have risen since the 1980s. These inequalities appear to be driven by the relative location of dwellings within cities (across neighborhoods). A similar pattern emerges in France, where dwellings in central cities have appreciated significantly more than those in the suburbs. Thus, increased polarization in the urban space between cheap and expensive inequalities has strengthened inequality in housing consumption.

In summary, even if the divergence in housing costs between urban and rural areas might, at first, suggest that real income inequalities are lower, a closer inspection of housing costs within cities and accounting for the utility derived from location tempers this view. The global rise in housing costs affects the poorest households disproportionately. They spend a larger share on housing, are more likely to be tenants, and have limited access to the best opportunity-enhancing amenities and local public goods, as discussed in the next section.

# **3 Neighborhoods, inequality, and opportunities**

## **3.1 Inequality and neighborhood sorting**

### **3.1.1 Unequal cities**

Larger cities are associated with more unequal income distributions as they tend to gather workers with a wider variety of skill sets that are rewarded differently (also conditioning on skill) (Glaeser et al., 2009, Baum-Snow and Pavan, 2013). The diversity of households with different income levels, socio-economic characteristics, or ethnic backgrounds naturally raises the question of their place of residence as within-city inequality between census tracks

has increased in the past decades (Massey et al., 2003, Watson, 2009, Fogli and Guerrieri, 2019).

### **3.1.2 From income inequality to spatial segregation**

Households sort across and within neighborhoods based on income, ethnic group, and sociodemographic characteristics (Bayer et al., 2004). As exposed in Straszheim (1987), this fact is absent from the most straightforward formulation of the monocentric city model, which constitutes the seminal framework in urban economics (Alonso, 1964, Muth, 1969, Mills, 1972). In this model, homogeneous agents with the same preferences and income spread across the city and share the same utility as lower housing prices compensate for higher commuting costs, resulting in a single bid rent function. Subsequent work has enriched this framework to understand sorting mechanisms. These newer models introduce variations of bid rents that arise due to differences in income, preferences, or employment status (Brueckner et al., 1999, Wasmer and Zenou, 2002, 2006), and also due to homophily or aversion for out-group individuals (Rose-Ackerman, 1975). In these tweaked frameworks, sorting arises as an outcome as “neighborhoods” become occupied by the group offering the highest bid. Thus, incorporating heterogeneity in agents’ income and preferences can generate sorting between groups in a theoretical framework (Straszheim, 1987).

Segregation patterns relative to the distance to the city center depend on different parameters. These are the relative commuting costs between groups, amenities, or neighborhoods’ racial and income composition. For example, Brueckner et al. (1999) argues that sorting patterns differ between US and European cities because of differences in permanent amenities (e.g., historical monuments), which are more present in European downtowns. Consequently, high-income individuals are more likely to locate in the center of European cities. Similarly, Waldfogel (2008) argues that retail and restaurants (non-durable amenities) also contribute to segregation.

Recent empirical work has confirmed the role of group preferences for amenities, proximity to peers, and heterogeneity in commuting costs in explaining sorting within cities (Bayer et al., 2007, 2014, Gaigné et al., 2022).

### **3.1.3 Segregation dynamics**

Segregation increased in the US throughout the 20th century, especially during the Great Migration and in recent decades. Cutler et al. (1999) and Shertzer and Walsh (2019) provide evidence that segregation patterns started increasing at the end of the 19th century and until the 1970s when Black families moved to large cities in the North (Great Migration). Recent work finds that racial segregation has again increased since the 1990s and income segregation since the 1980s (Menendian et al., 2021, Fogli and Guerrieri, 2019). At the same time, racial segregation has declined in some city centers as high-income White families moved back to gentrifying neighborhoods (Couture and Handbury, 2020).

Regarding mechanisms, a large strand of work suggests neighborhood sociodemographic characteristics and tipping points play a critical role. Boustan (2010) argues that the “White flight” to suburbs as Black Southern families moved to city centers during the Great Migration is most consistent with a distaste for racial diversity coming from White families, although a distaste for low-income levels cannot be ruled out (as poverty and race were highly correlated at the time). Indeed, racial segregation dynamics are reinforced by homophily exhibited in affluent families, who may want to locate close to other high-income families (Guerrieri et al., 2013). There is extensive work supporting this story and the presence of “tipping points,” thresholds in the share of out-group individuals (e.g., Blacks) beyond which those in the in-group (e.g., Whites) massively abandon their neighborhoods (Schelling, 1971, 1978, Card et al., 2008).

Crime, commuting costs, and amenities (durable or not) also contribute to segregation dynamics. O’Sullivan (2005) and Curci and Masera (2018) argue that heterogeneous preferences over neighborhood safety, which might be valued more by higher-income families, partly drive racial segregation. Commuting costs, infrastructure, and public transportation access are also critical due to differences in car ownership rates across racial and income groups. For example, Baum-Snow (2007) argues that the development of highways critically contributed to the White flight to suburbs. For amenities, Lee and Lin (2018) follows a similar logic to Brueckner et al. (1999) and argues that natural and permanent amenities such as access to the sea contribute to the persistence in neighborhoods’ economic status and prevented White flight in high permanent-amenity neighborhoods. Similarly, non-durable amenities (e.g., restaurants, pollution) play a major role in dynamics, as high-income households tend to value them more (Banzhaf and Walsh, 2008, Waldfogel, 2008).

Housing is a key driver of segregation dynamics through (at least) three channels: housing durability, homeownership rates, and land use regulations. Housing durability and the age of the housing stock matter because high-income families prefer to live in newer (or renovated) housing (Brueckner and Rosenthal, 2009, Rosenthal, 2008). These critically interact with homeownership rates. Homeowners are less mobile and have more incentives to renovate their dwellings or promote local policies that raise property values (Fischel, 2001). Thus, high-homeownership neighborhoods exhibit more persistence in their economic status and racial characteristics (Rosenthal, 2008). Finally, land use regulations indirectly affect sorting by imposing restrictions on the type of dwellings and businesses allowed in a neighborhood (e.g., single-family homes or mixed-use buildings). They substantially affect the supply of housing and, therefore, their cost. Recent research argues that land use regulation and zoning restrictions arose endogenously to prevent Black families from moving into predominantly White and high-income neighborhoods (Shertzer et al., 2022, 2016, Fishback et al., 2020).

Segregation dynamics can impact wealth inequality through house prices. Recent work by Boustan and Margo (2013) and Akbar et al. (2019) show that the racial wealth gap increased after the Great Migration, as house values in central cities plummeted after Black families bought those properties (for a premium) from White families moving to the suburbs. That erosion in Black wealth offset the gains from migrating to the North (i.e., higher wages).

Segregation (or spatial sorting across neighborhoods in general) also impacts various outcomes through neighborhood effects. The following section provides an overview of the primary outcomes studied in the literature.

Future work should investigate the state and dynamics of segregation beyond the US borders, especially regarding race. Current research is almost entirely based in the US. This is partly due to the saliency of the issue in the public debate there, and limited data availability elsewhere. For example, many surveys or government statistics in continental Europe contain information on individuals' nationality or origin, but not race.

### **3.2 Neighborhood effects**

The literature studying neighborhood effects is large and growing rapidly. This subsection offers a short and non-exhaustive summary of the main findings in this literature, focusing on empirical papers with quasi-experimental settings (in which non-random sorting is less of a concern). Table 1 provides a snapshot of some of the most common outcomes studied in the literature, along with a list of proposed mechanisms and references. See Durlauf (2004), Sharkey and Faber (2014), and Chyn and Katz (2021) and the references therein for more thorough reviews.

Neighborhoods affect a wide variety of short and long-run outcomes. The literature typically defines “better” neighborhoods in terms of poverty levels, income, school quality, or crime – all of which are highly correlated. Moving to a better neighborhood increases education, lifetime earnings, social mobility, and health outcomes (Ludwig et al., 2011, Chetty et al., 2016, Chetty and Hendren, 2018a, Ang, 2021). They influence inequalities through all these channels and also spatial mismatch – hampering employment opportunities of adults not residing “in the right place” (Gobillon et al., 2007, 2014, Gobillon and Selod, 2021). Effects are larger with longer exposures, especially for younger children (Jencks and Mayer, 1990, Chetty et al., 2016, Chyn, 2018). Effects are more nuanced or null for adults, who do not seem to benefit from improved labor market outcomes (Kling et al., 2007), but that do see gains in other outcomes such as subjective well-being (Ludwig et al., 2013). Adults see improvements in labor market outcomes if migrating to a higher opportunity city (Boustan, 2016, Collins and Wanamaker, 2014, Deryugina et al., 2018).

The mechanisms driving these effects are diverse. For children, better public schools and peer effects appear to be some of the most critical factors, although crime and other local public goods and bads (e.g., law enforcement or pollution) also play an important role (Laliberté, 2021, Ang, 2021, Currie and Walker, 2011). For adults, gains in subjective well-being appear to be driven by improvements in actual and perceived safety (Ludwig et al., 2012).

Low-income households (and their children) are more likely to reside in worse neighborhoods. Therefore, through segregation, neighborhoods are partly responsible for current inequality levels and hampering the future social mobility prospects of children



living in them. Housing policies and local interventions, discussed in the next and last section, might help alleviate the negative consequences of segregation.

There are three main paths forward for the literature on neighborhood effects. First, identify new outcomes. Second, identify the complete set of mechanisms and their relative importance driving these outcomes. And finally, identify the “right” level of aggregation or, equivalently (in the view of this handbook chapter’s authors), address the question: “what is a neighborhood?” The latter point is relevant as “neighborhoods” in the literature can refer to areas with over 100,000 individuals, such as the PUMAs in the US, school districts, ZIP codes, census tracts, or even the very local area surrounding a building (Luttmer, 2005, Rosenthal and Ross, 2015, Domènech-Arú, 2022).

Table 1: Neighborhood effects in the literature

<b>Outcome</b>	<b>Summary</b>	<b>Mechanisms</b>	<b>References and contexts</b>
<b>Criminal activity</b>	Growing up in a high-crime neighborhood affects the likelihood of having a criminal record. Criminals in the social network affect the propensity to commit a crime and recidivism.	Peer effects, crime	Denmark: Damm and Dustmann (2014); US: Aliprantis and Hartley (2015), Billings et al. (2019), Billings and Schnepel (2020)
<b>Education</b>	Better neighborhoods enhance years of education and university enrollment. Larger effects for younger children.	Schools, peer effects, crime	Australia: Deutscher (2020); Canada: Laliberté (2021); Israel: Gould et al. (2011); US: Katz et al. (2001), Chetty et al. (2016), Chetty and Hendren (2018a,b), Ang (2021); Sweden: Åslund et al. (2011)
<b>Health</b>	Better neighborhoods have positive effects on life expectancy and physical health. Larger effects for younger children and infants. Positive effects on mental health for everyone.	Pollution, crime, peer effects	US: Katz et al. (2001), Kling et al. (2007), Currie and Schmieder (2009), Currie et al. (2009), Currie and Walker (2011), Ludwig et al. (2011, 2013)
<b>Labor market</b>	Better neighborhoods enhance earnings and employment. Larger effects for younger children. Little or no effects for adults unless they move to a different labor market.	Schools, peer effects, social interactions	Canada: Oreopoulos (2003); US: Bayer et al. (2008), Collins and Wanamaker (2014), Chyn (2018), Haltiwanger et al. (2020), Deryugina et al. (2018, 2021)
<b>Perceptions</b>	Local environments influence (at least) inequality, immigration, and crime perceptions.	Local inequality, immigration, and crime	Argentina: Cruces et al. (2013); Spain: Domènech-Arumí (2021, 2022); US: Newman et al. (2018), Minkoff and Lyons (2019)
<b>Preferences for redistribution</b>	Relative position in the neighborhood influences willingness to redistribute.	Local inequality, relative income	Argentina: Cruces et al. (2013); Spain: Domènech-Arumí (2022); US: Sands (2017), Sands and de Kadt (2020)
<b>Racial attitudes</b>	Contact with out-group individuals improves attitudes towards them. High ethnic or linguistic diversity is sometimes associated with a lower provision of local public goods.	Peer effects, segregation, social interactions	France: Algan et al. (2016); Indonesia: Bazzi et al. (2019); US: Merlino et al. (2019), Bursztytn et al. (2021); World: Desmet et al. (2020)
<b>Social mobility</b>	Moving to a better neighborhood enhances social mobility. Convergence is fast.	Schools, peer effects, crime	Australia: Deutscher (2020); US: Chetty and Hendren (2018a,b)
<b>Subjective well-being</b>	Safer neighborhoods improve subjective well-being. Self-aware relatively poor individuals are less happy	Relative income, crime	Netherlands: Kuhn et al. (2011); US: Luttmer (2005), Firebaugh and Schroeder (2009), Ludwig et al. (2013)

## 4 Housing policies

### 4.1 National housing policies and inequality

National housing policies are a significant component of government expenditures and play an essential role in redistribution. They can be divided into two broad categories: housing allowances and tax deductions. The commonly stated goal of these policies is to improve housing affordability for low-income families or promote homeownership. Depending on the policy specifics, they may be geared toward very different households, and their incidence may result in the actual beneficiaries differing from their intended recipients.

#### 4.1.1 Housing allowances

Housing allowances are transfers to low-income households to help them pay for housing. They are common in several European countries, such as France and the UK.

**Principle and distribution:** Low-income tenants (and sometimes homeowners) are the beneficiaries of these policies. Transfers are progressive, typically means-tested, and account for household income and family composition. In contrast with vouchers (see Section 4.2), housing allowances are not conditional on the place of residence but on minimum housing quality requirements. They are often designed following the principles of a negative income tax and thus contribute to significantly lower post-transfer income inequality (as they target the bottom of the distribution). That is the case in France Bozio et al. (2015, 2018).

**Incidence:** Simply analyzing government spending per income decile might lead to overestimating the true redistributive impact of the policy due to the subsidy incidence. For example, Susin (2002) shows that landlords in the upper deciles capture a significant share of the subsidy through increased rents. Other studies analyzing housing allowances in France and the UK reached similar conclusions (Fack, 2006, Gibbons and Manning, 2006). A low housing supply elasticity in those countries is the most likely mechanism allowing landlords to capture most of the rents (Eriksen and Ross, 2015). Eerola et al. (2022) provide evidence for this channel in the context of Finland, where a relatively elastic housing supply could absorb the demand shock without a significant increase in rents. As an alternative mechanism, Brewer et al. (2019) emphasizes the role of demand elasticity. Finally, Grislain-Létrémy and Trevien (2022) highlights the role of the time horizon considered when analyzing the policy, as the housing supply is more elastic in the longer run. Overall, the redistributive capacity of housing allowances critically depends on the housing supply, particularly in the short run. Future research should further assess the impact of these policies on income, wealth, and consumption inequalities and their net welfare effects.

#### 4.1.2 Mortgage interest deduction and non-taxation of imputed rents

Mortgage interest deductions (MID) allow households to deduct mortgage interest payments from their income tax. Similarly, policies exempting imputed rents from income taxes allow households to deduct imputed rents from their tax bases.

**Principle and distribution:** Some countries, like France, treated imputed rents as a source of income at some point. Thus, homeowners were paying an income tax on that rent (that they were saving). Most high-income countries progressively dismissed this treatment of imputed rents to stimulate homeownership. To that end, MID also became increasingly common. By construction, both policies benefit first-time homeowners (Goode, 1960). Homeownership and housing consumption increases with income, therefore making the policies regressive. A large body of work confirms that middle and high-income households are the primary beneficiaries of the policies (Yates, 1982, Poterba and Sinai, 2008, Figari et al., 2017, Botey and Chapelle, 2020). Removing MID and taxing imputed rents could significantly increase the redistributive impact of income taxes and reduce post-tax and transfers inequalities (Yates, 1994, Saarimaa, 2011).

**Incidence and welfare effects:** MID tends to increase house prices without significantly stimulating homeownership when the housing supply is low. Research has confirmed this in the US (Hilber and Turner, 2014), Denmark (Gruber et al., 2021) and Belgium Damen and Goeyvaerts (2021). Using a general equilibrium framework, Gervais (2002) and Sommer and Sullivan (2018) argue that taxing imputed rents or removing MID positively affects welfare. No papers directly estimate the impact of non-taxation of imputed rents. However, given the similarity of the policies, one can make an informed guess from MID literature (Glaeser and Shapiro, 2003, Chambers et al., 2009, Hanson, 2012, 2011). Based on the evidence, some argue that housing (and land) taxation is too low and advocate for tax increases (Eerola and Määttänen, 2005, Bonnet et al., 2021a).

### 4.1.3 Rental investment subsidies

Rental investment subsidies are tax deductions to landlords investing in new dwellings for low and middle-income tenants. The Low-Income Housing Tax Credit (LIHTC) in the US and the Scellier Tax Credit (STC) in France are the most prominent of such policies studied in the literature. Such policies' net impact appears to depend critically on their specific parameters.

**Principles and distribution:** In the US, LIHTC incentivizes developers to construct dwellings destined for low-income households, who benefit from reduced rent (see Diamond and McQuade (2019) for more details). Access to these dwellings is conditional on satisfying an income ceiling condition that varies with local income, thus ensuring that households hosted in them have a lower income than their neighbors in the unsubsidized sector. In France, the STC is directly linked to a physical taxpayer buying a new dwelling from the market and renting it to a low-income tenant at an affordable rate for a minimum number of years (see Chapelle et al. (2018) for more details). Thus, under STC, affordable units are not necessarily concentrated in the same building. A crucial difference between the

LIHTC and STC is that, in France, income ceilings are rarely binding (80% of households are income-eligible) and not tied to local income conditions.

The redistributive implications of these tax credits are theoretically ambiguous and a subject for future research. On the one hand, poor (in the case of LIHTC) or middle-income (in the case of STC) tenants benefit from subsidized rent. On the other hand, both programs promote housing and land acquisition for the wealthiest, who then extract rents from their investment.

**Incidence and welfare:** In the US, evidence suggests that the LIHTC has had little impact on housing supply, possibly because demand is relatively elastic (Malpezzi and Vandell, 2002, Sinai and Waldfogel, 2005). In France, Bono and Trannoy (2019) and Chapelle et al. (2018) show that the end of STC decreased land and house prices with little impact on housing supply. In addition, Chapelle et al. (2018) does not find differences in the income profiles of new tenants following the end of the policy, thus casting doubts on its original redistributive effects. The LIHTC allows low-income households access to better neighborhoods and is associated with positive externalities (as discussed below). Diamond and McQuade (2019) estimate the overall welfare impact of the policy to be positive.

#### **4.1.4 National housing policies: overall assessment**

The net effect of national housing policies critically depends on the elasticities of supply and demand. Their estimation is, unfortunately, not straightforward and current research suggests they vary significantly across countries (Saiz, 2010, Chapelle and Eyméoud, 2017, Girshina et al., 2021). Overall, research suggests that housing policies (especially allowances) successfully reduce income and consumption inequality. However, an inelastic housing supply and MID-alike policies threaten the redistributive goal, as they benefit landlords and middle and high-income households. These policies also impact wealth inequality through changes in house prices. This is an area that has received little attention and that future research should explore. Finally, housing and, especially, land taxation might offer a promising avenue for income redistribution with relatively little associated distortions Bonnet et al. (2021b).

#### **4.2 Policy interventions at the city and neighborhood level**

Segregation poses a major challenge for policymakers, not only because of its adverse effects documented in the academic literature but also because it is a social and politically salient phenomenon. For that, policymakers around the globe have pursued alternative strategies to alleviate segregation, promote the well-being of poorer individuals, and reduce spatial mismatches. These strategies recognize the importance of housing and neighborhoods in the equation, which shows in their design and intent, as they range from rent control to housing vouchers. This final section provides an overview of the most common policies.

### **4.2.1 Rent control**

Rent control is a policy to keep low-income renters in “good” or gentrifying neighborhoods. It can take several forms (Arnott, 1995). Historically, rent control consisted of simple freezes on rents. These were adopted, for example, in the US during WW2 or in France during the First World War (WW1). Nowadays, more or less sophisticated rent caps are more common. These caps usually depend on the dwelling or neighborhood characteristics (e.g., age of the dwelling) and may be adjusted yearly based on a regulated rate (often tied to inflation).

The impact of rent control depends on the type of control applied, its enforcement, and its coverage in the rental sector. Evidence suggests that rent freezes disincentivize proper dwelling maintenance and reduce the mobility of tenants, as illustrated in Cambridge, MA, and San Francisco (Sims, 2007, Diamond and Mc-Quade, 2019). Glaeser and Luttmer (2003) estimates that rent control generates significant mismatches between tenants and dwellings and is associated with suboptimal dwelling occupation and high welfare costs. Misallocations are also spatial and affect neighborhood compositions. Chapelle et al. (2021) shows that rent control allowed poorer households to remain in high-amenity central neighborhoods in Paris, whereas Autor et al. (2014) shows that rent control in Cambridge resulted in students being overrepresented.

The effectiveness of rent control in reducing segregation and housing inequalities is far from granted. Well-designed and strict rent control policies have the potential to reduce national-level inequality (Kholodilin and Kohl, 2021). However, standard rent freezes do not include explicit mechanisms ensuring that poor households will be the beneficiaries of the policy (Autor et al., 2014, Diamond et al., 2019). In addition, they are associated with negative externalities. For example, Autor et al. (2014) shows that rent control reduced the value of dwellings in the proximity of controlled units. The impact of more sophisticated rent control policies is mixed. They may not always be binding in all housing submarkets, or their effect may only be short-lived (Breidenbach et al., 2022). It is also possible that rentals in unregulated submarkets increase their prices when controls are partial (Mense et al., 2019).

In summary, while rent controls are associated with large redistributive impacts favoring (some) tenants (Diamond et al., 2019), the absence of a device to effectively target disadvantaged households and the negative externalities suggests it may not be the best policy.

### **4.2.2 Public housing: traditional policies**

Public or social housing can spatially distribute poorer households across the urban space. These policies include large housing subsidies, subsidized rent, and allocation mechanisms with (approximately) binding income ceilings. They are common in Northern European countries like the UK, France, or the Netherlands, where more than 15% of the housing stock is subject to some public housing program (Scanlon et al., 2014). They are far less

widespread in the US, where public housing is only present in large cities like Chicago or New York, and the social stigma surrounding these programs is much higher.

Historically, social and public housing programs were concentrated in a limited number of neighborhoods. Many were not conceived as a means to protect the poorest individuals but to provide suitable quality housing to middle-class households after WW2, as war destruction had created significant housing shortages in the European countries most exposed to the conflict. After the 1980s, the demographics in those dwellings shifted as new immigrants progressively took over units previously occupied by low and middle-class natives. That resulted in increased ethnic and low-income segregation in public housing neighborhoods (Verdugo, 2016, Verdugo and Toma, 2018). Living in a deteriorating and segregated neighborhood has adverse effects on (primarily) children. These effects are unlikely to be counterbalanced by improved living conditions, such as residing in a less overcrowded dwelling, that may be associated with public housing (Currie and Yelowitz, 2000, Goux and Maurin, 2005).

Strategies around public housing shifted in the 1990s, with urban regeneration programs following old public housing demolitions. In the 90s, many policymakers decided to demolish large public housing complexes and redevelop smaller-scale public housing apartment buildings scattered across neighborhoods. Forced displacements caused by the demolitions provided ideal quasi-experiments that recent empirical papers used to study their effects. Jacob (2004) finds that public housing demolitions in Chicago contributed to reducing income segregation, albeit with little impact on short-run student educational outcomes. Chyn (2018), also in Chicago, finds that displaced children fare better when they become young adults in terms of labor market outcomes (employment and earnings) and criminal records (less likely to have been arrested for violent crimes). In France and London, Guyon et al. (2016) and Blanco and Neri (2021) show that similar urban regeneration programs reduced poverty in targeted neighborhoods by effectively displacing poorer households. However, their capacity to attract middle and high-income households depends on their ability to stimulate the private sector and provide new amenities such as transport infrastructure. Ultimately, the net effect of demolitions on the welfare of poor households seems to depend on the specifics of the redevelopment strategy and the housing supply elasticity (Almagro and Chyn, 2022).

### **4.2.3 Public housing: new policies**

In recent years, policymakers have pursued new strategies to promote public housing, often in collaboration with (or regulating) the private sector. This section distinguishes four types of policies.

**Incentives to the private sector to build affordable housing:** In the US, the primary example is the LIHTC, which was previously discussed as a national policy. Diamond and McQuade (2019) assess the LIHTC positively, which they estimate provides affordable housing for disadvantaged households in high-income neighborhoods while simultaneously attracting racially and income-diverse populations in low-income ones, thus reducing

income and racial segregation. In France, Chapelle et al. (2018) offers a more negative assessment of a similar policy. The authors argue institutional details (eligibility conditions) explain the discrepancy with the US experience.

**Incentives to purchase private dwellings and transform them into affordable units:** For France, Goujard (2011) document similar spillovers as the LIHTC in terms of prices. The effect of the policy on segregation has not been investigated.

**Social housing quotas (in high-income neighborhoods or municipalities):** Evidence, again for France, suggests that municipalities comply, social housing units are developed, and low-income households move into them (Gobillon and Vignolles, 2016, Chapelle et al., 2022). However, their impact on segregation is unclear as new public housing projects are developed in the most disadvantaged neighborhoods within these cities (Chapelle et al., 2022, Beaubrun-Diant and Maury, 2022).

**Promotion of mixed-use buildings (with social and private housing):** These policies are increasingly common, and, to the knowledge of these chapter's authors, there is no research assessing their impact.

The ability of these programs to reduce segregation critically depends on the institutional details (e.g., location restrictions) and eligibility conditions (e.g., income ceilings) to benefit from them. Sorting also occurs within the public housing sector (Chapelle et al., 2022). Future research should assess the efficiency of these policies and their final impact on the welfare of their beneficiaries and their children.

#### **4.2.4 Housing vouchers**

Housing vouchers allow low-income households to lease or purchase affordable housing in “good” neighborhoods. The 1994 Moving to Opportunity (MTO) program in the US is possibly the most famous and studied of such programs (many of the papers described in Section 3.2 used variation induced by that program to study neighborhood effects).

Empirical studies show that housing vouchers effectively bring disadvantaged households to better neighborhoods. Studies show that younger children can significantly benefit from these programs, with important effects on long-run outcomes such as earnings or social mobility (Chetty and Hendren, 2018a).

Future research should examine whether house vouchers (and other local housing policies) can be effectively scaled up. The number of beneficiaries in the original MTO program was small (less than 5,000 families). Since then, voucher programs have significantly expanded in the US, especially in light of recent evidence pointing at their positive effects. However, it is unlikely that simply expanding the program would yield the same results. As the number of beneficiaries grows, the importance of housing supply elasticities and general equilibrium effects kicks in. The authors of this handbook chapter are unaware of papers investigating this angle, but they expect it to receive attention in the upcoming years.



#### 4.2.5 Breaking school districts: busing, school vouchers, and algorithms

In many countries, such as France or the US, families' school choice is limited to schools in their school district. Good schools are in good neighborhoods and, as discussed in Section 3.2, education is one of the key mechanisms driving social mobility. School quality is common knowledge in local communities, and real estate markets capitalize on it in the form of higher house prices for dwellings in better school districts (Black, 1999, Gibbons and Machin, 2003, Gibbons et al., 2013, Black and Machin, 2011), which reinforce sorting (Bayer et al., 2014). Therefore, an alternative approach to reducing segregation is to break the link between neighborhoods and schools.

**Busing:** In its 1954 *Brown v. Board of Education of Topeka* ruling, the US Supreme Court ruled that racial segregation of children in public schools was unconstitutional. After the ruling and a wave of federal court orders, several large US cities started their plans to desegregate schools, which they often implemented through “busing” (i.e., transporting children to schools outside their district to correct racial segregation) (Cascio et al., 2008, 2010). Extensive research has documented positive effects of busing for Black children in terms of school performance and future earnings (Guryan, 2004, Reber, 2005, 2010, Johnson, 2011, Bergman, 2018, Tuttle, 2019), with limited or no impact for White children (Angrist and Lang, 2004). Busing may have modestly contributed to White flight Baum-Snow and Lutz (2011). Conversely, recent studies show that Black students became worse off when a series of rulings in the 1990s released school districts from court-ordered segregation plans, ending busing (Lutz, 2011, Billings et al., 2014). Research thus suggests that the net impact of desegregation programs is large.

**School vouchers and assignment mechanisms:** School vouchers and assignment algorithms have replaced desegregation plans following the 90s court rulings. School vouchers allow low-income students and their parents more freedom in choosing a school. Evidence of their positive effects is mixed (Ladd, 2002, Epple et al., 2017), and there is little evidence that they significantly impact segregation – they may even encourage it (Brunner et al., 2010). Assignment algorithms promise to match students to schools in an efficient and welfare-improving manner (Abdulkadiroğlu et al., 2005, 2017). They have become popular in large cities like New York in recent years. Recent evidence suggests they may be effective in reducing segregation (Abdulkadiroğlu and Grigoryan, 2021), although competition from private schools opting out of the assignment mechanism may pose a threat to that end (Kutscher et al., 2020). Future research should further assess their impact on segregation and other outcomes.

## Summary

Inequality across and within countries is high and generally growing, particularly in terms of wealth. Levels and trends are not deterministic. Differences in initial conditions, institutions, exposure to shocks, and policies explain their cross-country divergence.

Regions, cities, and neighborhoods within countries can be as unequal as the countries themselves. The core mechanism behind these heterogeneities is households and firms' uneven sorting across geographies.

Inequality cannot be understood without considering the role of housing. Housing represents a significant share of households' expenditures and is the most important and evenly distributed asset throughout the income and wealth distribution. Moreover, within-country regional and city-level inequalities may not be as stark once accounting for differences in the cost of living between them. On the other hand, accounting for differences in sorting based on income or race across neighborhoods offers a more negative outlook, as poorer households reside in neighborhoods endowed with lower-quality local public goods and amenities.

Household sorting within cities and neighborhoods results in segregation, which has important implications for the dynamics of inequality. Sorting arises endogenously due to preferences for homophily and tipping points, heterogeneities in preferences over local amenities and public goods, commuting costs, housing durability, homeownership rates, and land use regulations. The result (at least in the US) has materialized in the form of high levels of income and racial segregation, with poorer households ending up in worse neighborhoods. Because neighborhood exposure (particularly from a young age) crucially determines long-run outcomes (with schooling being an essential channel), existing segregation acts as a roadblock to social mobility and enhances the persistence of current inequalities.

National housing policies and interventions at the local level can help revert segregation and undesirable inequality dynamics. Housing allowances, tax incentives to build affordable housing in high-income neighborhoods, and school desegregation policies appear to be the most promising avenues to that goal.

## Cross-References

- [Inequality Measurement: Methods and Data](#)
- [Understanding Inequality Within Households](#)
- [Wealth Inequalities](#)
- [Inequality and Top Incomes](#)

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