



Divided Cities

UNDERSTANDING INTRA-URBAN INEQUALITIES

Policy highlights



Notes

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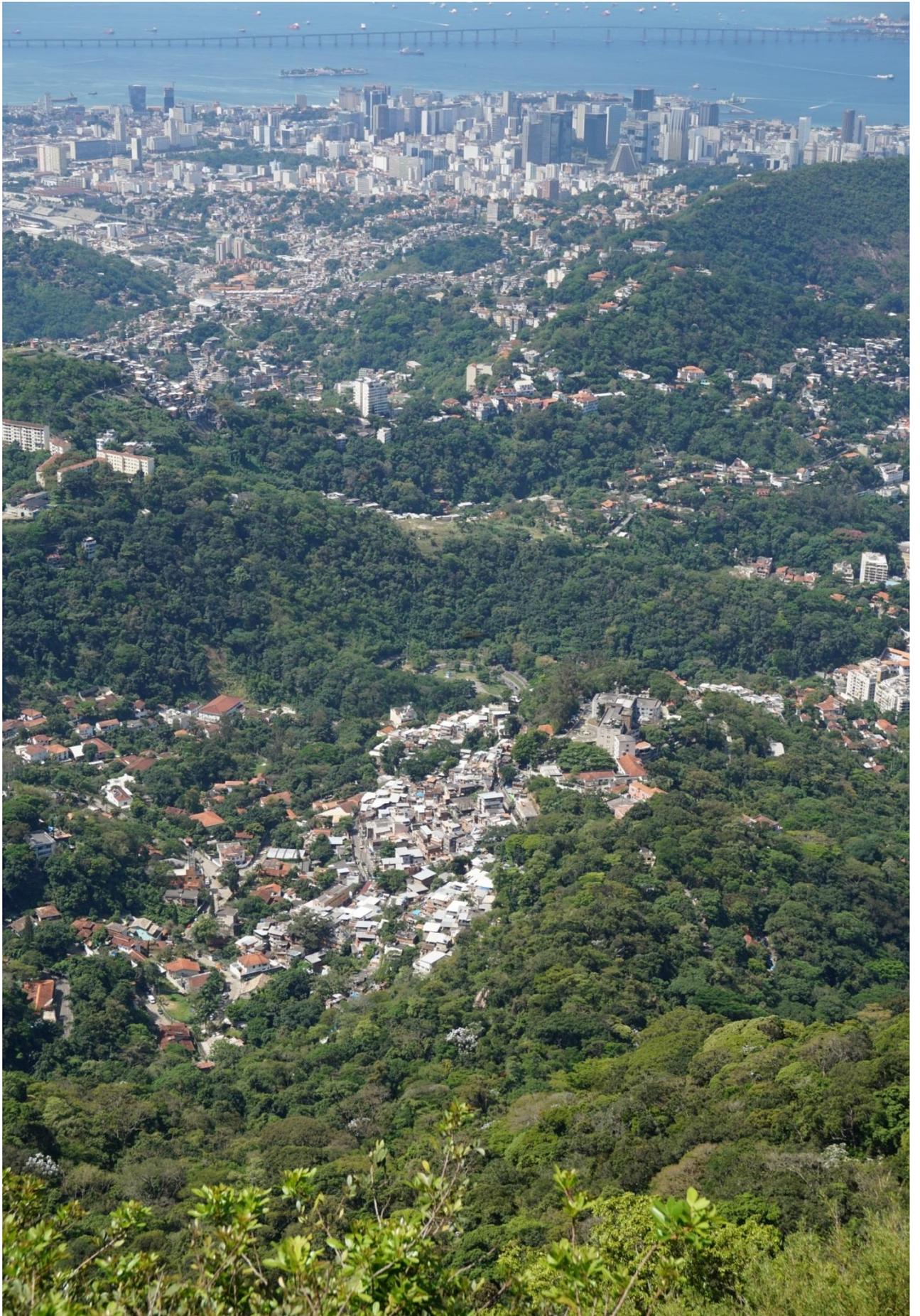
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What are divided cities?

Cities are places of diversity and offer opportunity for all - when they are not divided

Cities unite people of different backgrounds. Within such diversity, similar people in terms of culture and socio-economic background can often congregate towards each other, and simultaneously, separate from other social groups. Such separation is known as spatial segregation. In inclusive and well-organised cities, people of all backgrounds living in different neighbourhoods can access opportunities and high-level services important for well-being.

However, cities can often be divided. In divided cities there are gaps and barriers that produce exclusive spaces and concentrations of disadvantage. Inequality in access to high-quality services and opportunities across social groups can exacerbate societal disparities and leave behind the most vulnerable.

Segregation is neither an accident nor necessarily a negative feature, as similar households are known to choose neighborhoods that allow them to access their social network and the type of services and amenities they value. When a result of choice, the concentration of similar people in specific neighbourhoods can bring positive effects. This is at least true for those living in the most affluent and highest quality neighbourhoods, who will likely benefit from good schools,

healthcare and transport services.

Nevertheless, with decreasing housing affordability in cities and policies that spatially concentrate the provision of social housing, lower income households may end up tied to deprived and disconnected neighborhoods. Living in a deprived neighborhood can impact education, health and work prospects for children and adults, further deepening inequalities, even across generations.¹ In the Netherlands, a relatively egalitarian country by many standards, children from the poorest neighbourhoods have, on average, adult incomes that are 5-6% lower than those who grew up in the most affluent.

Through known benefits of density, such as higher wages and productivity, cities offer opportunities unmatched for socioeconomic mobility. However, if cities are to execute their role as social ladders, the divisions that determine how life and work benefits are distributed should be better understood. Policies play a role in bridging divides between socio-economic groups within cities when separation translates into lower levels of well-being.

¹ Chetty, R., Hendren, N., Katz, L.F. (2016), The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment, *American Economic Review* 106(4), 855-902.

Income divide

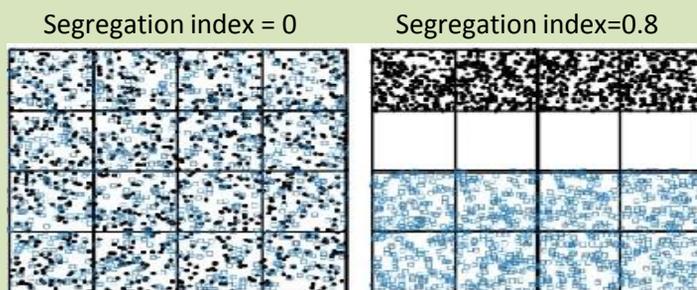
The concentration of people with a similar income level, known as income segregation, increasingly shapes urban development

Income segregation is intrinsically linked to urban development. When people choose where to live, relative to their budget and service access needs, they often gravitate towards locations where people who are similar to them in terms of culture and socio-economic background live.

Income is usually found to be a relevant dimension in describing the clustering of people in different neighborhoods.

Although income inequality and income segregation often go hand-in-hand, a city with low overall inequality may display higher income segregation levels than a city with high overall inequality. This can happen for two reasons. First, as segregation levels vary with income level, average income segregation values may hide large disparities between the top and bottom income groups. Second, cities come in various shapes and sizes, and so do their neighbourhoods.

Measuring income segregation levels across and within countries



Segregation indexes are meant to differentiate between an unsegregated situation (left panel) where different groups (blue versus black dots in the graph) are mingled in space from a segregated one (right panel), where groups are separated from each other.

As segregation indices are sensitive to the definition of neighbourhoods (squares in the graph), income segregation in cities should be investigated at comparable small scales. Larger areas are more likely to contain different dots, so by construction segregation measured at a larger scale will be smaller than segregation measured at a small scale.

At the same time, analysis for cities should not be limited to city administrative boundaries, but encompass the spaces where people move daily for their major activities. The use of consistent units (i.e. functional urban areas) is meaningful for international comparisons.

Income segregation levels vary greatly across and within countries

The concentration of people in particular neighbourhoods according to income is present across cities around the world to different degrees. A comparison of income segregation across a sample of cities in ten OECD countries plus Brazil and South Africa reveals that levels vary considerably across cities, even within the same country (Figure 1).

Segregation is highest in Brazil, South Africa and the United States, three countries with histories of segregation; and lowest in cities in countries with low levels of overall inequality, such as Australia, New Zealand, Denmark and the Netherlands.

In the most extreme case, average income segregation levels in Brasilia, the most segregated city in Brazil, are seven times higher than in Auckland, the most segregated city in New Zealand. These differences are more nuanced across developed countries with low overall levels of inequality.

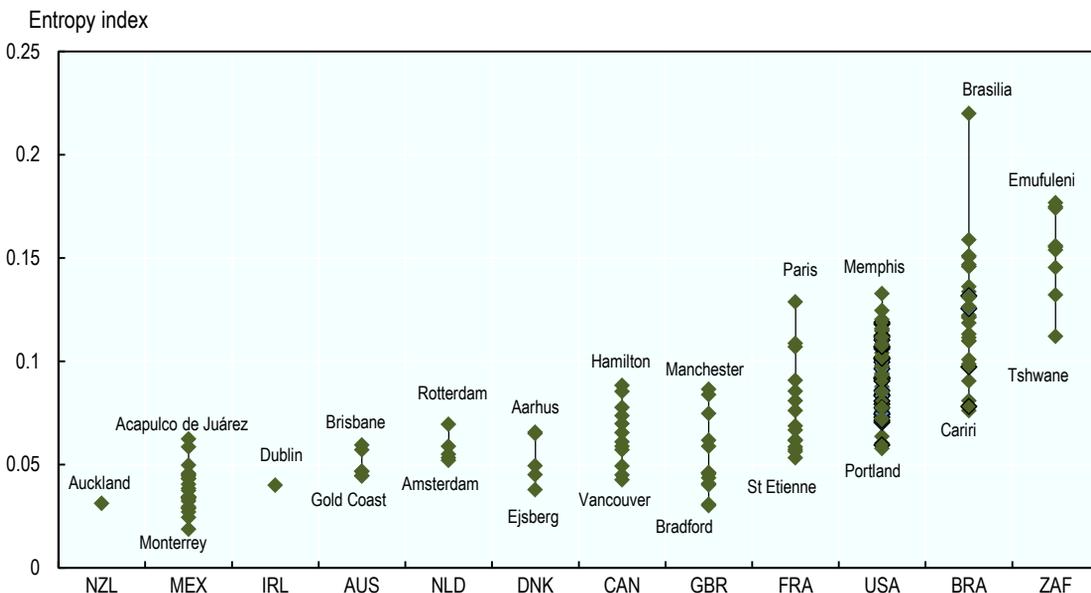
Segregation also varies within countries, more so for countries with higher average levels of income segregation. In the United States, for instance, average income segregation levels in Memphis, the most segregated city, are 2.3 times higher than in Portland, the least segregated city.

Previous studies documented a general increase in segregation in European cities.² However, changes in income segregation can differ greatly within countries. In the United Kingdom for example, Leeds, Manchester and Sheffield showed increases in average segregation levels, while London, Cardiff and Newcastle showed reductions during the 2000s.

² See Tammaru, T. et al. (eds.) (2016), Socio-Economic Segregation in European Capital Cities: East Meets West, Routledge, New York.

Figure 1. Income segregation levels across cities in each country

Spatial entropy (1000m scale), 1 = perfect segregation



In most cities, the rich are more likely to be segregated than the poor

Income segregation levels vary considerably across income groups. In particular, the top and bottom income groups may be more likely to live separately than the middle income group.

In many cities in the twelve countries considered, including the United States, segregation was found to be highest at the top income group (Figure 2). Segregation levels usually pick up after a certain income threshold. In all countries, people in the middle income group – which are also the most numerous – display the lowest levels of segregation.

In most countries, the rich are more likely to be segregated than the poor (Figure 3). This is a clear conclusion that emerges from comparing the segregation levels between the top and bottom 20th percentiles income groups across countries.

In South Africa – the most extreme case – the rich are three times more segregated than the poor. The situation is the opposite in Denmark and the Netherlands, two countries with low income inequality levels, where the poor tend to be more segregated on average than the rich.

Figure 2. Income segregation by income group for selected cities in the United States

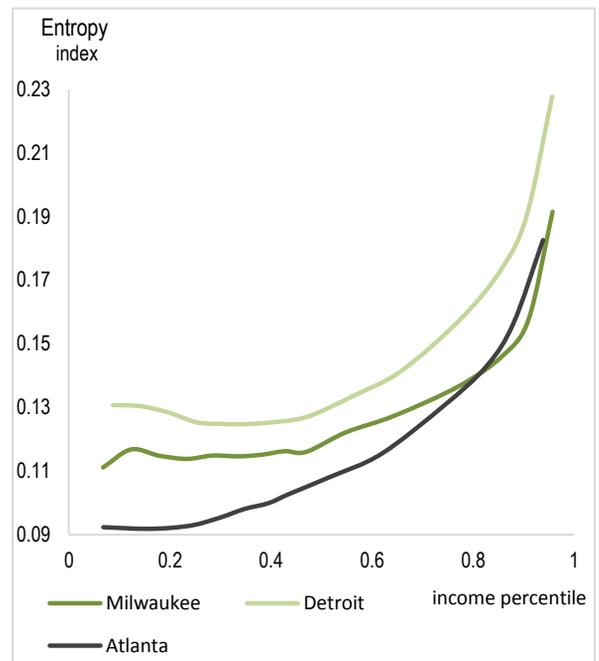
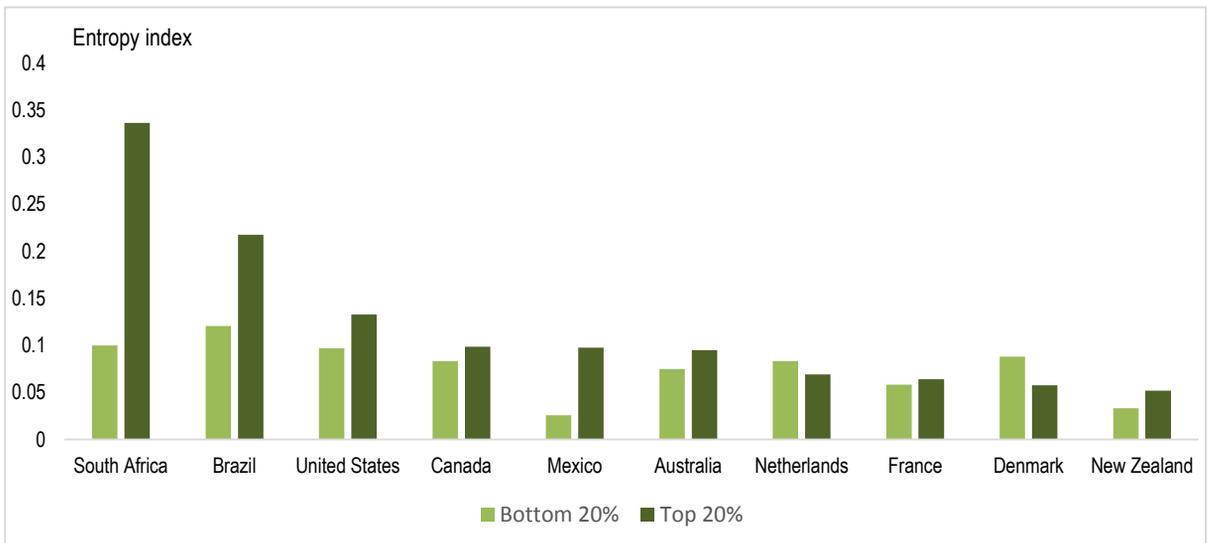


Figure 3. Income segregation in the bottom and top income groups by country

Entropy index for top and bottom 20% income groups (1= perfect segregation)



What city characteristics are associated with higher income segregation?

Relatively higher income segregation levels can be expected in larger, younger, more productive, less equal and more affluent cities (Table 1). The way in which population and jobs are distributed within cities also matters for segregation: a high concentration of jobs and people around a unique centre is associated with higher levels of income segregation. However, most of these determinants speak to segregation of the rich.

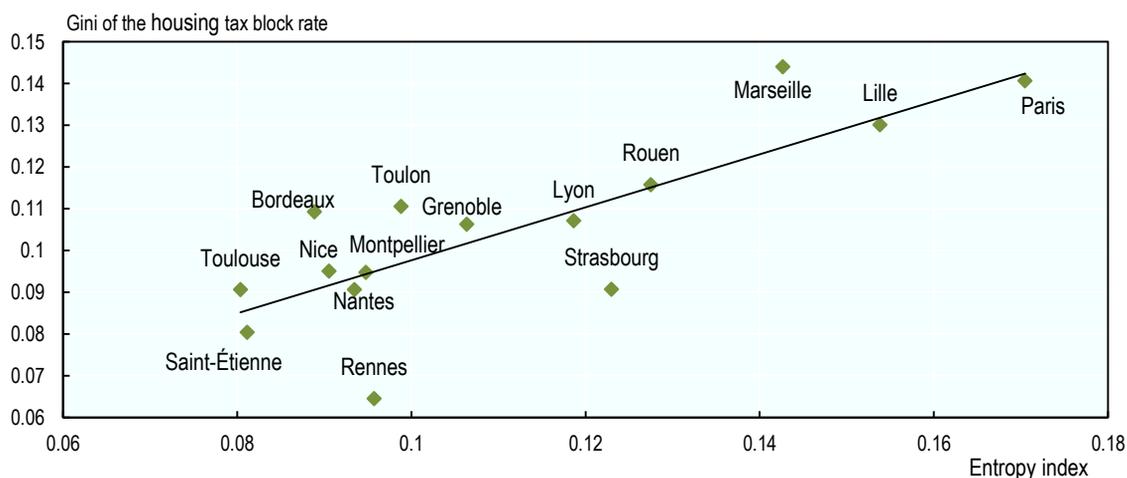
Governance structures also matter for segregation. The organisation of local tax systems might introduce household incentives to concentrate in different neighbourhoods, resulting in possible impacts on segregation levels. Across French metropolitan areas, income segregation is on average higher based on the heterogeneity of tax arrangements (i.e. housing tax block rate) across different municipalities of each metropolitan area (Figure 4).

Table 1. Income segregation and household disposable income by cities (top 10)

Low segregation (entropy<0.07), high income per head (>median)		High segregation (entropy>0.07), High income per head (>median)	
Harrisburg, US	Edmonton, CA	Memphis, US	Cleveland, US
Calgary, CA	Clearwater/Saint Petersburg, US	Dallas, US	Richmond, US
Portland, AU	Melbourne, AU	Philadelphia, US	Baltimore, US
Perth, AU	Brisbane, AU	Detroit, US	Akron, US
Sydney, AU	Paris, FR	Indianapolis, US	Kansas City, US
Low segregation (entropy<0.07), low income per head (<median)		High segregation (entropy>0.07), low income per head (<median)	
Acapulco de Juárez, MX	Mérida, MX	Birmingham, UK	Winnipeg, CA
Torreón, MX	San Luis Potosí, MX	Fresno, US	Sheffield, UK
Reynosa, MX	Juárez, MX	El Paso, US	Montreal, CA
Puebla, MX	Aguascalientes, MX	Hamilton, CA	Quebec, CA
Toluca, MX	León, MX	Manchester, UK	Leeds, UK

Figure 4. Income segregation and tax fragmentation within French metropolitan areas

Gini index measures inequality of the house tax block rate (inter-municipalities plus municipalities rates)



In Brazil, affluent households are separated from other income groups and tend to concentrate in high-rise neighbourhoods

The affluent may segregate more in cities where the concentration of people in apartment buildings is higher. The case of Brazil sheds light on the relationship between the concentration of people in high-rise building neighborhoods and income segregation.

Segregation levels are higher in larger cities, and also increase sharply for the top income group. This is the case for a sample of one hundred cities ranging from 100 000 inhabitants to megapolises such as São Paulo and Rio de Janeiro.

Housing choice may explain larger segregation levels for the top income group. In Brazil, whole neighbourhoods with only apartment buildings – so-called vertical neighborhoods – are more likely to appear as cities enlarge. In some Rio de Janeiro “vertical neighbourhoods” where more than 95% of households reside in apartment buildings, 30% of households earn 15 minimum wages or more while 2% earn one minimum wage or less.

Concentrations of people in vertical neighborhoods are related to higher segregation of the top income group, even after factoring out the effect of city size and inequality. Vertical neighbourhoods are not, however, related to segregation of the poor – not surprising as apartments are not the prevalent type of housing for low income groups in Brazil.

In this way, the existence of areas almost exclusively dedicated to high-rise housing catering to the demands of higher-income groups can be at the heart of the observed income segregation in cities. Discouraging vertical development is unlikely to bring down segregation, however, as it is a natural result of density increases. Other policies aiming at decentralizing economic activity and extending provision of affordable housing in central areas and public transport are more likely to bridge gaps in access to amenities and employment.



Migrant divide

Migrant location is a relevant dimension in the study of intra-urban inequalities across differently sized cities

The location of people sharing a common country of origin across neighbourhoods in OECD cities is informative with regards to how migrant communities integrate into new urban settings.

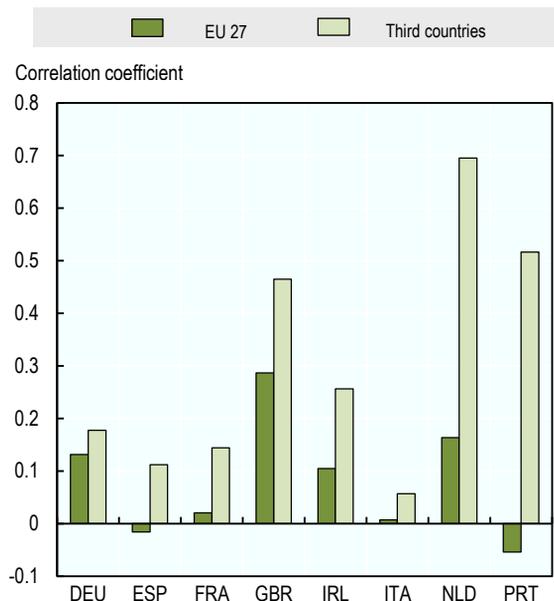
Analysis of migrant settlement patterns has traditionally focused on large areas, such as the municipal or regional level. At these levels, studies usually indicate that migrants gravitate towards large cities. However, a comparison of the residential distribution of immigrants in eight European countries using a detailed map of immigrant populations reveals a more complex picture.

Do migrants from all backgrounds concentrate in small and large cities alike?

Although there is a general tendency of migrants to gravitate towards large cities, a relatively large share of migrants can be found in some small cities. The likelihood that a migrant settles in a small city instead of a large one is linked to country of origin.

The relationship between city size and migrant concentration is smaller for migrants from EU countries compared to migrants from outside the European Union (Figure 5). On the other hand, in the eight European countries analysed, the association between city size and non-EU migrant concentration is positive, although it is stronger in the Netherlands, United Kingdom and Portugal and weaker in Italy.

Figure 5. Correlation between city size and the concentration of migrants from Third countries and intra-EU



Migrant concentration and diversity can be found not only in large cities, but also in medium and small sized towns

Common knowledge suggests that large cities mainly attract migrants of diverse backgrounds. In large cities (>1 million inhabitants), 15% of residents are foreign-born on average and 9% from outside the EU. The proportion of migrants in small cities (<150 thousand inhabitants) is smaller (9%), but some small European cities are magnets for migrants: four cities

in the top five ranking in terms of foreign-born population share are classified as small (Table 2).

At the same time, migrant diversity – in terms of the number of countries of origin and the distribution of migrants within cities – can be an attribute of both large and small cities (Table 3).

Table 2. Top 10 EU cities in terms of migrant concentration

FUA name (country)	Population (persons)	Migrants as % of total population
Torreveija (ES)	91,863	45%
Fuengirola (ES)	142,245	34%
Benidorm (ES)	142,043	28%
London (UK)	11,729,234	28%
Arrecife (ES)	132,474	26%
Luton (UK)	281,753	24%
Frankfurt am Main (DE)	2,470,181	24%
Pforzheim (DE)	240,909	23%
Marbella (ES)	235,288	23%
Heilbronn (DE)	364,889	23%

Table 3. Top 10 EU cities in terms of diversity of country of origin of migrants

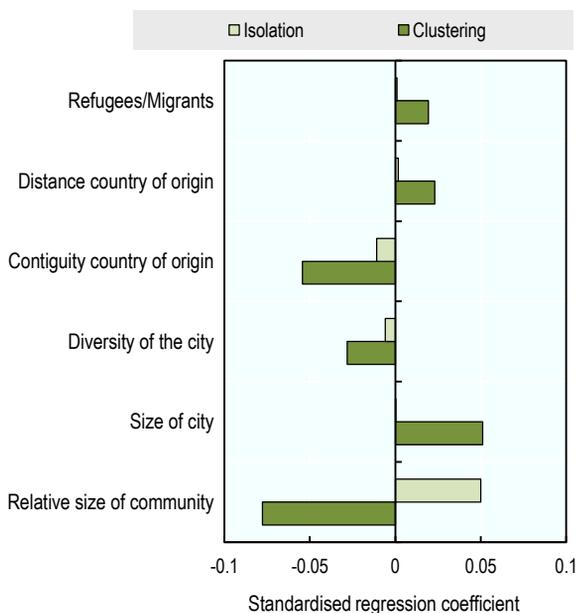
FUA name (country)	Population (persons)	Diversity index (1 = maximum diversity)
Torreveija (ES)	91,863	0.99
Creil (FR)	65,302	0.94
Mulhouse (FR)	165,218	0.82
Paris (FR)	9,362,982	0.82
Melun (FR)	80,740	0.81
Luton (UK)	281,753	0.77
Pforzheim (DE)	240,909	0.76
Frankfurt am Main (DE)	2,470,181	0.73
Arrecife (ES)	132,475	0.73
Strasbourg (FR)	364,370	0.72

What makes migrants more segregated in cities?

Segregation can be linked to two different dimensions: clustering and isolation. Clustering is related to the degree of concentration of distinct socio-economic groups across neighborhoods. Isolation, however, is related to how unlikely it is for a member of one group to meet a member of another, and as such is more directly linked with social network effects.

These two dimensions do not necessarily move in the same direction nor are they a product of the same factors. For instance, members of a large migrant community settled in different neighborhoods in a large city can appear to be more isolated because they are less likely to encounter someone from another community. At the same time, they may appear less clustered as they live in several neighborhoods within the city. Across EU cities, community size is positively related to isolation and negatively related to clustering (Figure 6).

Figure 6. Drivers of isolation and clustering of migrant communities in eight EU countries



In turn, migrants from distant countries as well as refugees and asylum seekers are more likely to cluster within cities. In fact, migrants coming from countries experiencing forced migration are more likely to be both clustered and isolated within cities.

Urban poverty can be greater in neighbourhoods with a higher concentration of migrants

Evidence from sixteen cities in France and five cities in the Netherlands indicates that cities with a higher number of migrants as a percentage of the total population display higher levels of segregation for the bottom 20% income group. Furthermore, evidence for Europe suggests that migrants are on average more likely to be at risk of poverty.

More detailed evidence for five Dutch cities confirms that neighborhoods characterised by a large share of migrants show significantly higher levels of poverty (measured as the share of persons in the bottom income quintile). Even according to the most conservative estimates, a one percent increase in the share of migrants is correlated to a 0.32 percent increase in the share of poverty.

The intensity of this relationship however varies greatly across immigrant communities. Controlling for other factors, the relationship is insignificant for migrants from 'old' EU member states (EU15 countries). By contrast, it is significant for migrants from both the 'new' member states which have joined the EU in 2004 (EU13 countries) and non-EU countries.

Access divide

An important factor connecting residential location and economic outcomes is access to public infrastructure, particularly public transport

The number of jobs that a person can reach within a certain commuting threshold captures how unequally distributed opportunities are within cities. The level of accessibility to jobs depends on both how concentrated or dispersed jobs are, and also on the provision of public transit across neighborhoods.

Accessibility to jobs by public transit varies widely across and within cities

Absolute differences in across one hundred United States cities are stark. While in New York (NY) 44 jobs per person can be accessed within a 30 minute public transit commute, in Riverside (CA) only 1 job per person can be accessed in the same amount of time.

In fact, residents in 40 out of 46 cities have access to less than 10 jobs within a 30 minute public transit commute.

Inequality in access to jobs is also large within cities: although on average residents from New York City have high access to jobs by public transit, accessibility from individual neighborhoods varies considerably. Across cities the Gini index for average number of jobs per capita that are available from a city census tract within a 30-minute commute by public transit varies from 0.5 in San José (California) to 0.83 in New York City.



Poor transit connections between minority neighbourhoods and relevant employment centres hinders job opportunities

The concentration of lower income earners and minorities within cities is deemed particularly problematic when it leads to poorer economic outcomes. Neighborhood location is linked to worse economic outcomes when areas lack appropriate public transit connections to jobs. In the United States, lack of transit connections between minority neighbourhoods and jobs hinders employment opportunities for residents of certain neighbourhoods, leading to more inequality in unemployment.

Minorities can face higher constraints in accessing job opportunities through public transport

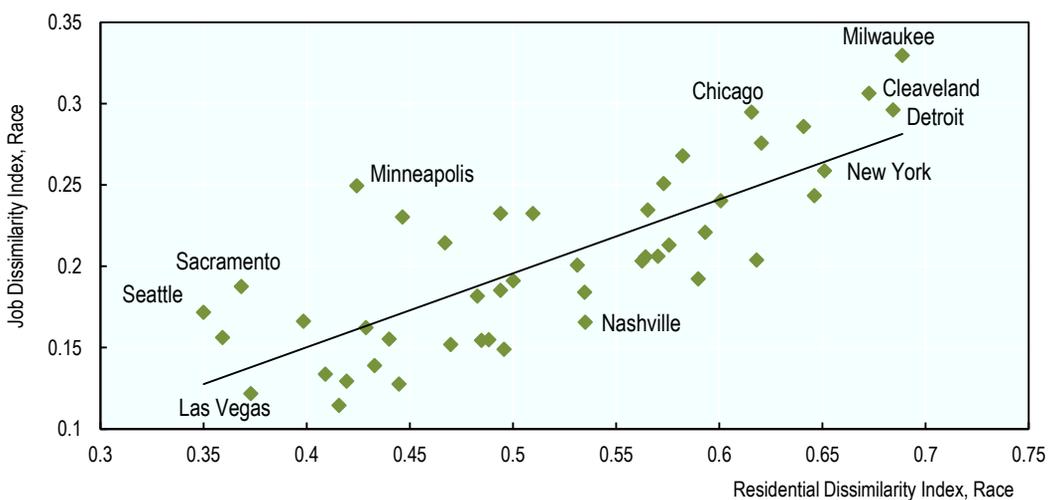
Although minorities live in inner city areas that are relatively well-served by public transport, the jobs available to them lack appropriate transit connections.

The concept of racial workplace segregation describes the extent to which workers of different races work in the same or in different areas within a city. This is analogous to residential segregation: where residents of different races live mostly in different neighborhoods. In fact, high levels of workplace segregation are related to higher levels of residential segregation (Figure 7).

Jobs available to minorities are relatively less well-served by public transport. For example, a neighbourhood with only 1% more white-residents has access to 18 extra jobs within a 30-minute commute by public transport. What's more: this holds true only in cities where workers of different races work in different areas of the city.

Figure 7. Workplace and residential segregation along racial lines, United States cities

A value of 0.3 indicates that 30% of people would have to move (change jobs) to achieve the same racial distribution in all neighbourhoods



Bridging divides

Policies can bridge divides for more inclusive cities

There is no simple answer to why segregation exists. It is a result of multiple factors that operate to different extents in different locations and at different scales. For this reason, reducing segregation depends on tackling underlying factors such as income inequality and lack of access to opportunities.

At the same time, policy making to tackle intra-urban inequalities should be done at the right scale. A comparable definition of cities, neighbourhoods and of the units used as building blocks for quantitative assessment of inequalities will ensure consistency and facilitate international comparisons.

What can policies do to break vicious cycles of inequality?

Policies can actively help to bridge divides for more equal and inclusive cities. As different dimensions of intra-urban inequality are strongly interlinked, making a city more inclusive requires a co-ordinated effort between different strands of policy that matter at city level, such as access to services, housing and spatial planning.

Policy makers can contribute to building more inclusive cities by:

- Promoting affordable housing land-use regulations that are not too restrictive

to new developments through a suitable social housing system that does not lead to a concentration of disadvantage.

- Broadening opportunities available for people that lack access to high-quality education and training through coordinated local and national policies at the metropolitan scale to ensure adequate provision across all neighbourhoods.
- Better linking the most disadvantaged neighbourhoods with places of opportunity within cities through transport policies that connect employment and residential locations where needed.
- Making neighbourhoods more inclusive, for instance by creating public spaces that promote interactions and livable communities.

Moving forward, the increasing availability of fine-scale urban data opens up the possibility to further analyse different forms that inequalities in cities can take. This includes health, housing quality of education and their possible implications on social inclusion and well-being.

