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# Visualizing internal and international migration in the Spanish provinces during the COVID-19 pandemic

Miguel González-Leonardo <sup>a</sup> and Francisco Rowe <sup>b</sup>

## ABSTRACT

Drawing on register records from 2019 to 2021, we analyse the impact of COVID-19 on internal and international migration across the 50 Spanish provinces (NUTS-3 regions). Our results show that net-international migration declined in all the provinces during the pandemic, particularly in high-population-density areas. Certain depopulated provinces registered significant positive net-internal migration rates, while the most populous areas displayed population losses through internal migration. Generally, the total migration balance decreased in most provinces, primarily driven by the drop in international migration. Changes in internal and international migration persisted over time, although patterns tended to converge to pre-pandemic levels in late 2021.

## ARTICLE HISTORY

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## KEYWORDS

internal migration; international migration; COVID-19; provinces; population density; Spain

## JEL


J11; J24; J61; R23

Previous work has documented how COVID-19 constrained international migration (González-Leonardo et al., 2022b) and increased internal migration from large cities to rural areas (González-Leonardo et al., 2022a). We analyse combined impacts of the pandemic on internal and international migration in Spain by addressing the following research questions:

- How has COVID-19 affected both components across provinces with varying population densities?
- Have changes in migration patterns persisted over time?


We used register data from the Estadística de Migraciones of the Instituto Nacional de Estadística to calculate internal, international and total net-migration rates for each province, grouped by quintiles of population density, in 2019, 2020 and 2021 (Figure 1).

During 2020, internal migration recorded significant net gains in low-density provinces, especially around Madrid, and generated net losses in dense agglomerations, notably in Madrid

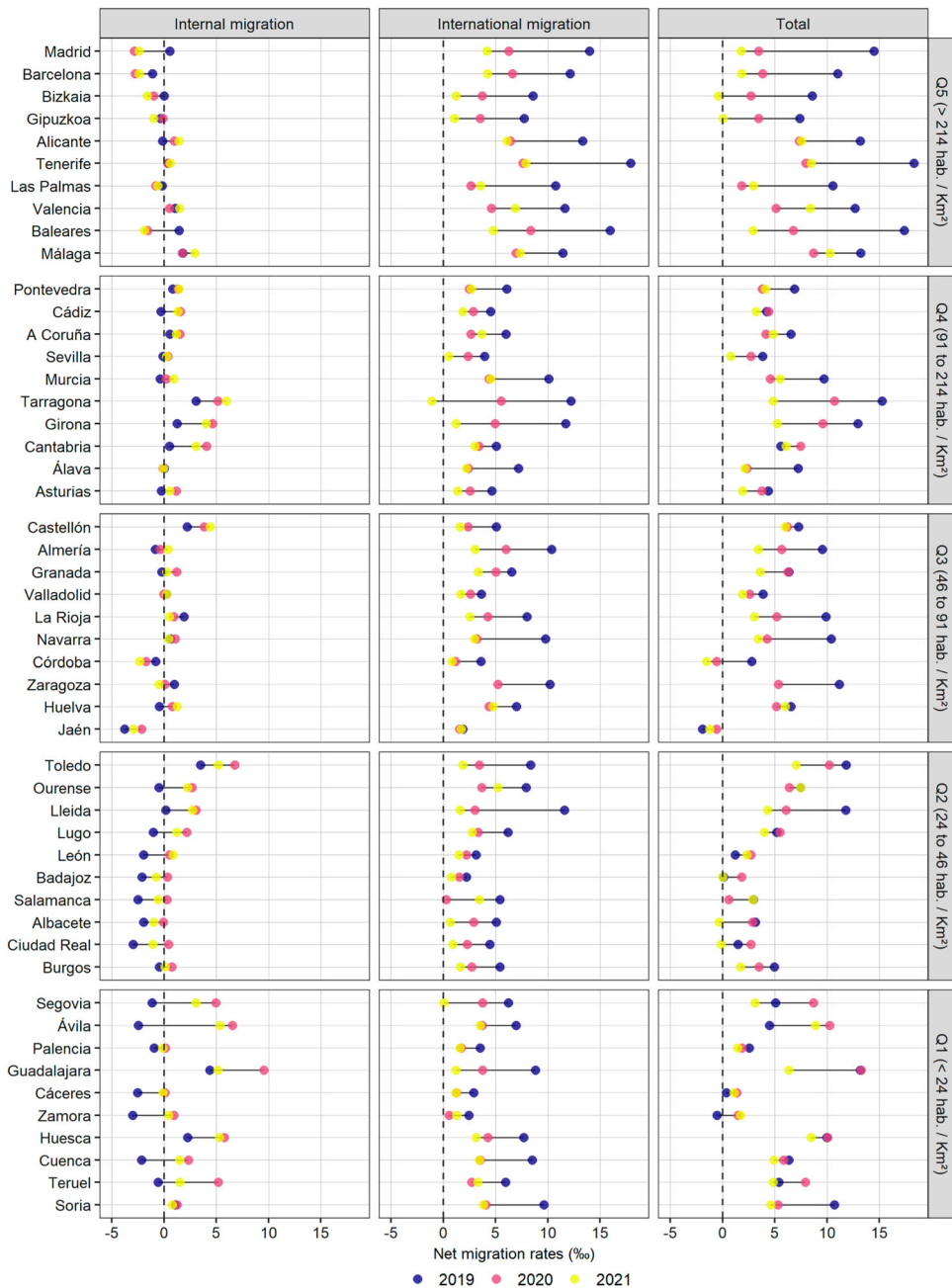
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and Barcelona. International migration decreased across all Spanish provinces, especially in high-density areas. Total net-migration rates declined in most Spanish provinces, mainly driven by the drop in international migration. Only some low-density areas registered significant increases in total net-migration rates during 2020 as a result of the rise in internal net-migration.



**Figure 1.** Internal, international and total net-migration rates in the Spanish provinces by quintiles of population density, 2019–21.

Note: International and total net-migration rates of Zaragoza in 2021 are not shown (see note in Appendix Table A1 in the [online supplemental data](#)).

Generally, variations on internal migration persisted in 2021, although net balances were closer to those of 2019, whereas the decline of international migration was exacerbated in 2021. However, levels of both components tended to converge to pre-pandemic patterns in the second semester of 2021 (see Appendix in the [online supplemental data](#)).

Our results suggest that the pandemic resulted in significant changes in the Spanish migratory system, but these variations seem to have been temporary. Ageing societies need international migrants to sustain population growth and cover deficits of workers, and regions with high population densities are likely to remain key epicentres of attraction.

## DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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