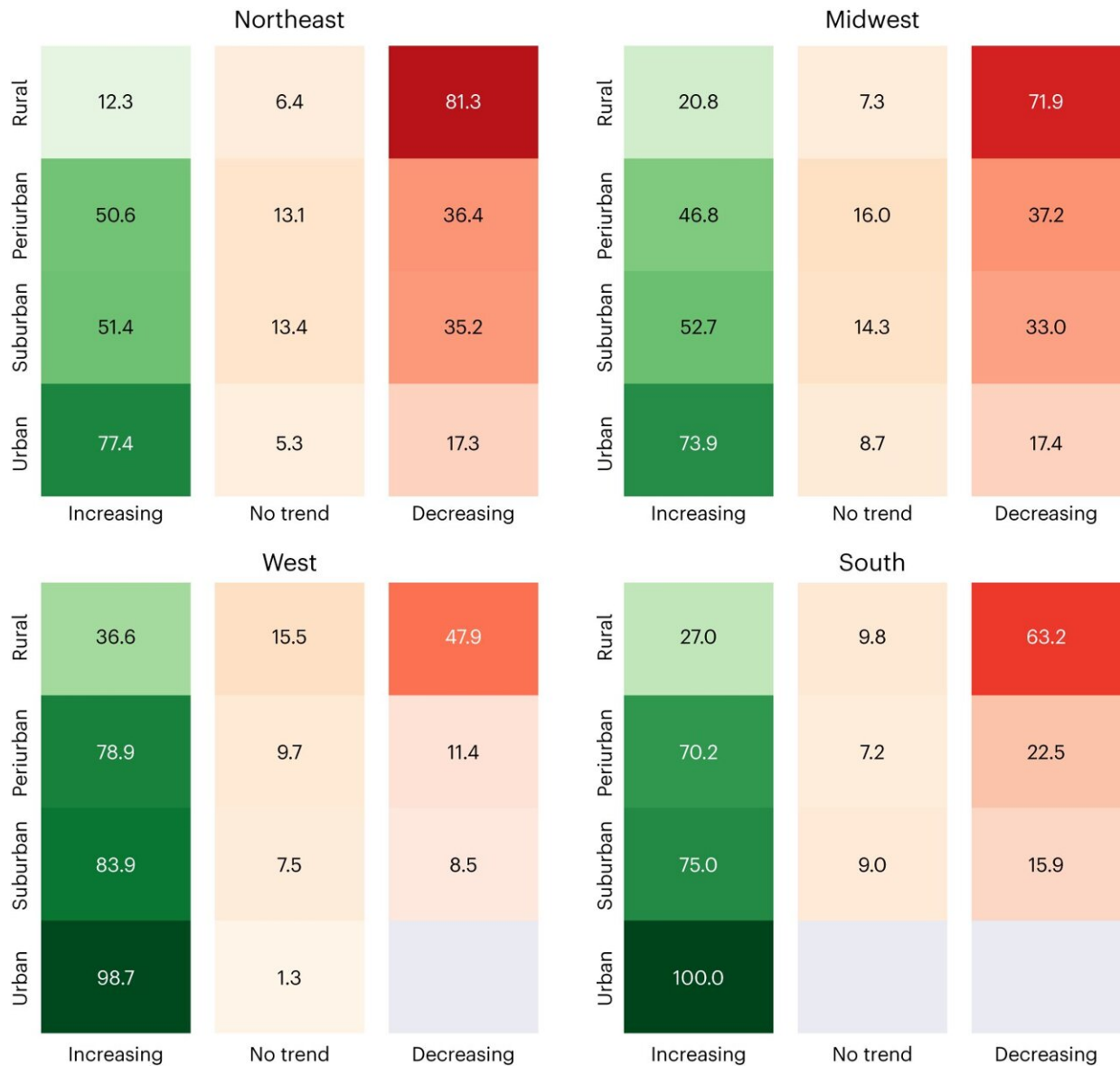


Predicting which US city populations will grow and which will fall by 2100

January 12 2024, by Bob Yirka



Future population trends in SSP2 classified according to the degree of

urbanization for four U.S. regions. To simplify the comparison, the values are normalized for each city class per region. This means, in the top left figure, that of all urban cities in the Northeast region, 77.4% are likely to increase by 2100, while 17.3% are likely to depopulate. From the figure, we see that although urban cities in all regions will be gaining population, around 17% in the Northeast and Midwest are likely to depopulate. Rural places will be declining in all regions. The number of suburban and periurban cities that are likely to gain population is higher in the South and West than in the Northeast and Midwest. The gray cells with no values indicate that no urban cities are likely to lose population in the West and the South. Credit: *Nature Cities* (2024). DOI: 10.1038/s44284-023-00011-7

A trio of environmental engineers at the University of Illinois Chicago, has used census data and an annual demographics survey to make predictions about U.S. city population growth or decline in the years leading up to 2100.

In their paper [published](#) in the journal *Nature Cities*, Uttara Sutradhar, Lauryn Spearing and Sybil Derrible, describe how they used publicly available data sources and results from [climate models](#) to make predictions about population changes for U.S. cities in the coming years under various scenarios.

Making predictions about city population changes is difficult due to the number of variables that can impact growth, stagnation or even depopulation. Factors such as immigration, [tax rates](#), home prices, [birth rates](#), job availability and even the political climate can have an impact on people, pushing them to stay or leave.

On top of all that, there is [global warming](#), which could make some cities too hot to remain livable. Others, especially on ocean shorelines could become submerged. To make the task a little less daunting, the

researchers chose to tackle the problem by looking at recent and current population trends.

To make their estimations, the researchers analyzed data from the U.S. census over the years 2000 to 2020 to track current population trends for 24,295 cities in the U.S. that had consistent data available. They used two datasets from the Census Bureau's 2020 TIGER/Line Shapefiles to make future trend estimations for 31,568 U.S. cities. They then compared the trends they found with climate change estimates under multiple scenarios.

The team found that as many as 50% of U.S. cities could see declines in population over the coming 70 years—compared to 43% in 2020. They also found that the biggest population declines will likely come in the Midwest and Northeast—though not in the biggest cities, such as New York and Chicago. Conversely, they estimate that cities in the south and the west will see more growth, particularly those that are well-established and currently growing, such as Phoenix and Houston.

The researchers suggest that work like theirs is important because city planners need long lead times to prepare for either type of scenario. Cities that grow fast can experience strains on services, while those that shrink can suddenly find it difficult to provide services with a dwindling tax base.

More information: Uttara Sutradhar et al, Depopulation and associated challenges for US cities by 2100, *Nature Cities* (2024). [DOI: 10.1038/s44284-023-00011-7](https://doi.org/10.1038/s44284-023-00011-7)

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