

World Urbanization Prospects

The 2007 Revision

United Nations

Department of Economic and Social Affairs (DESA)

Population Division - Population Estimates and Projections Section

www.unpopulation.org



Revision 1, 16 January 2008



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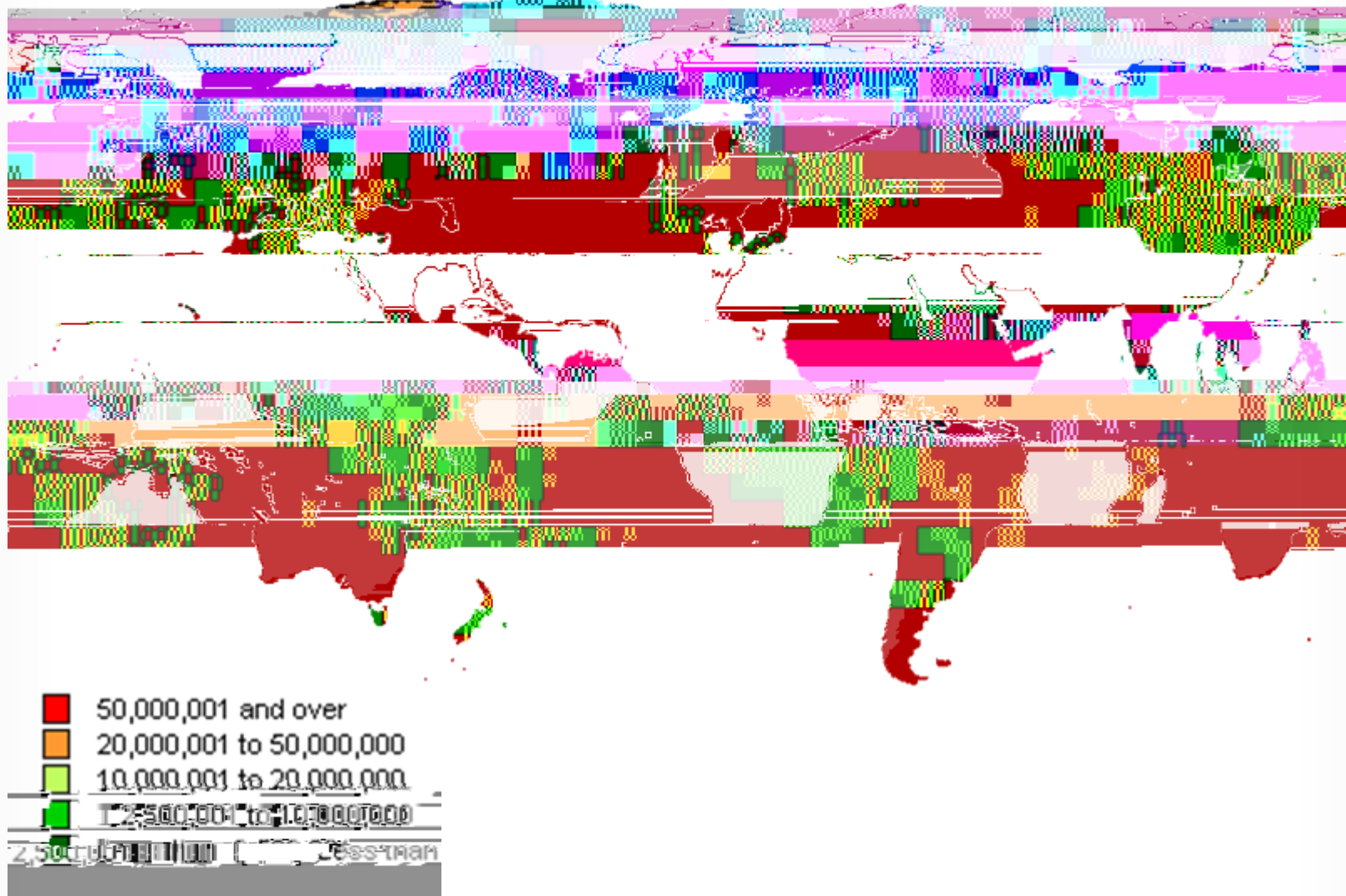
An Urbanizing World

By the end of 2008 half of the world's population
will live in urban areas.





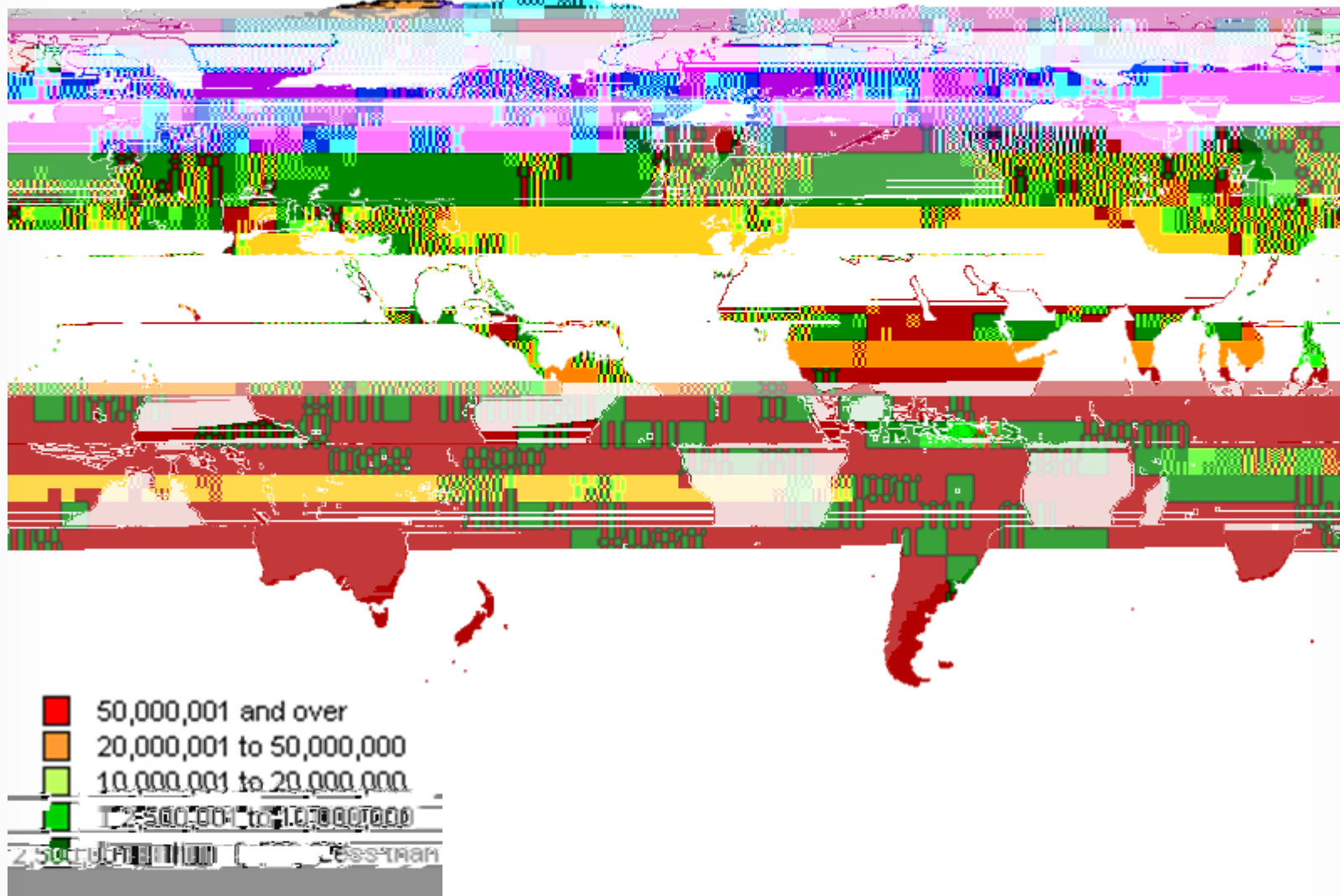
Population in urban areas, 2007



Source: UN Population Division/DESA, *World Urbanization Prospects: The 2007 Revision*, CD-Rom, 2008.



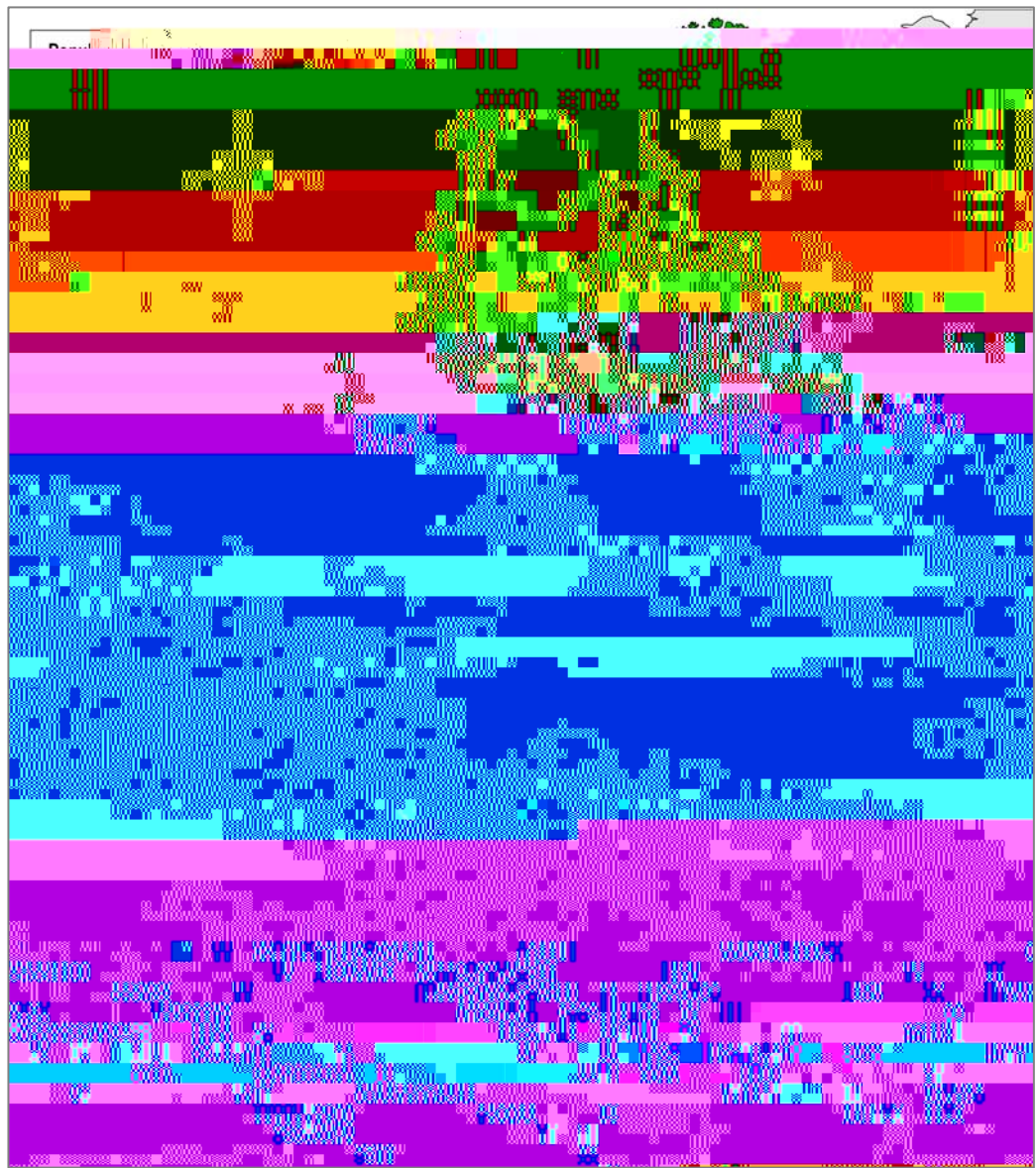
Population in urban areas, 2050



Source: UN Population Division/DESA, *World Urbanization Prospects: The 2007 Revision*, CD-Rom, 2008.



Population density in Europe, 2000



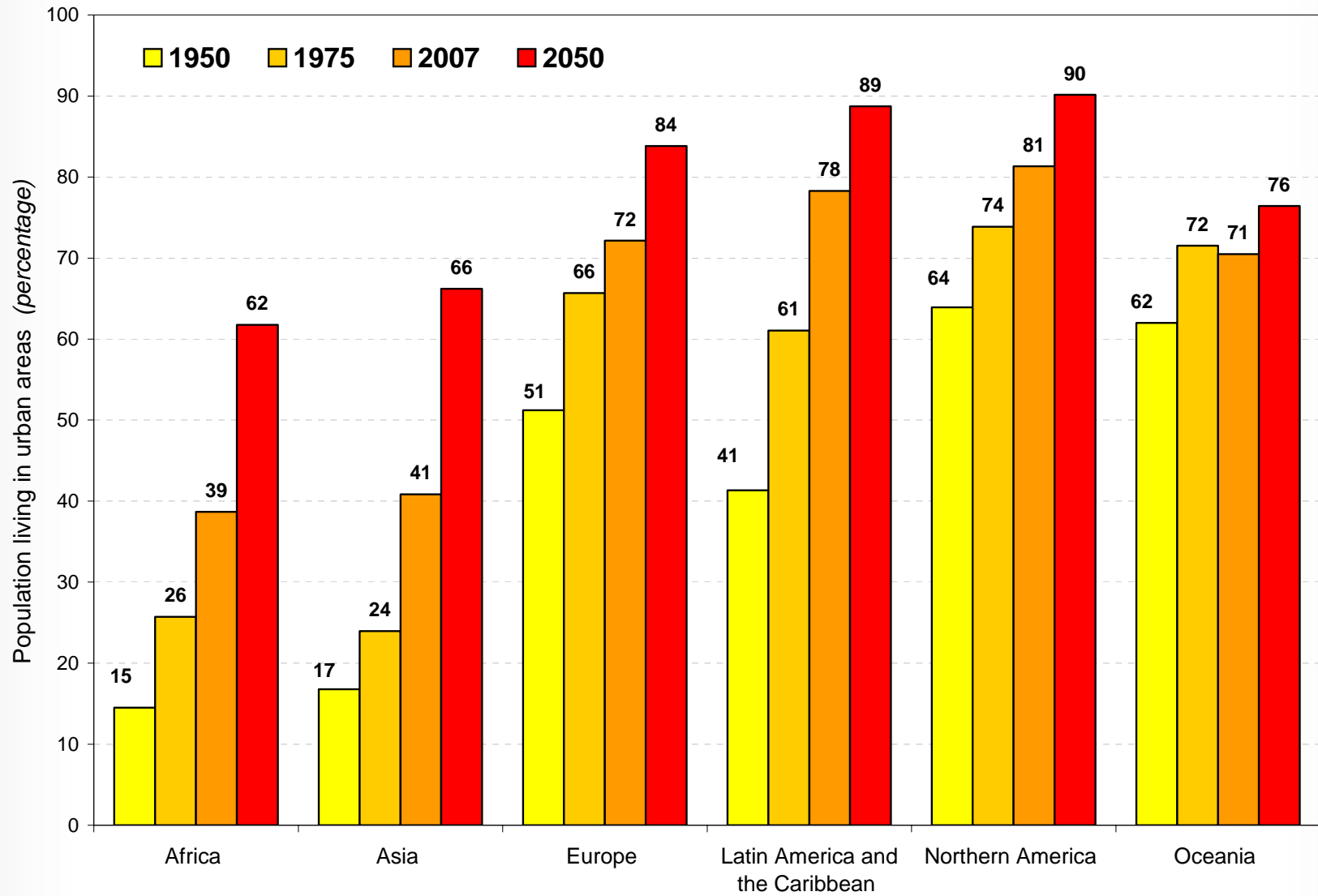
Source: IIASA, ERD Project



Rural and urban population by development region, 1950-2050



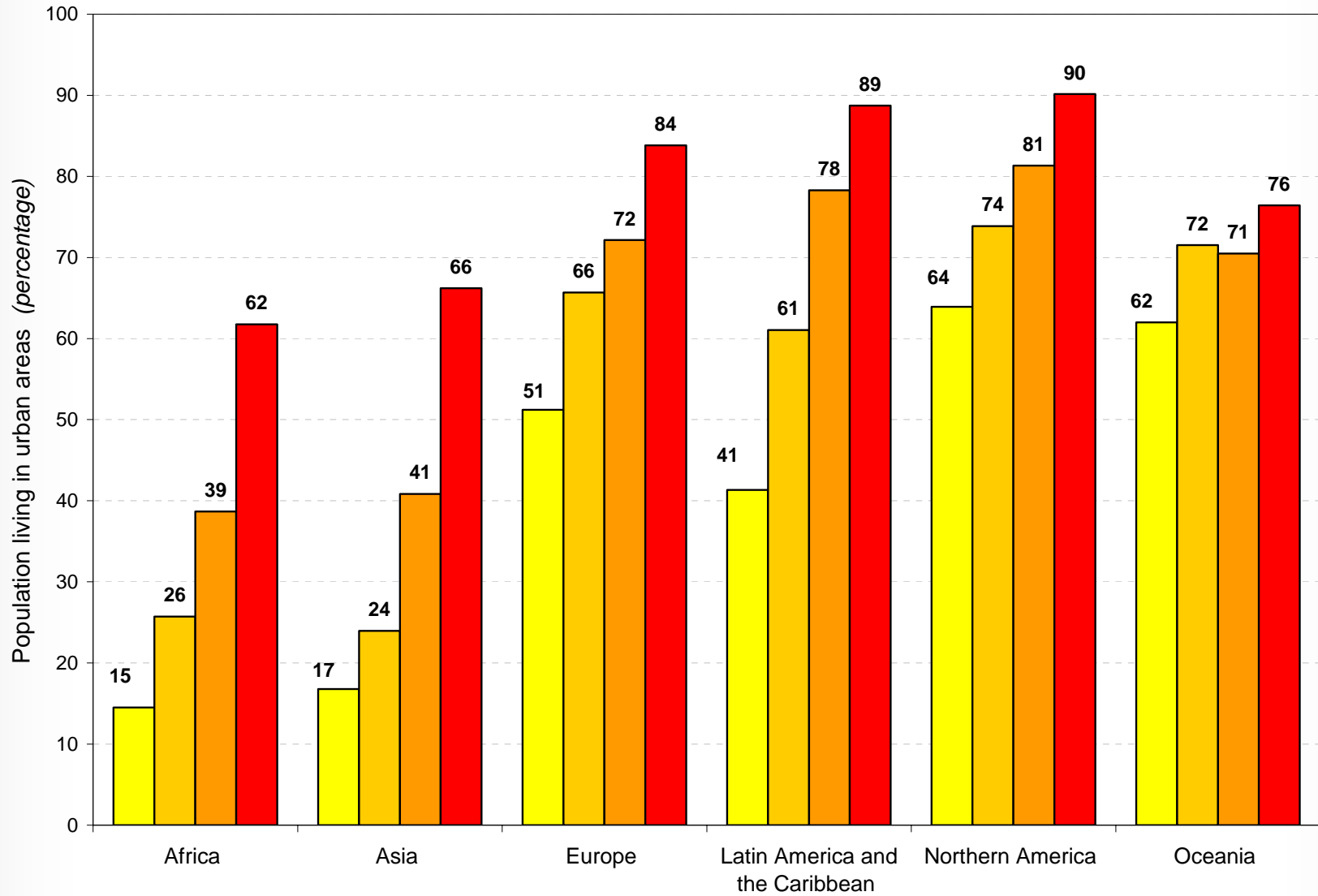
Percentage of population living in urban areas by geographical regions



Source: UN Population Division/DESA, *World Urbanization Prospects: The 2007 Revision*, CD-Rom, 2008.



Percentage of population living in urban areas by geographical regions

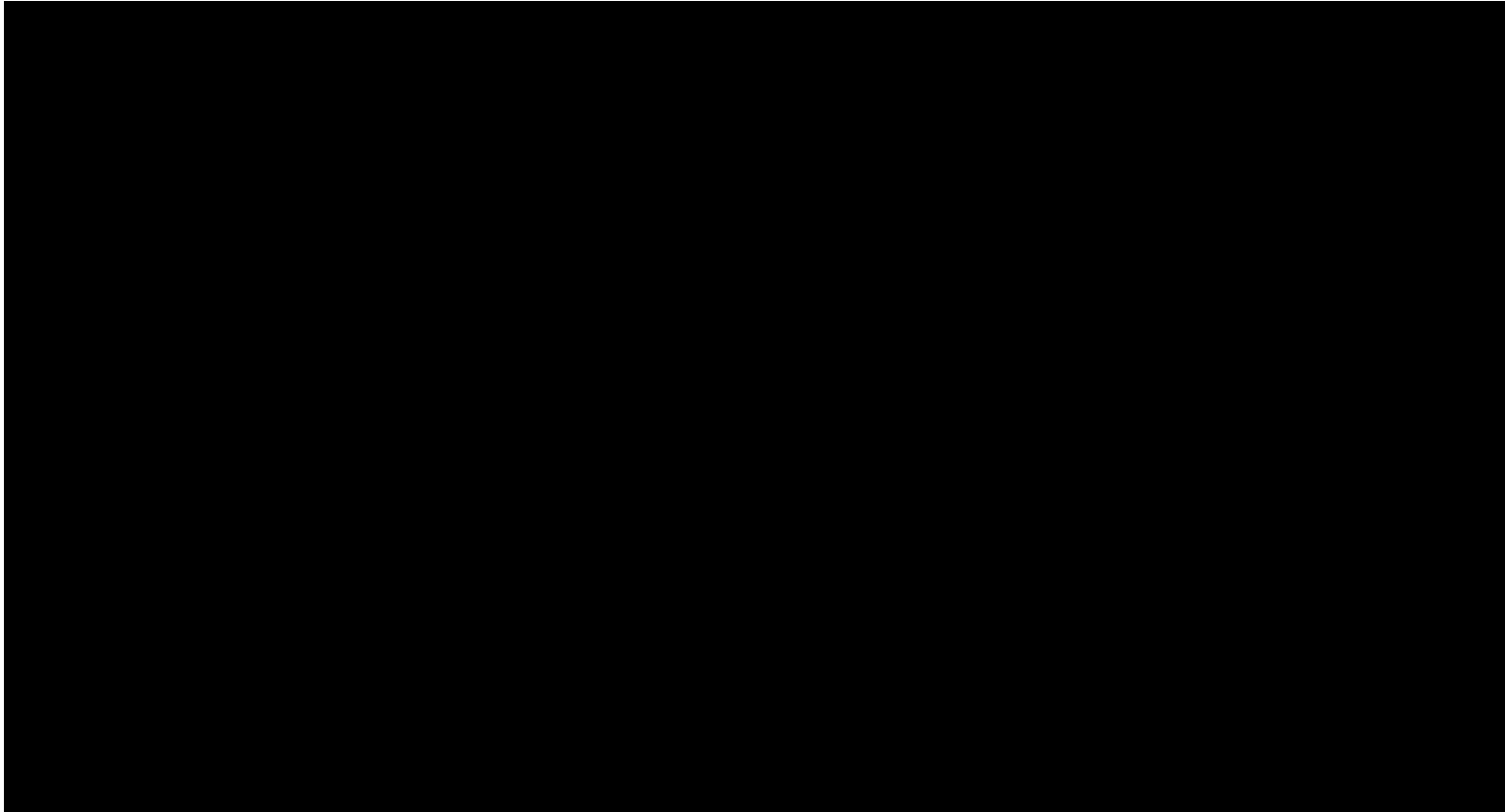




Contribution of rural and urban population growth to total population growth



Urban and rural populations by major area, selected periods, 1950-2050



Source: UN Population Division/DESA, *World Urbanization Prospects: The 2007 Revision*, CD-Rom, 2008.



City Growth / Urban Agglomerations



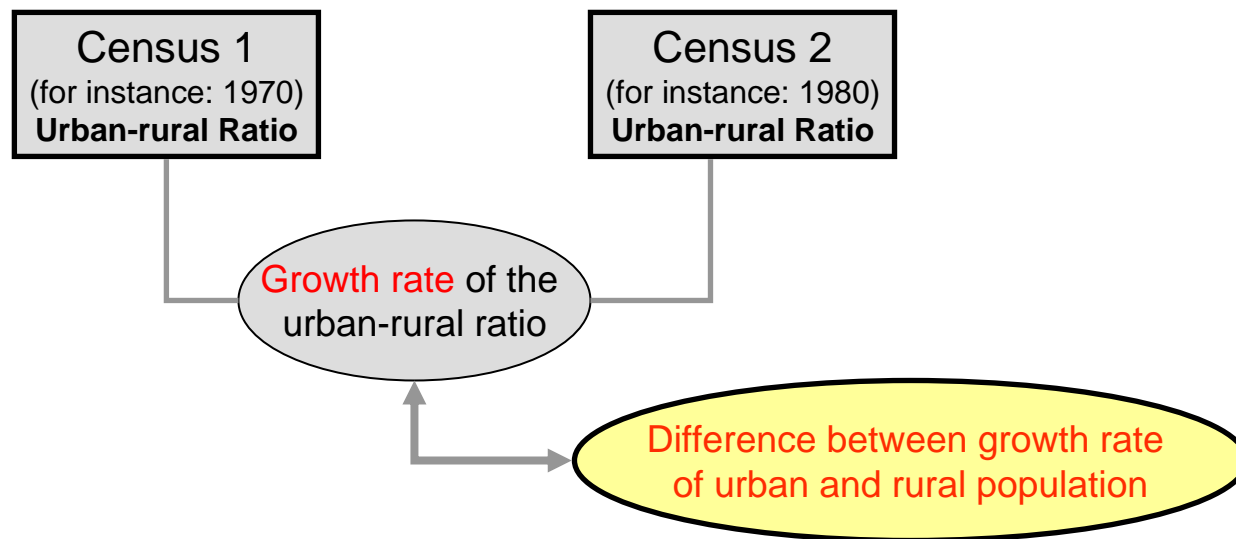




Projection Methods



Projection methods: Urban population (1)



Step 1: The URR is the basis for interpolation and extrapolation of the urban population. The projection uses the most recent **urban-rural growth difference** in a **logistic equation**. The proportion urban reaches its maximum growth rate when the proportion urban is 50% and declines to its asymptotic value of zero when the proportion urban is 100%.



Projection methods: Urban population (2)

Normally, an extrapolation based on a simple logistic curve would imply that the urban-rural growth difference remains constant over the projection period. Empirical evidence shows that this is unrealistic.

Step 2: “Global Norm”

A simple model is used to reduce the value of the urban-rural growth difference by calculating a hypothetical urban-rural growth difference (hrur) according to the following formula:

$H_{rur} = 0.037623 - 0.02604 P_U(t_0)$; $P_U(t_0)$ is the proportion urban at the time of the initial census

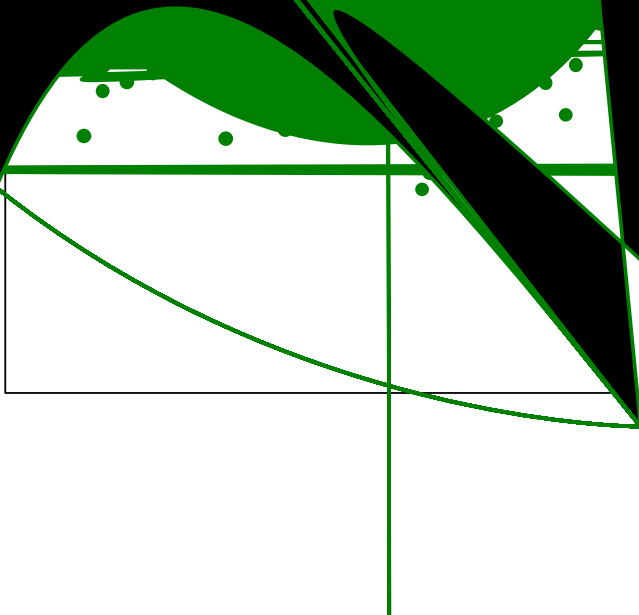
Essentially, this means that with *increasing* (initial) urbanization, the value of the hypothetical urban-rural growth difference (hrur) *decreases*.

In other words:

With growing urbanization the urbanization process slows down!

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United Nations Department of Economic and Social Affairs





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Challenges



Challenges in estimating and projecting city populations

Practical challenges

- City names in foreign languages can be easily mixed up (Chinese)
- Large amount of data (6000+ cities) in time-series

Methodological challenges

- Definitions change from country to country
- Definitions change over time (no consistency in time-series)
- City boundaries are not drawn consistently (some cities include large rural areas, others don't)
- Neighboring cities may merge into one urban agglomeration
- Small cities / villages may become huge cities due to special development measures (Shenzhen, “airport cities”)
- Reclassification of settlements (from village to town to city)



Challenges: Distribution of countries according to the criteria used in defining **urban areas** (2005 Revision)

| Criterion | Sole use | Used in conjunction with other criteria | Percentage according to sole use | Percentage according to use in conjunction with other criteria |
|--|----------|---|----------------------------------|--|
| Administrative | 81 | 126 | 35.5 | 55.3 |
| Economic | - | 29 | - | 12.7 |
| Population size/density | 59 | 112 | 25.9 | 49.1 |
| Urban characteristics | 4 | 26 | 1.8 | 11.4 |
| Administrative and population | 13 | - | 5.7 | - |
| Administrative and urban characteristics | 5 | - | 2.2 | - |
| Economic and population | 5 | - | 2.2 | - |
| Population and urban characteristics | 7 | - | 3.1 | - |
| Administrative, economic and population size | 18 | - | 7.9 | - |
| Administrative, urban characteristics and | | | | |
| | | | | |
| | | | | |

Challenges: Distribution of countries according to the criteria used in defining **city populations** (2005 Revision)

| Criterion | Sole use | Used in conjunction with other criteria |
|--|------------|---|
| City proper | 109 | 123 |
| Urban agglomeration | 87 | 103 |
| Metropolitan area | 12 | 21 |
| Capital is urban agglomeration; other cities are city proper, urban agglomerations or metropolitan areas | 8 | 0 |
| Capital is city proper; other cities are city proper, urban agglomerations or metropolitan areas | 3 | 0 |
| Capital is metropolitan area; other cities are city proper, urban agglomerations or metropolitan areas | 7 | 0 |
| Not defined | 2 | 4 |
| Total number of countries or areas | 228 | |



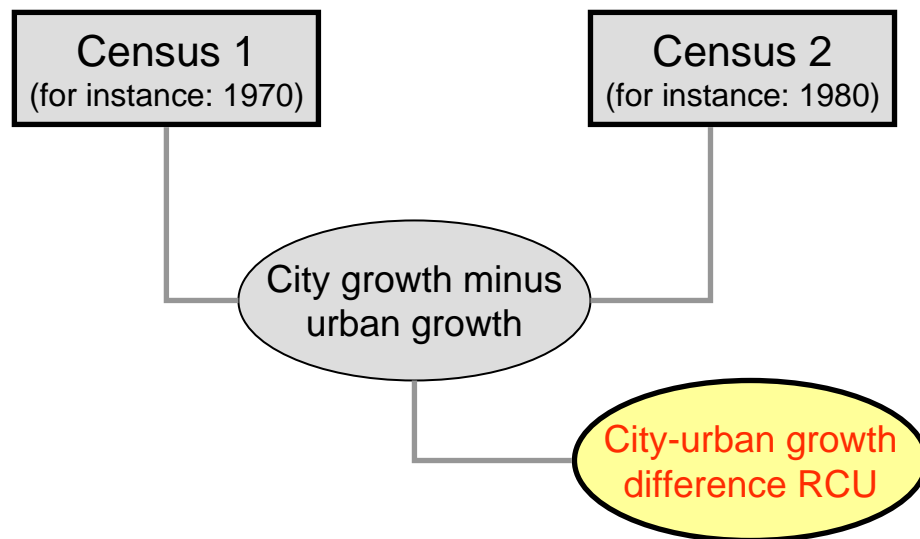
Thank You !

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Projection methods: City population (1)



The projection of city populations is similar to the projection of urban populations:

Step 1: The city-urban growth difference (RCU) is the difference between the rate of city population growth and the rate of total urban population growth. A **logistic regression** is used to project this city-urban growth difference.



Projection methods: City population (2)

Normally, an extrapolation based on a simple logistic curve would imply that the city-urban growth difference remains constant over the projection period. Empirical evidence shows that this is unrealistic.

Step 2: “Dampening of city growth”

A simple model is used to reduce the value of the city-urban growth difference by using a model that was calibrated on empirical data for dampening city growth.

Essentially, this means that with *increasing* (initial) city size, the value of the projected city-urban growth difference (hrcu) *decreases*.

In other words:

Larger cities grow slower!