

# Urbanization and Health Inequity: The case of Indonesia

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Challenges to Strong, Sustainable and Balanced Growth

View from G20 countries

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# I. Urbanization, Income, Income Inequality, Health and Health Inequity

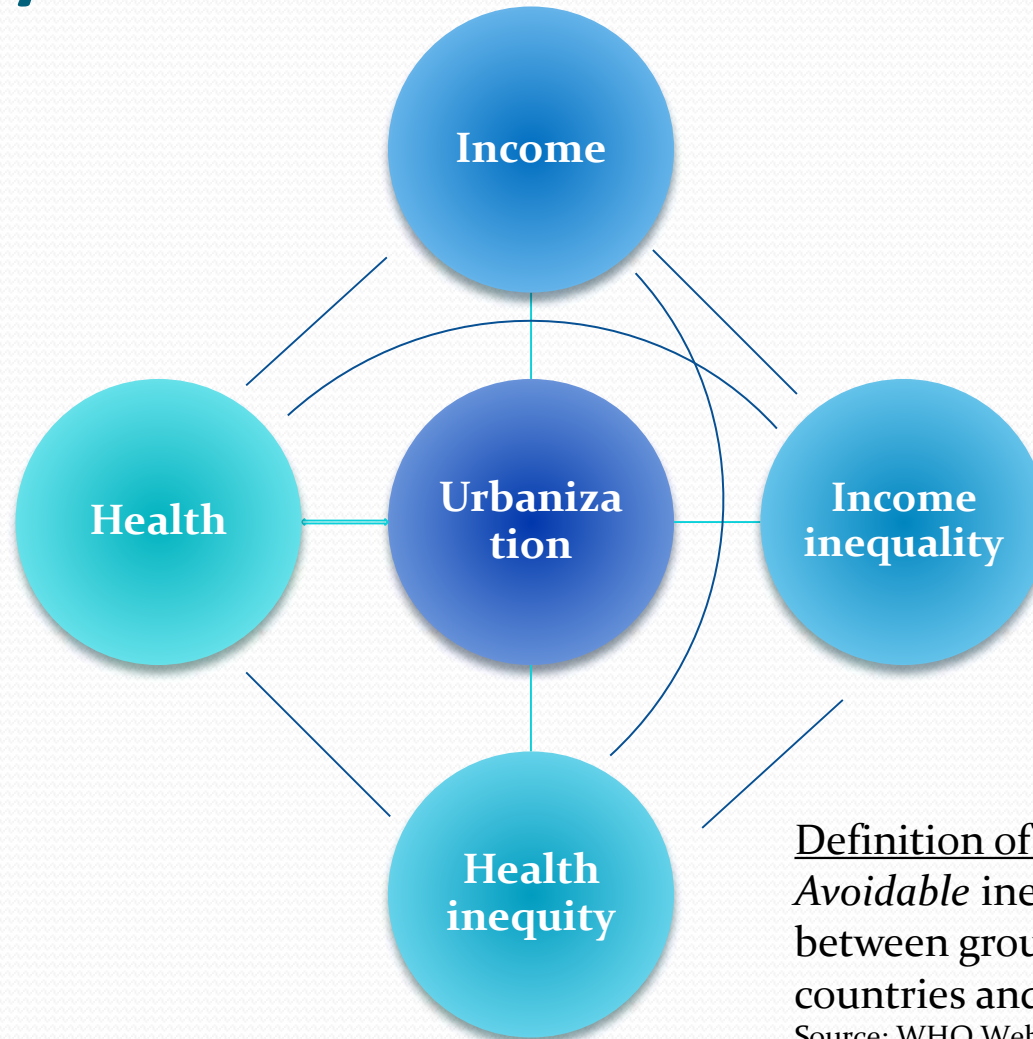
# G20 Key Messages (2015, Turkey)

“We see **rising inequalities** as a major problem among and within the countries. In order to address inequalities, we placed “**inclusive growth**” at the heart of our agenda. We believe reducing inequalities will contribute to **social cohesion** and **inclusive growth**.”

Available at:

<https://g20.org/wp-content/uploads/2015/08/G20-KEY-MESSAGES.pdf>

# Many unknowns:



Definition of health inequities (WHO):  
*Avoidable* inequalities in health between groups of people within countries and between countries.

Source: WHO Website (2015)

[http://www.who.int/social\\_determinants/thecommission/finalreport/key\\_concepts/en/](http://www.who.int/social_determinants/thecommission/finalreport/key_concepts/en/)

# Income, Income Inequality and Health

Absolute income hypothesis (Grossman, 1972; Preston, 1975):

- More income leads to better health

Relative income hypothesis (Wilkinson, 1997):

- People who feel more economically disadvantaged compared to their peers in a reference group are more likely to have poorer health. Low relative income may cause stress and depression leading to illness.

- Hundreds of studies: Ex.

Across countries:

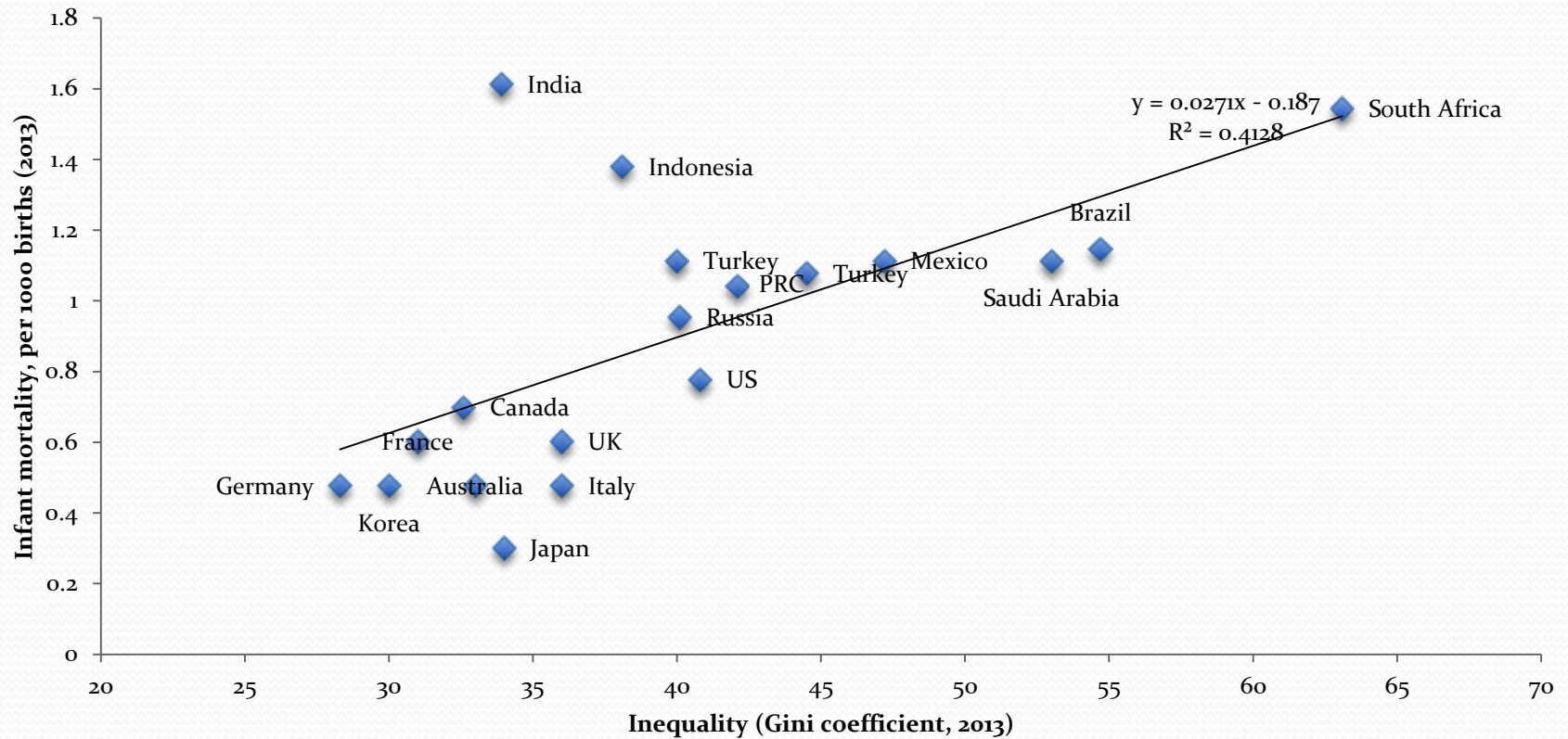
- Higher infant mortality and lower life expectancy

Within countries:

- More unequal provinces of PRC have less good health (Pei and Rodriguez, 2006)

# Relative income hypothesis (G20)

## Inequality and Infant Mortality (log)



# Why?

- More equal societies are healthier because they are more cohesive and enjoy better social relations (Wilkinson et al., 1997).
- Inequality and health are linked through psycho-social processes related to social differentiation and relative deprivation (Kondo et al., 2008).
- Reducing the income inequality could substantially improve health and avoid many deaths (The Equality Trust, 2014).

# Urbanization and Health

If badly planned, urbanization leads to informal settlements with insufficient housing, poor sanitation and crowding:

- Spread of infectious diseases, especially waterborne diseases
- Increase in mental disorders and violence-related disabilities
- Exposure to high-levels of air pollution and in-door pollution
- Ex: Antai and Moradi (2010) for Nigeria

Moving into urban centers triggers a change in lifestyle:

- Increase in risk factors for NCDs (physical inactivity, tobacco use, harmful use of alcohol and unhealthy diet)
- Surge in non-communicable diseases
- Ex. Allender et al. (2011) for Sri Lanka

# Urbanization and Health

Urbanization can also mean:

- Improved access to health care services and medicines
- Improved access to education
- Possibly easier access to safe water and improved sanitation
- Ex. Van de Poel (2007) for children in developing countries

# Urbanization, Health and Health Inequity in Indonesia

## Research questions:

1. Does urbanization lead to better health or worse health?
2. Does urbanization result in larger health inequities?
3. What are the main reasons behind rural and urban health inequities?



## II. Urbanization and Health Inequity in Indonesia

# Indonesian Household Survey

- Data: Indonesia Family Life Survey (IFLS)
- Waves: 4 waves starting in 1993/94
- Coverage: Household economy, demographic information, migration, socioeconomic status, health, etc.
- Number of observations (per wave): Around 30,000 individuals living in 13 of the 27 provinces.
- Our sample: Adults aged between 20 and 69.
- Year: 4<sup>th</sup> wave in 2007/08
- Number of obs.: 21,295
- Number of rural: 10,298
- Number of urban: 10,997

# Main variables

- Expenditures (of individual)
- Wealth (aggregate value of all assets)
- Underweight (BMI below 18.5)
- Overweight (above 25 BMI, but lower than 30)
- Obesity (BMI above 30)
- 10 chronic conditions:
  - Diabetes, Asthma, other lung conditions, heart attack, liver problems, stroke, cancer/malignant tumor, arthritis/rheumatism, uric acid/gout, and depression

# Methodology

- Concentration Index (CI):

- $CI = \frac{2}{N\mu} \sum_{i=1}^n h_i r_i - 1$  (Wagstaff et al., 2003)

- Concentration Curve:

- The cumulative percentage of the health (health problem) variables against the cumulative percentage of the population ranked from poorest to richest.

- Decomposition:

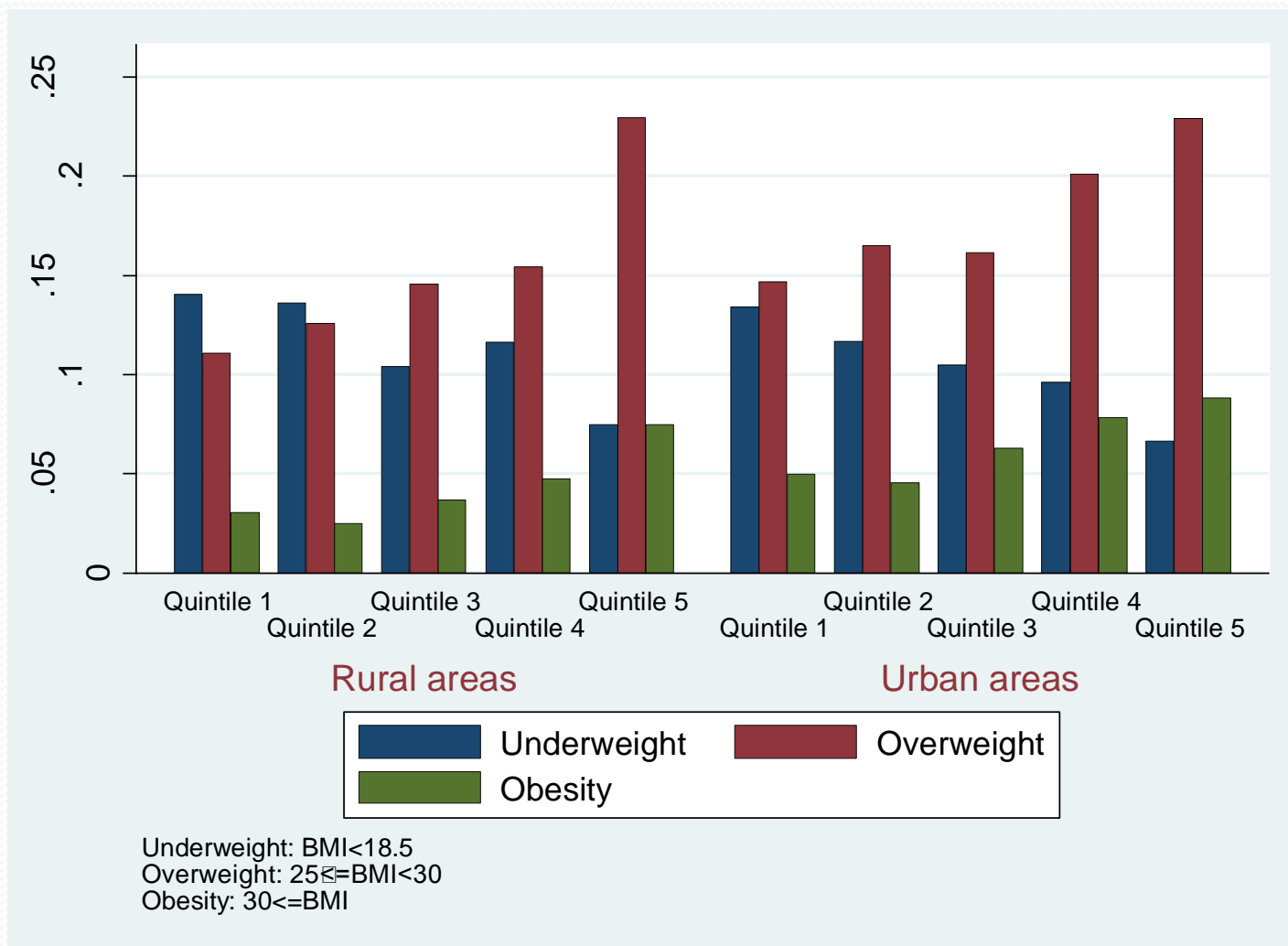
- $CI = \sum_k \frac{\beta_k \bar{x}_k}{\mu} CI_k + \frac{GCI_\varepsilon}{\mu}$  (Wagstaff et al., 2003)

# Health conditions: Rural vs. urban

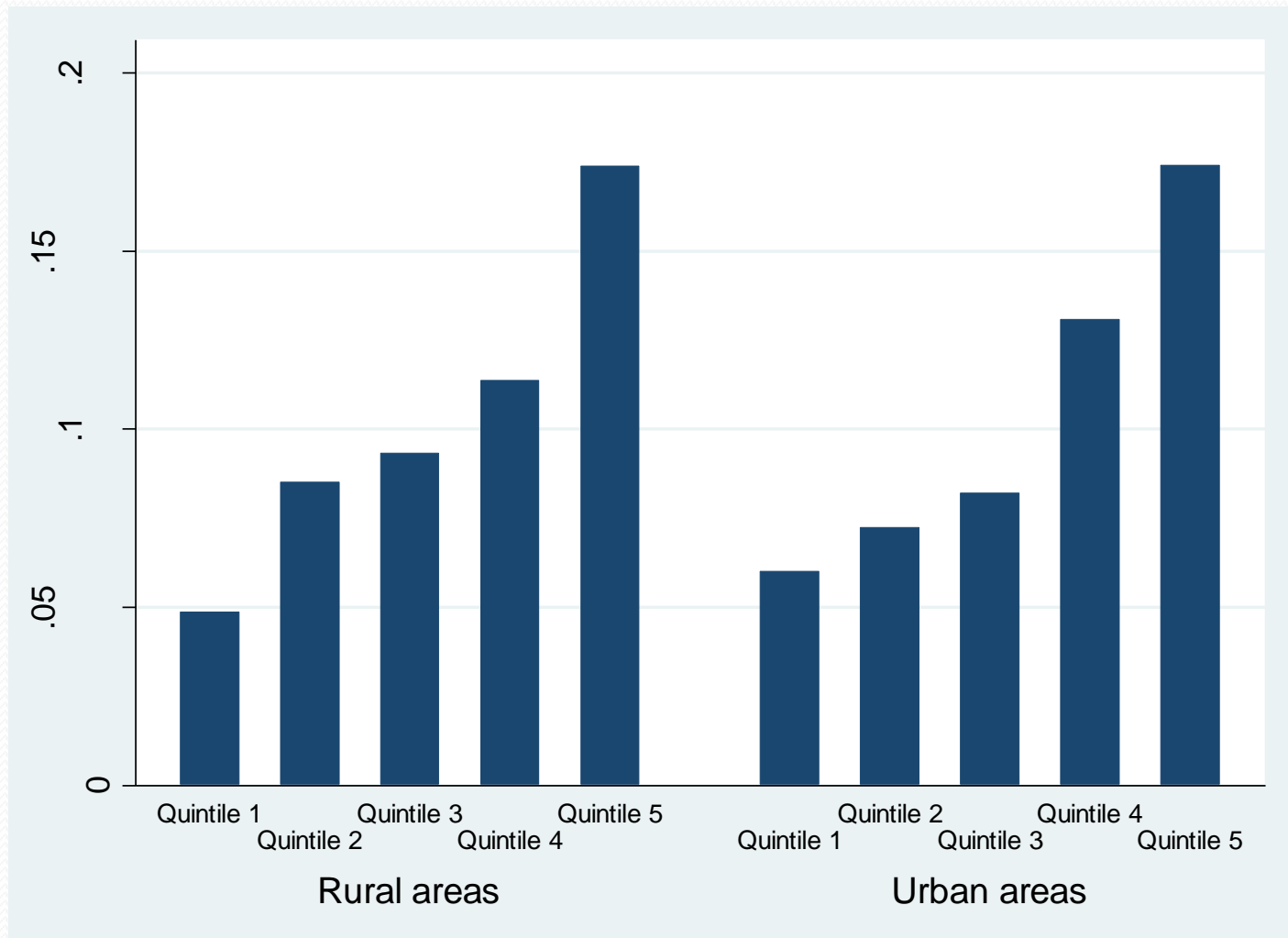
Variable	Rural	Urban
Underweight	0.128 (0.334)	0.111 (0.315)
Overweight	0.166 (0.372)	0.215 (0.411)
Obesity	0.040 (0.196)	0.068 (0.251)
Chronic conditions	0.105 (0.381)	0.123 (0.434)

Note: Mean values, standard errors in parenthesis

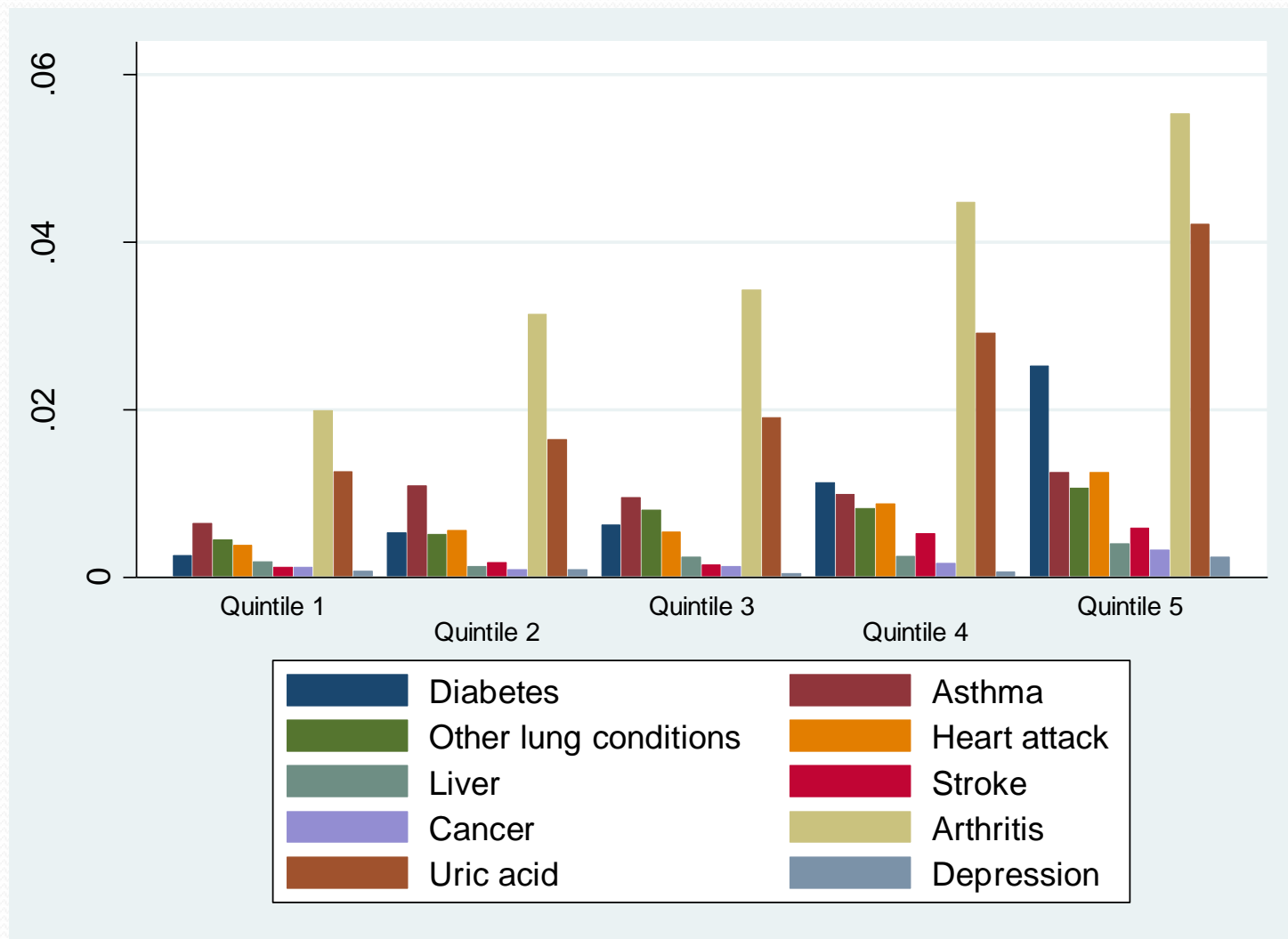
# Weight: Rural vs. urban



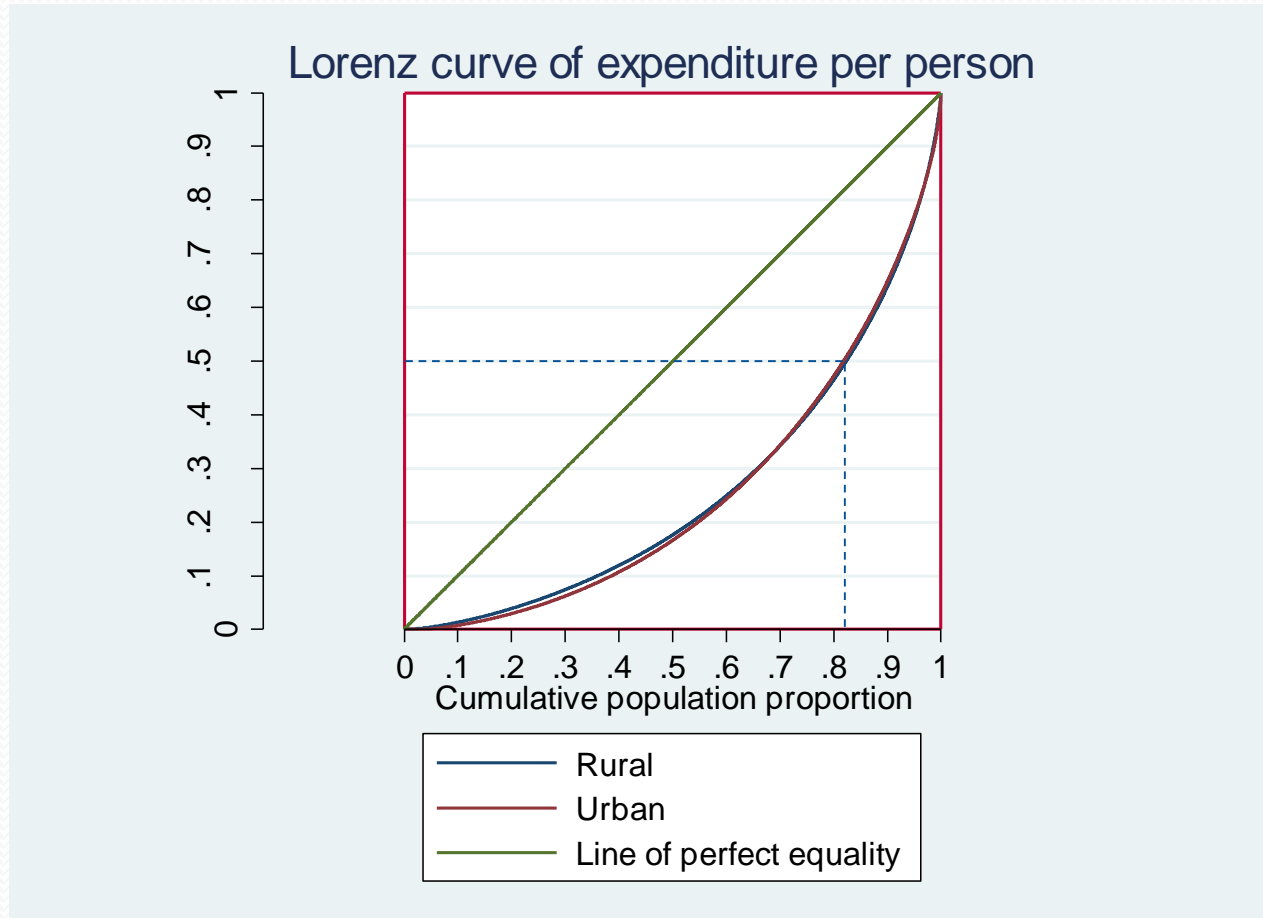
# Chronic conditions: Rural vs. urban



# Chronic Conditions

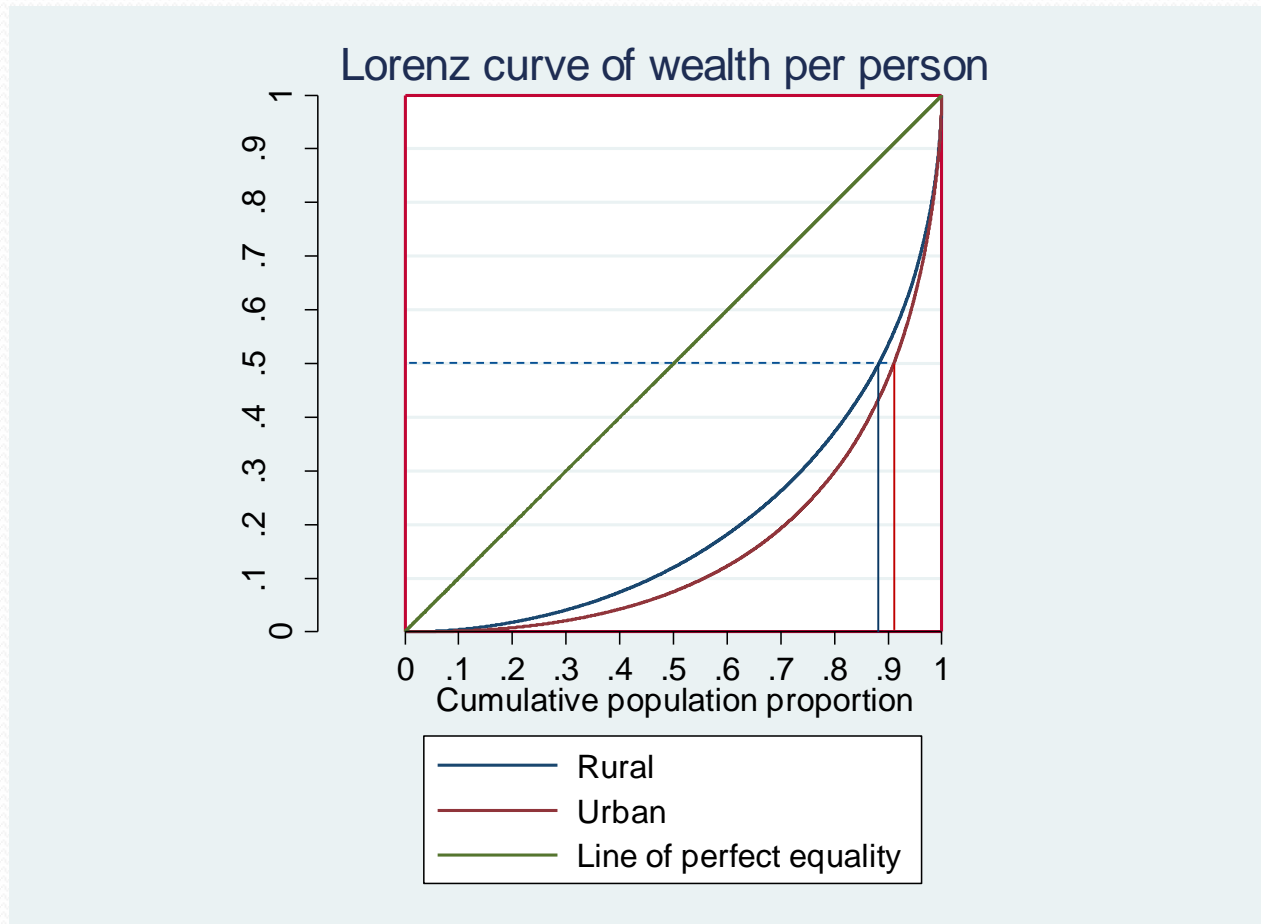


# Income inequality: Rural vs. urban



$$CI_R=0.48 \quad CI_U=0.49$$

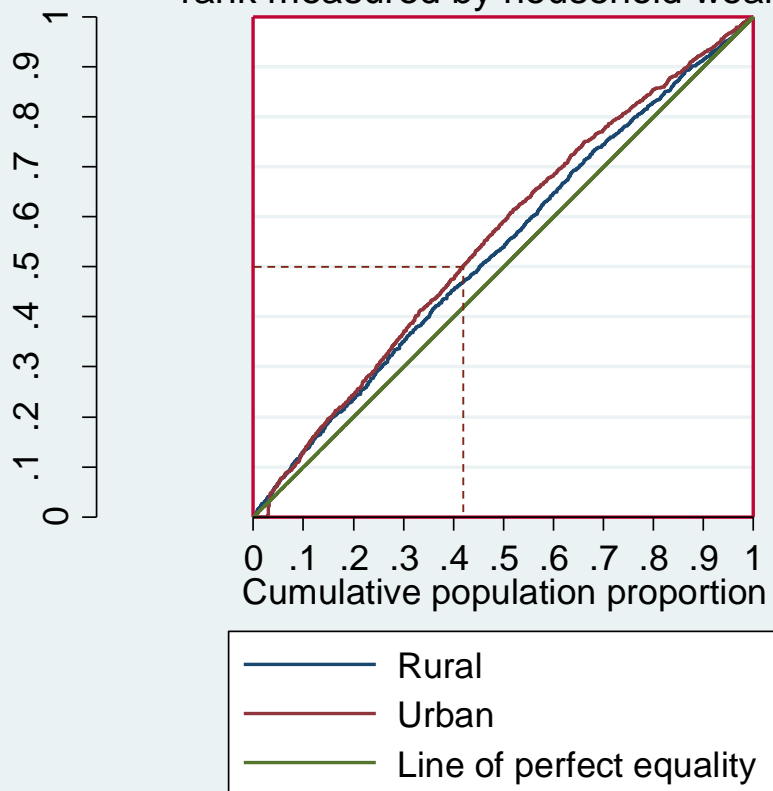
# Wealth inequality: Rural vs. urban



$$CI_R=0.59 \quad CI_U=0.67$$

# Underweight: Rural vs. urban

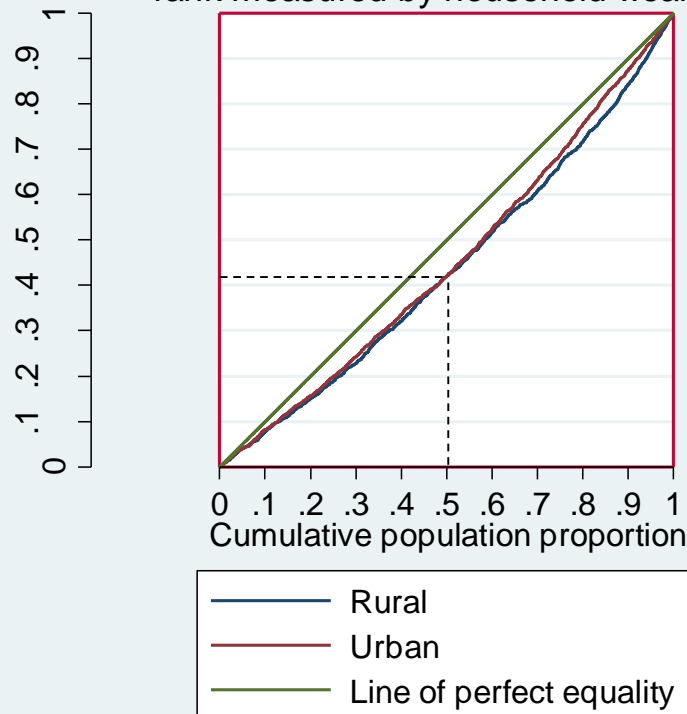
Concentration curve of underweight rank measured by household wealth\*



\* Family size adjusted wealth

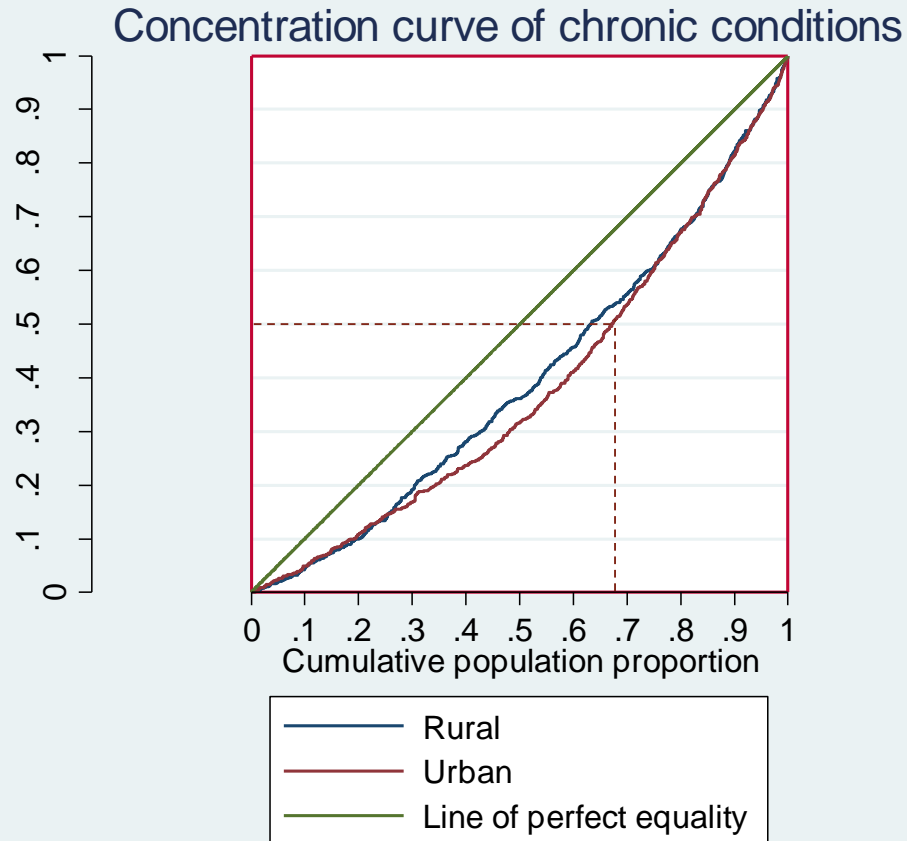
# Overweight: Rural vs. urban

Concentration curve of overweight rank measured by household wealth\*

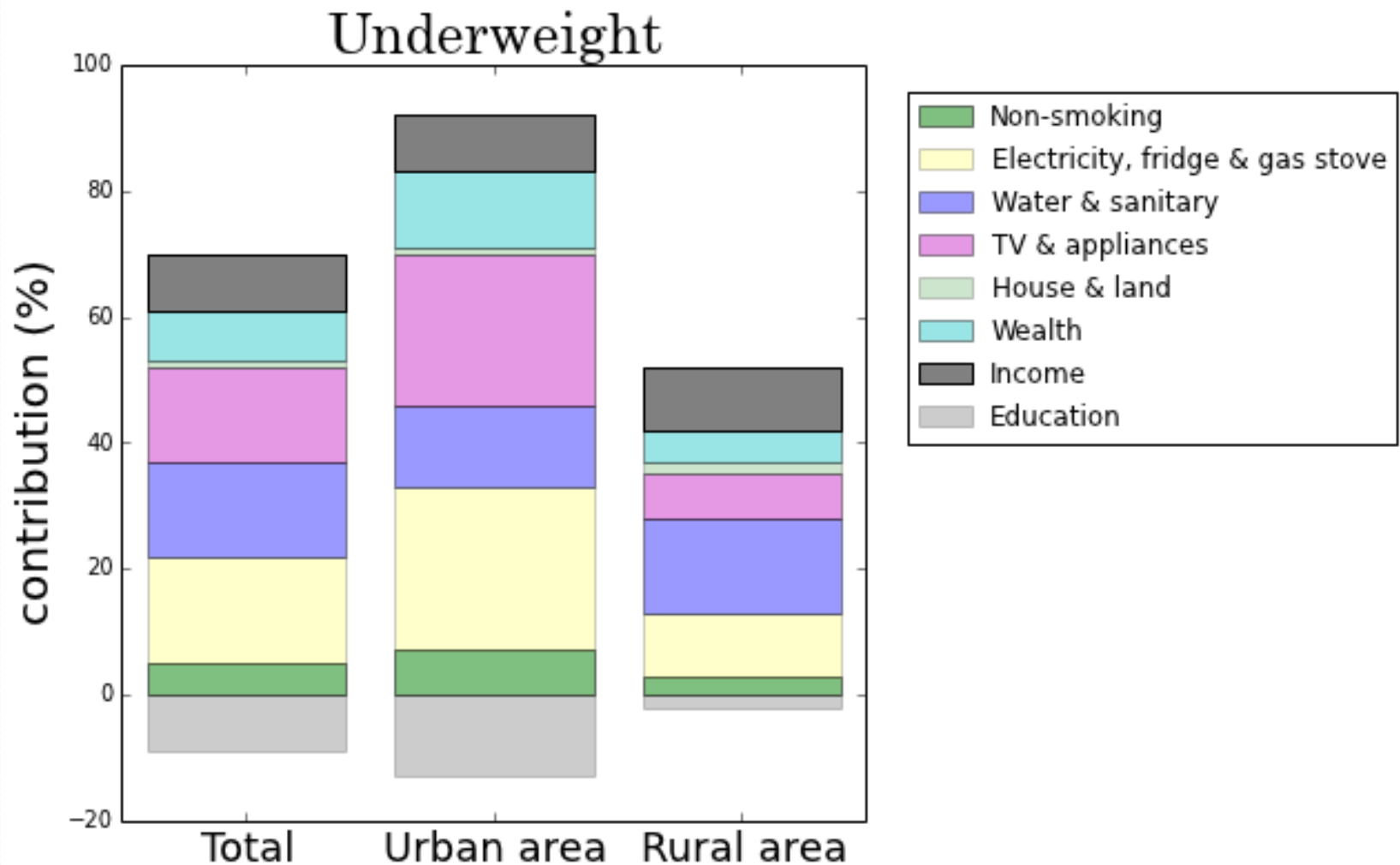


\* Family size adjusted wealth

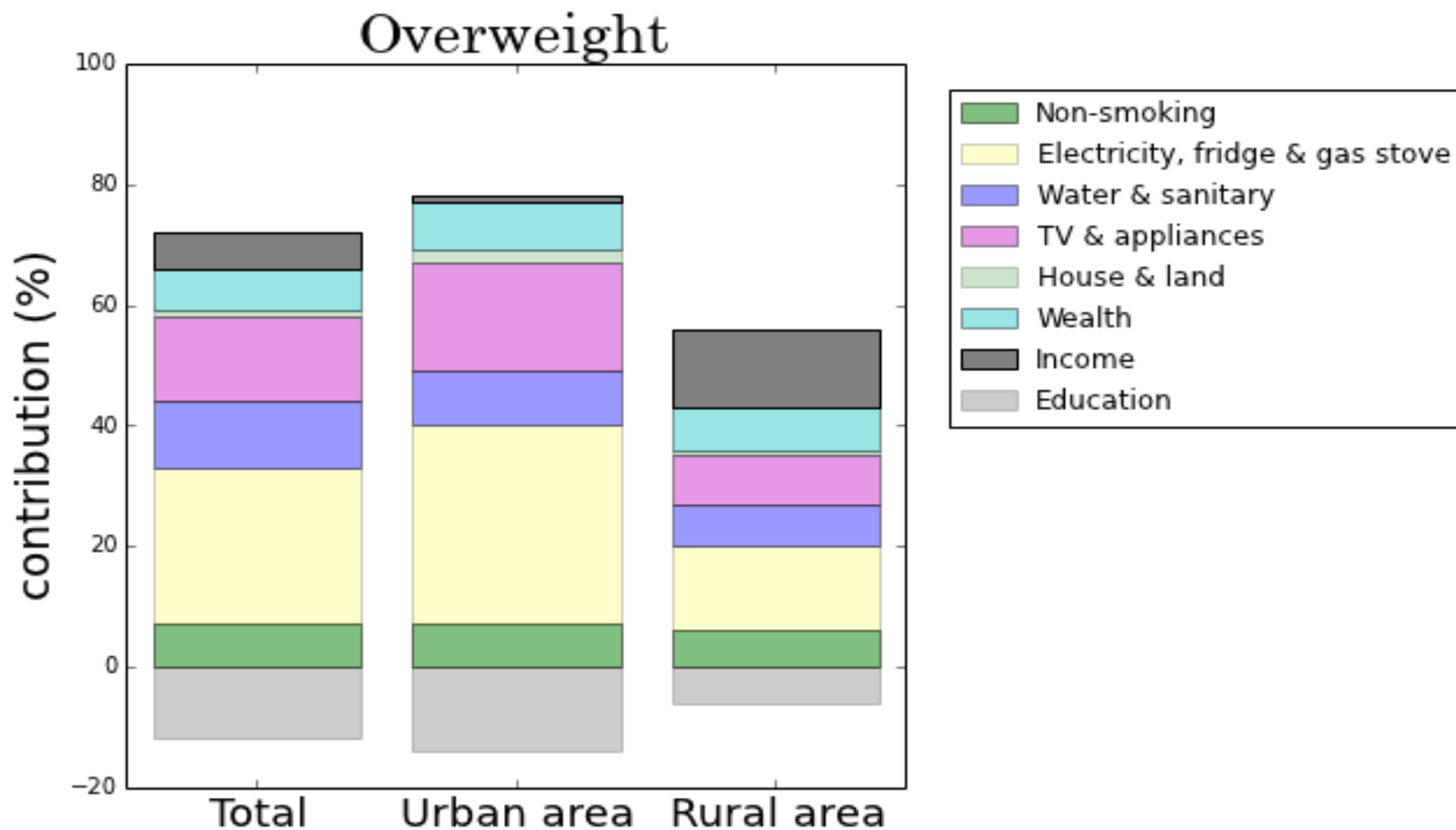
# Chronic conditions: Rural vs. urban



# Decomposition: Underweight



# Decomposition: Overweight



# Summary

- Urban areas in Indonesia have a similar income inequality compared to rural areas.
- Wealth is more unevenly distributed in cities.
- Rural areas have higher rates of underweight, but lower overweight and rates of chronic diseases.
- Urban areas have slightly higher health inequity for underweight compared to rural areas.
- Health disparities for overweight and chronic conditions are similar in urban and rural areas.
- Limitations: Selection bias, reporting bias

# IV. Conclusion

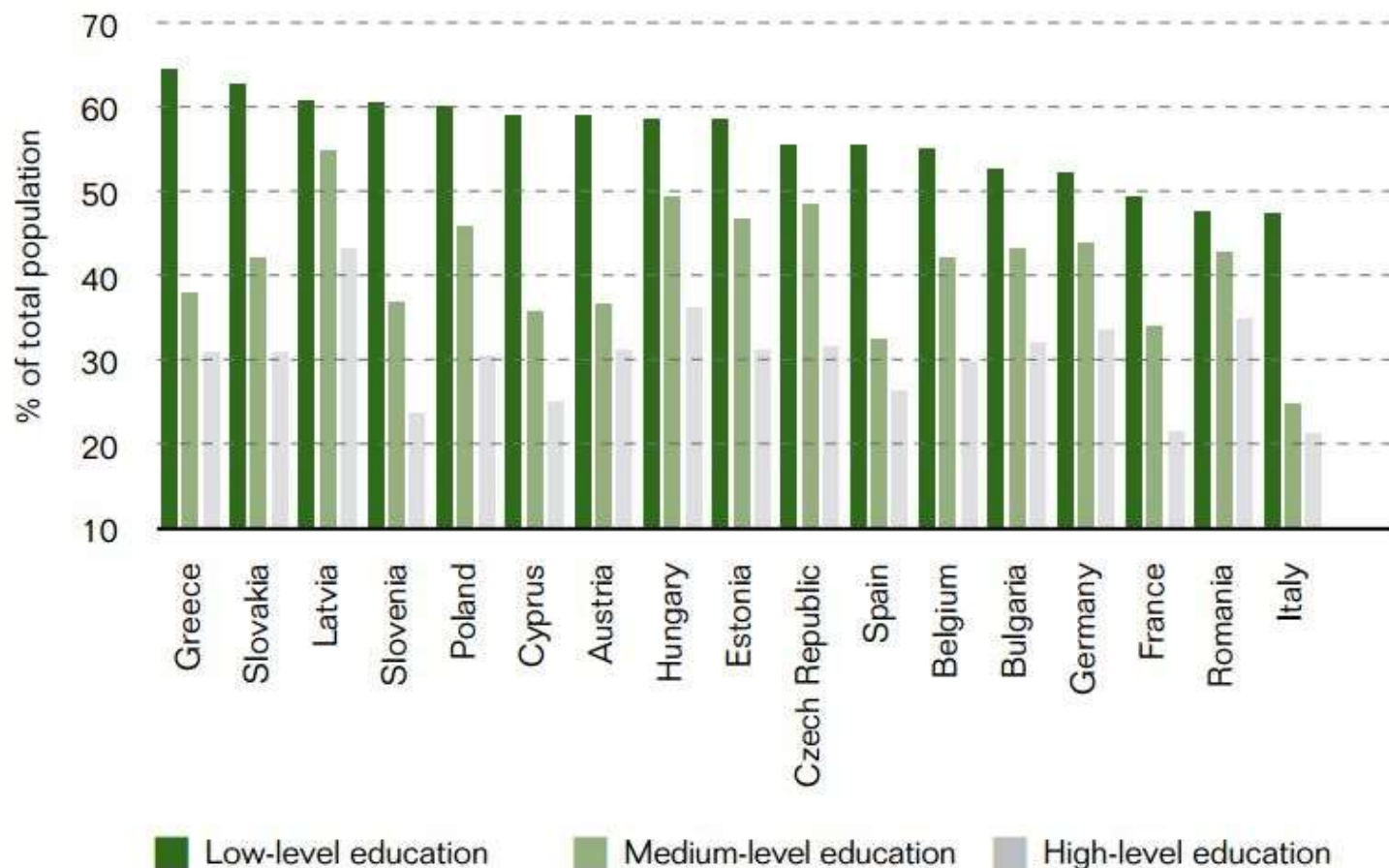
# Conclusion

- Obesity and chronic conditions particularly prevalent in urban areas, affecting more the affluent groups.
- Chronic diseases typically require long-term treatment which weighs heavily in private and/or public expenditures.
- More education needed about risky lifestyle in cities.
- Opportunities of urbanization to improve health should be seized.
- «Smart cities» should have big health component (walkable and livable) and ensure access to health care for all.
- More research needed to better understand nexus between urbanization, health and health inequity.

Thank you very much for  
your attention



Fig. 1. Overweight and obesity in women by educational level, 2009



Notes. Low-level education refers to pre-primary, primary and lower-secondary education; medium-level education refers to upper-secondary and post-secondary non-tertiary education; high-level education refers to tertiary education.

Source: Eurostat (4).