Association of internal migration with health outcomes in Indonesia

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Overview

- We explore whether internal migration flows are associated with chronic conditions at older ages in Indonesia
- Development has a significant influence on non-communicable diseases (NCDs) and can be transmitted across generations (Hanson et al. 2011)
- In developing countries, changes towards Western diet habits and sedentary activities are linked to an increase in obesity (Popkin 2001)

Migration and health

- Rural-urban migration produces major changes on economic development/growth
  (Harris, Todaro 1970; Todaro 1969, 1976, 1980; Todaro, Smith 2014, Saracoglu, Roe 2004)

- Migration also has short-term effects on
  - Health outcomes (Bakhromov, Levy 2013; Camlin et al. 2014; Doskoch 2011; Hirsch 2014; Luke et al. 2012; Mberu, White 2011; Weine, Kashuba, 2012; Xu et al. 2013)
  - Educational outcomes (Barban, White 2011)
  - Labor outcomes (Berker 2011; Boustan et al. 2010)

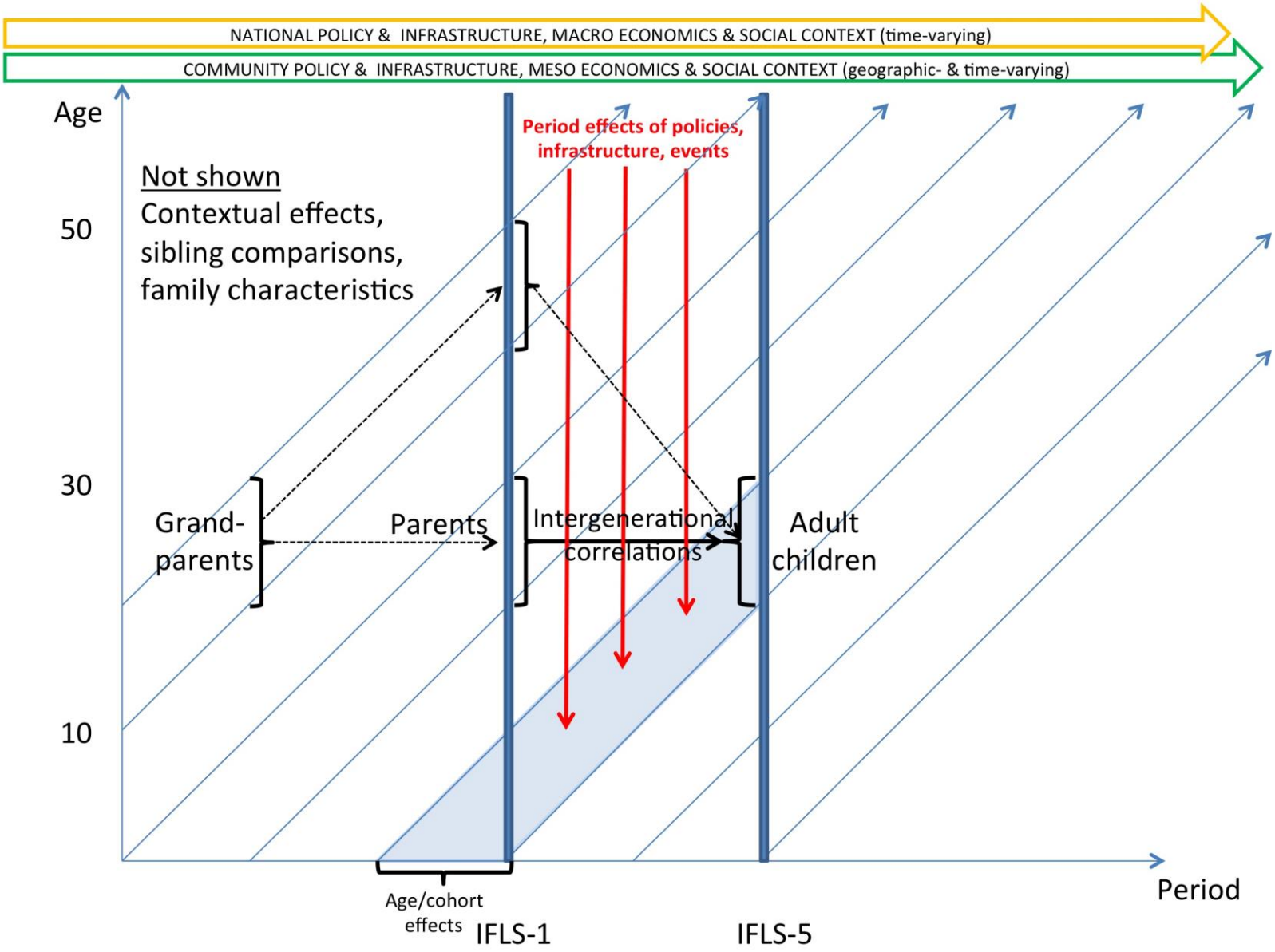
- We know little about the long-term health effects of urbanization in later life

Data

- Analyses on long-term effects of migration are rare in developing countries, because data are scarce (Kim et al. 2011; Joshi, Schultz 2013; Schultz 2008)

- Indonesian Family Life Survey (IFLS)
  - 1993/94, 1997, 2000, 2007/08
  - It represents 83% of the Indonesian population with data related to 13 of the 27 provinces
  - It covers a period characterized by rapid social, economic, and demographic changes

Framework



Source: Diagram elaborated by Narayan Sastry (University of Michigan & RAND Corporation).

Chronic conditions (dependent variable)

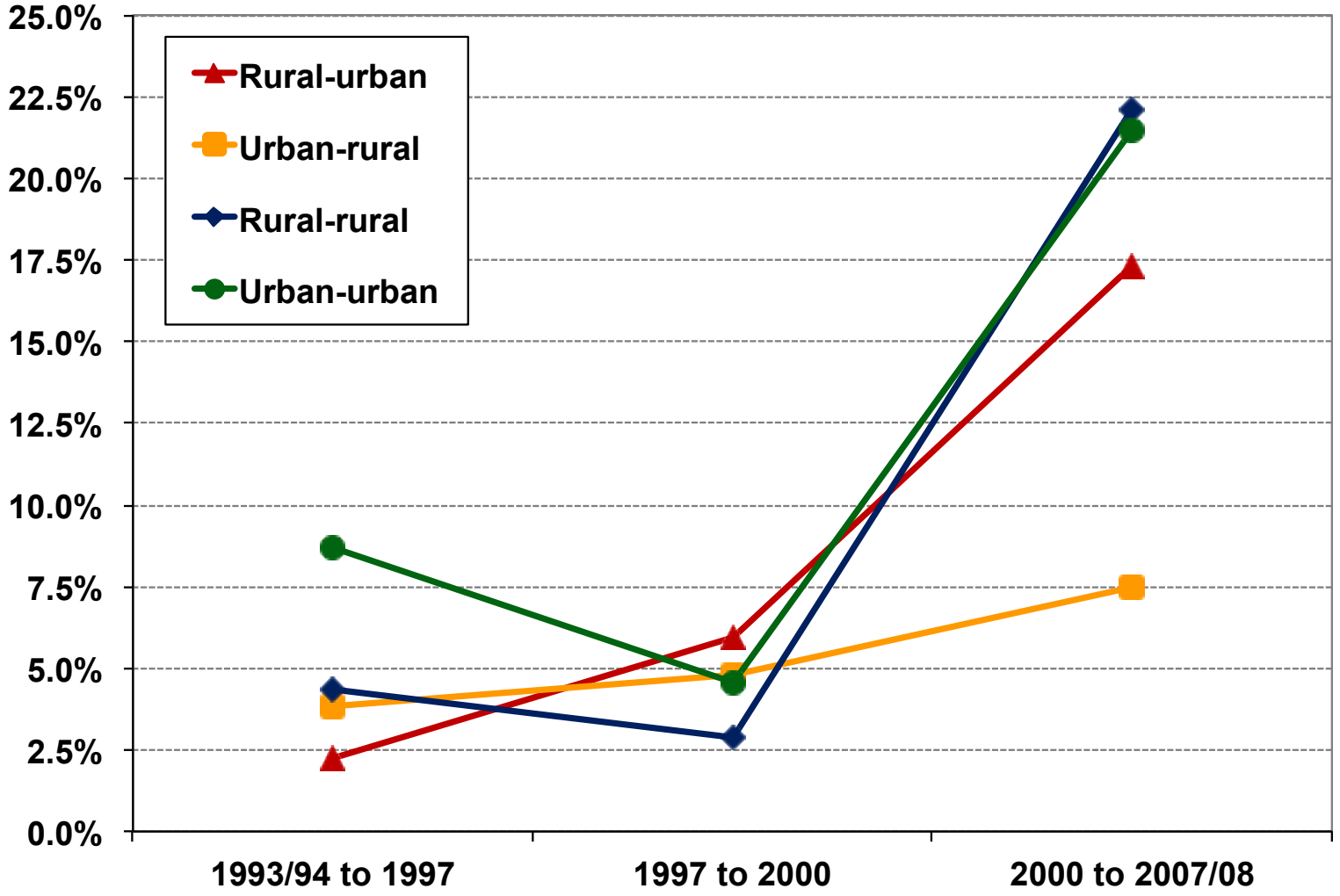
- People 40+ years of age in 2007/08
  - Hypertension
  - Diabetes
  - Tuberculosis
  - Asthma
  - Other lung problems
  - Heart problems
  - Liver
  - Stroke
  - Cancer, tumor
  - Arthritis, rheumatism
  - Uric acid, gout
  - Depression
- Sample size: 10,498 individuals
- Controls: married, men, younger people are less likely to report having chronic conditions

Migration flows (independent variable)

- First set of logistic models: 2000 to 2007/08
  1. Rural-urban
  2. Urban-rural
  3. Rural-rural
  4. Urban-urban
  5. Non-migrant in rural areas
  6. Non-migrant in urban areas

- Second set of logistic models
  - 4 waves: 1993/94, 1997, 2000, 2007/08
  - 18 categories of migration flows

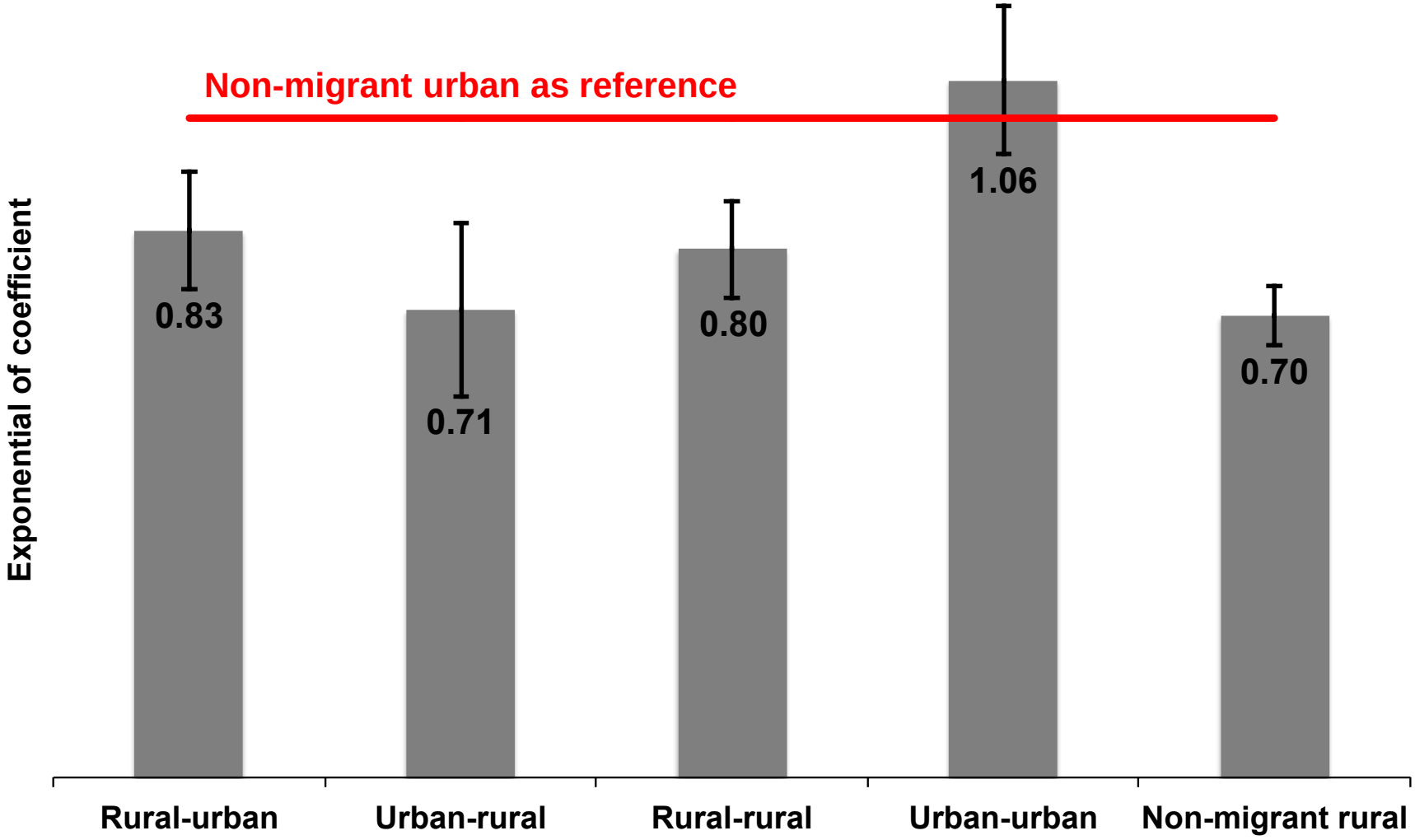
Migration rates



Non-migrant rural	**93.4%**	**91.2%**	**60.6%**
Non-migrant urban	**87.5%**	**90.6%**	**71.1%**

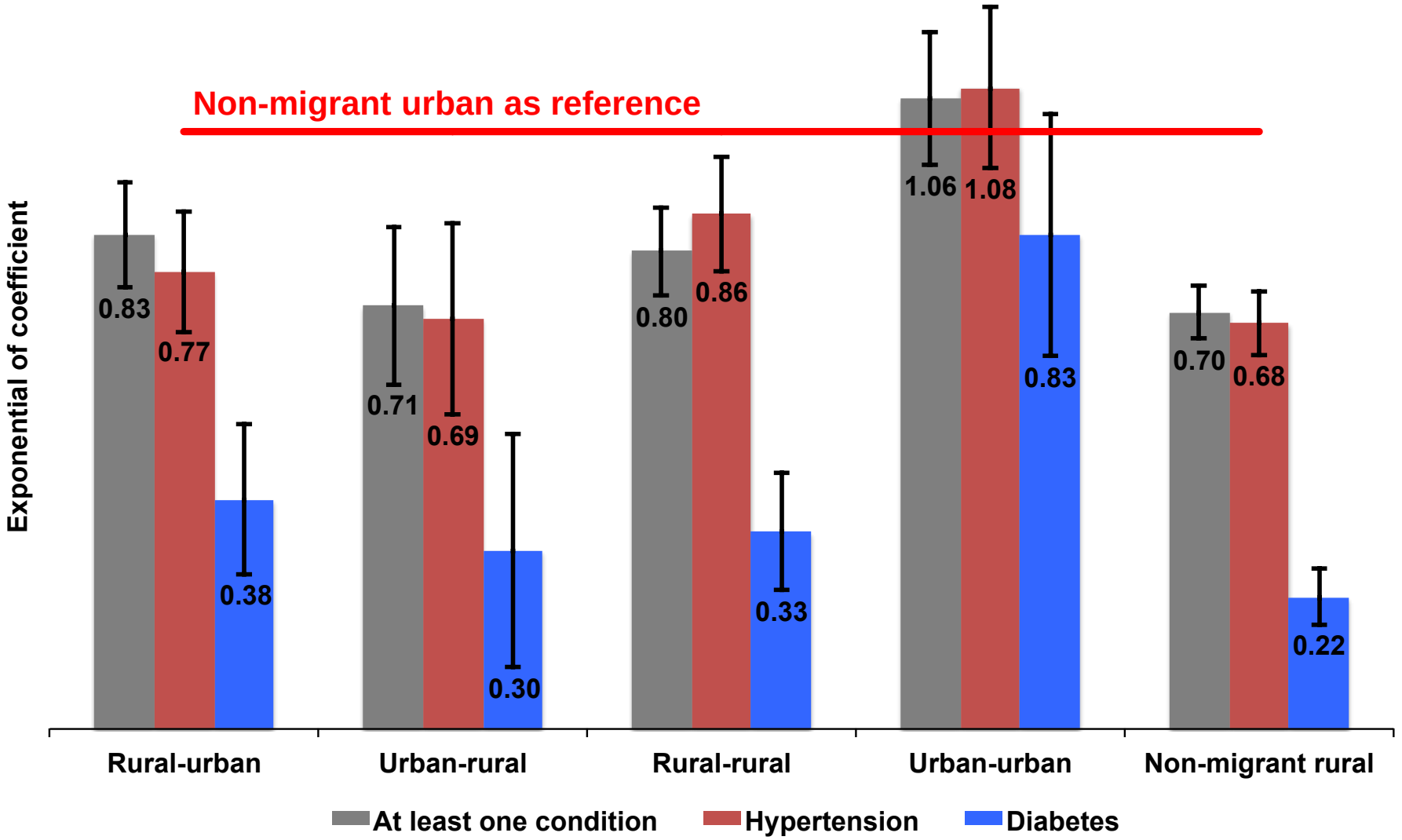
Source: Indonesian Family Life Survey (IFLS).

At least one chronic condition, 2000 to 2007/08



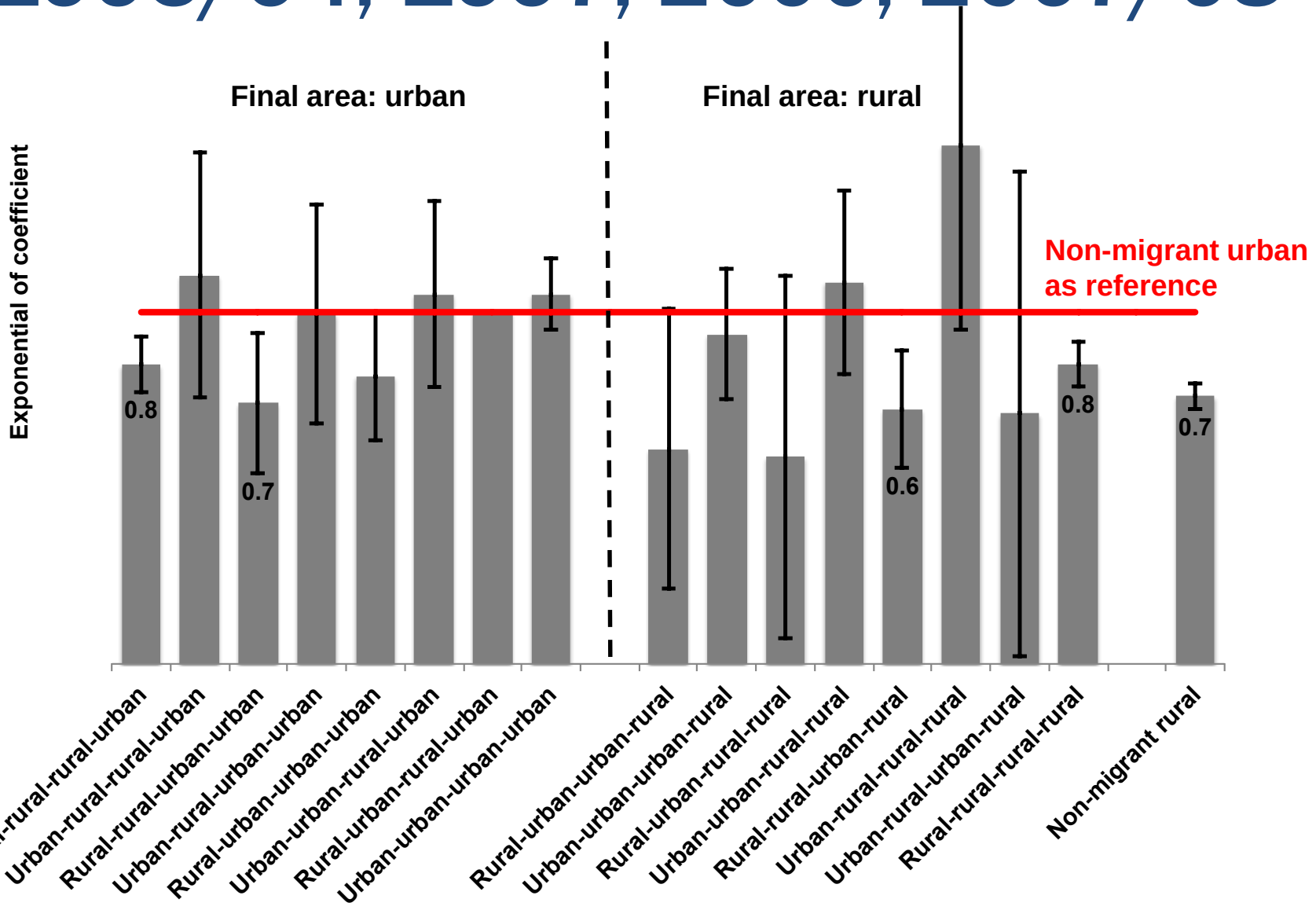
Source: Indonesian Family Life Survey (IFLS).

Hypertension and Diabetes, 2000 to 2007/08



Source: Indonesian Family Life Survey (IFLS).

At least one chronic condition, 1993/94, 1997, 2000, 2007/08



Source: Indonesian Family Life Survey (IFLS).

Final considerations

- Urban-urban migrant & non-migrant urban
  - Highest incidence of chronic conditions
- People who settle in rural areas after four waves
  - Lowest incidence of chronic conditions
- Consistent with nutrition hypothesis
  - Urban areas expose individuals to determinants of cardiovascular disease (e.g. diet, exercise)
  - Policies should be concerned with health outcomes in growing urban areas

Next steps

- Analyze intergenerational effects of migration
- Include contextual-level variables
- Deal with reverse causality of migration
- Add fifth IFLS wave: 2014/15