

Association of internal migration with health outcomes in Indonesia

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Overview

- Association between internal migration flows and chronic conditions at older ages in Indonesia
- Development has a significant influence on non-communicable diseases 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)

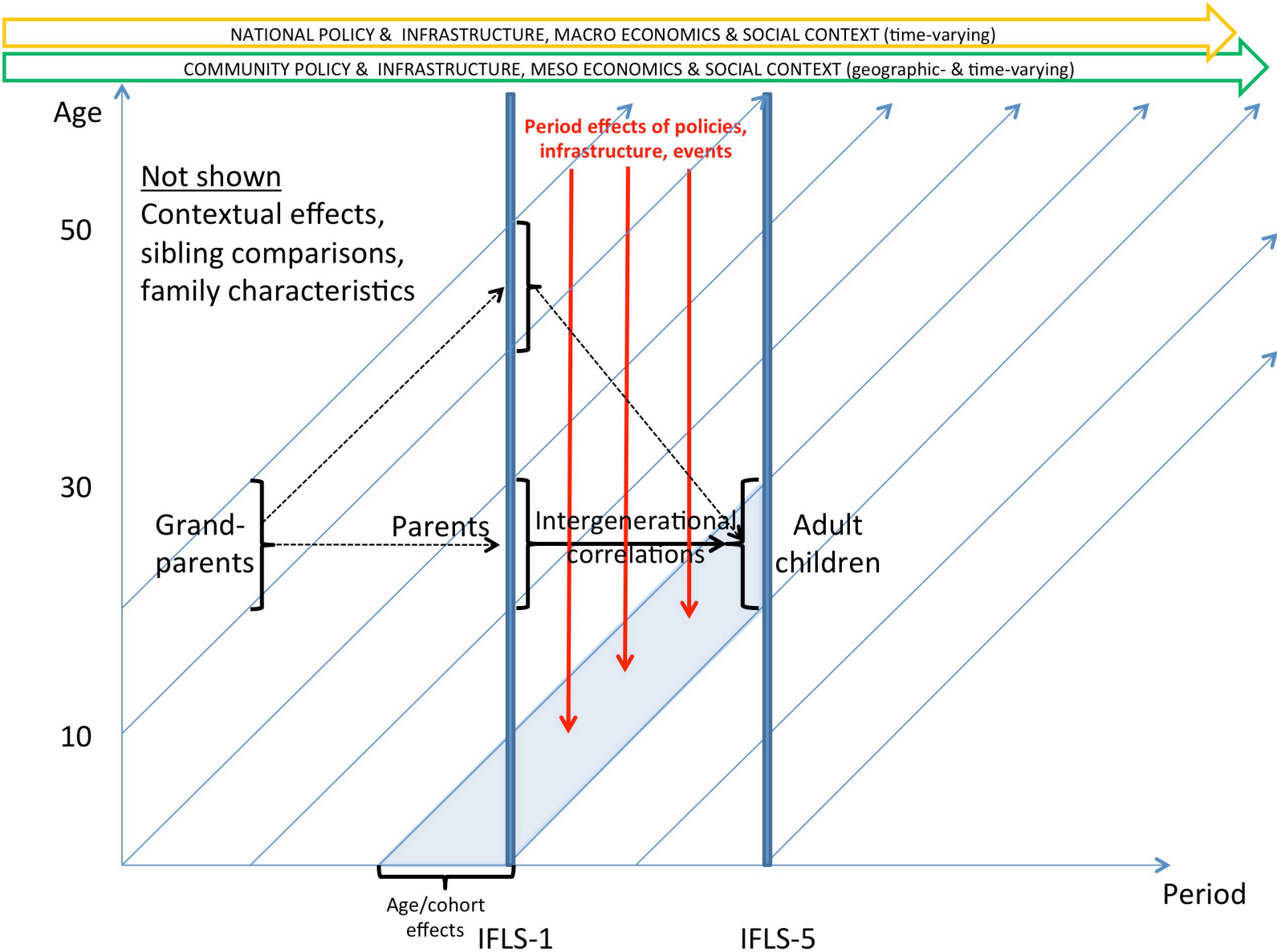
Migration and health

- 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)

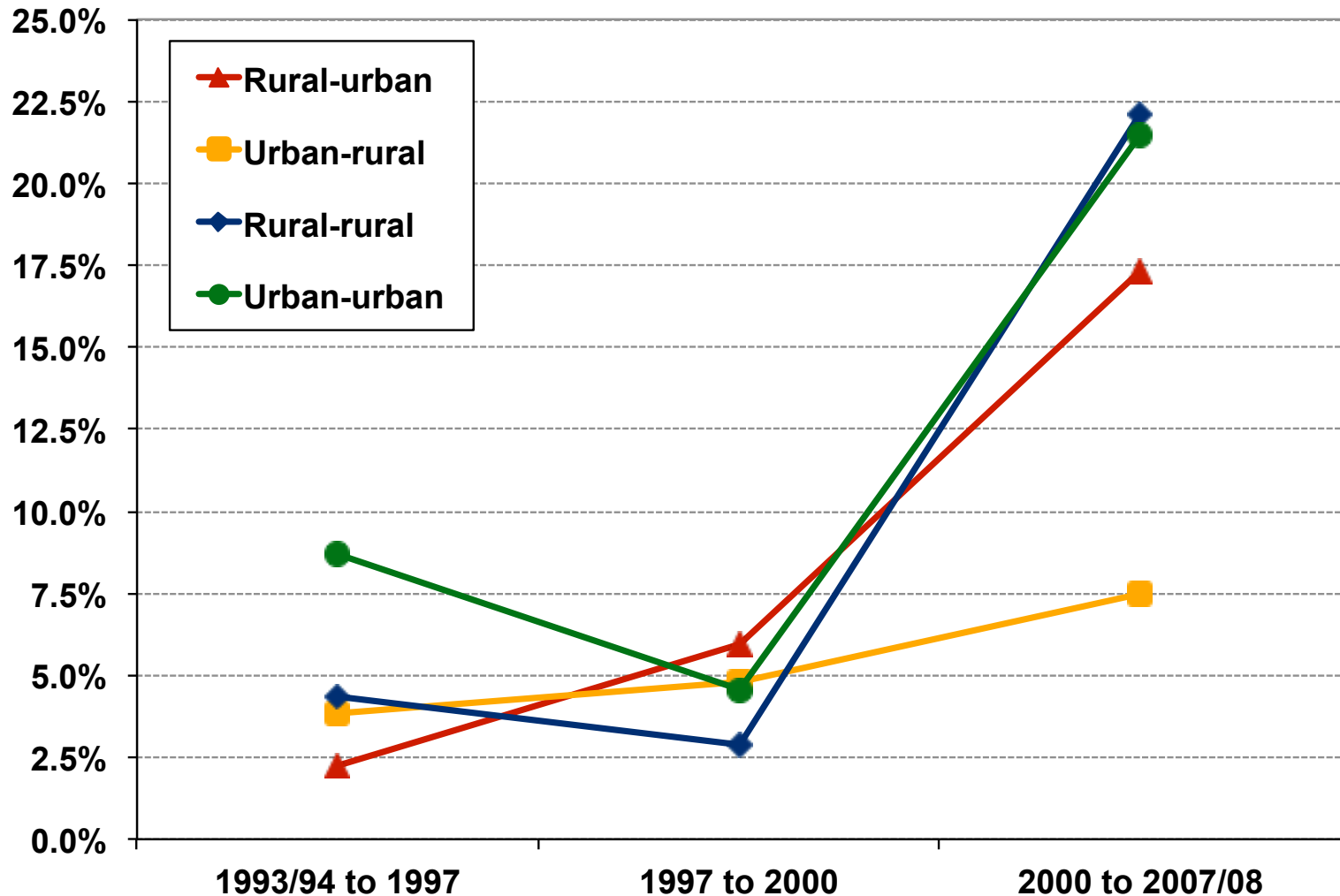
- People 40+ years of age in 2007/08
 - Hypertension
 - Diabetes
 - Tuberculosis
 - Asthma
 - Other lung problems
 - Heart problems
 - Liver
 - Stroke
 - Cancer, tumor
 - Arthritis, rheumatism
 - Uric acid, gout
 - Depression
- Sample size: 10,498 individuals
- Controls: married, men, younger people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

Migration flows

(independent variable)

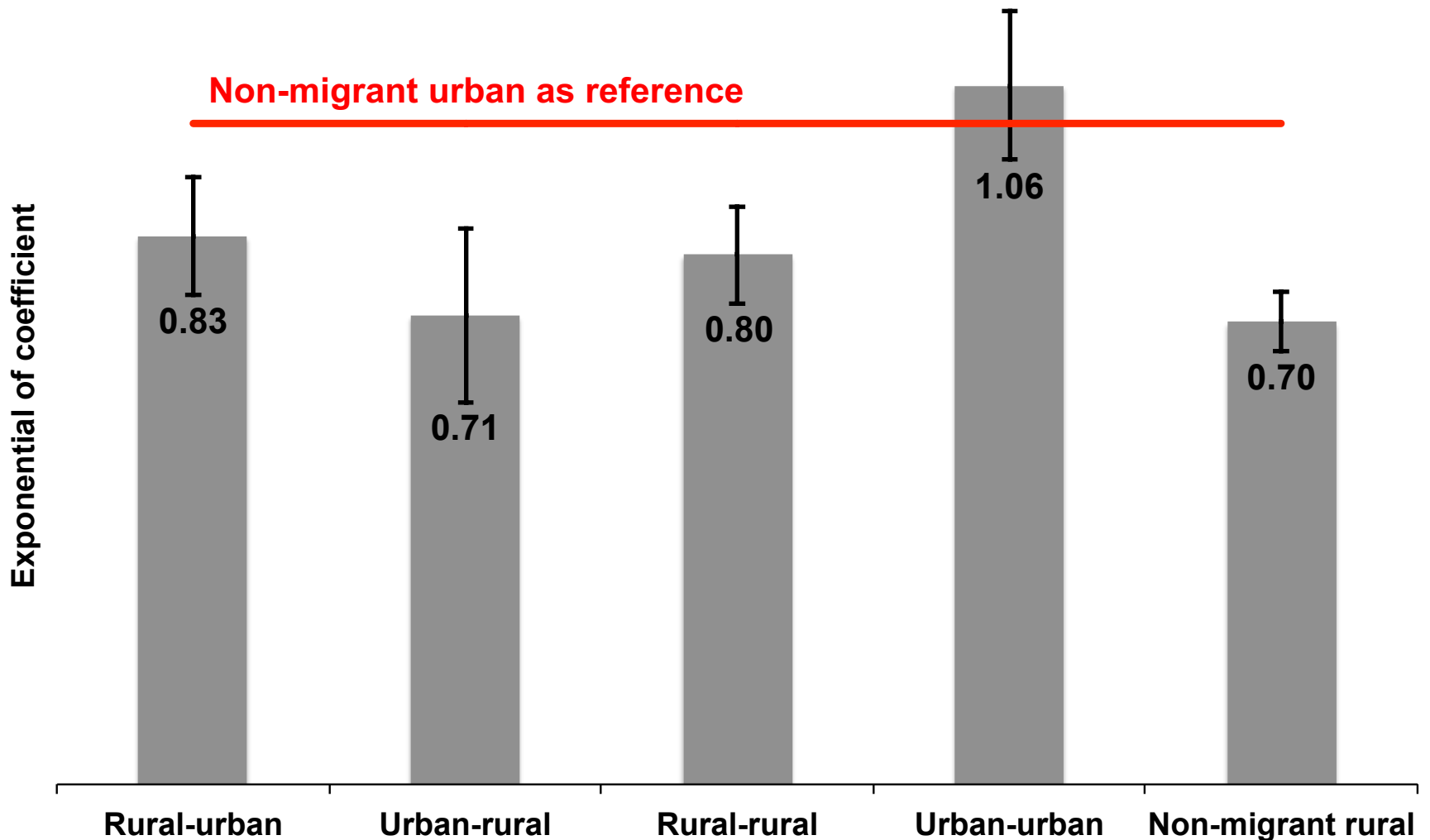
- First set of logistic models: 2000 to 2007/08
 1. Rural-urban
 2. Urban-rural
 3. Rural-rural
 4. Urban-urban
 5. Non-migrant in rural areas
 6. Non-migrant in urban areas
- Second set of logistic models
 - 4 waves: 1993/94, 1997, 2000, 2007/08
 - 18 categories of migration flows

Migration rates



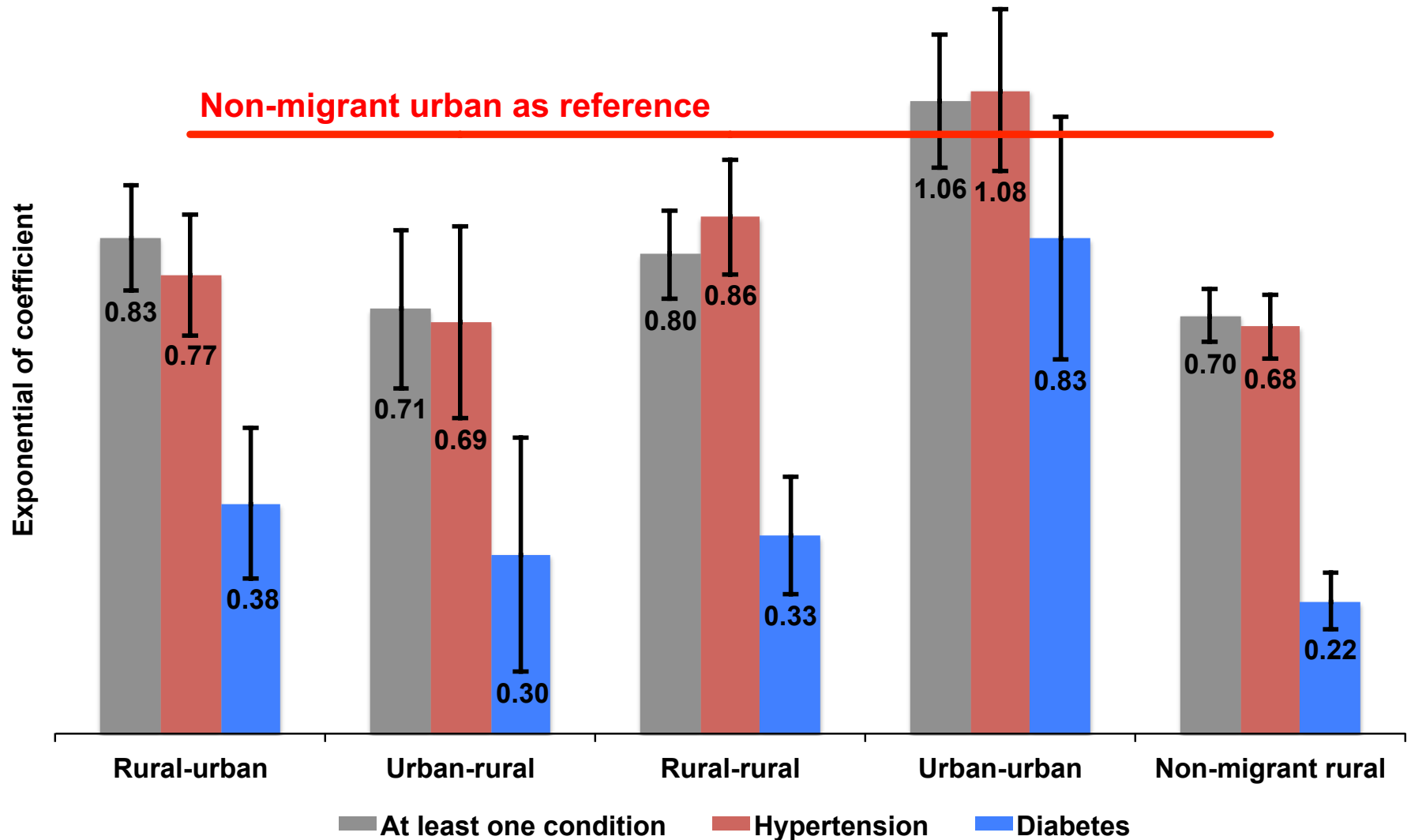
Non-migrant rural	93.4%	91.2%	60.6%
Non-migrant urban	87.5%	90.6%	71.1%

At least one chronic condition, 2000 to 2007/08



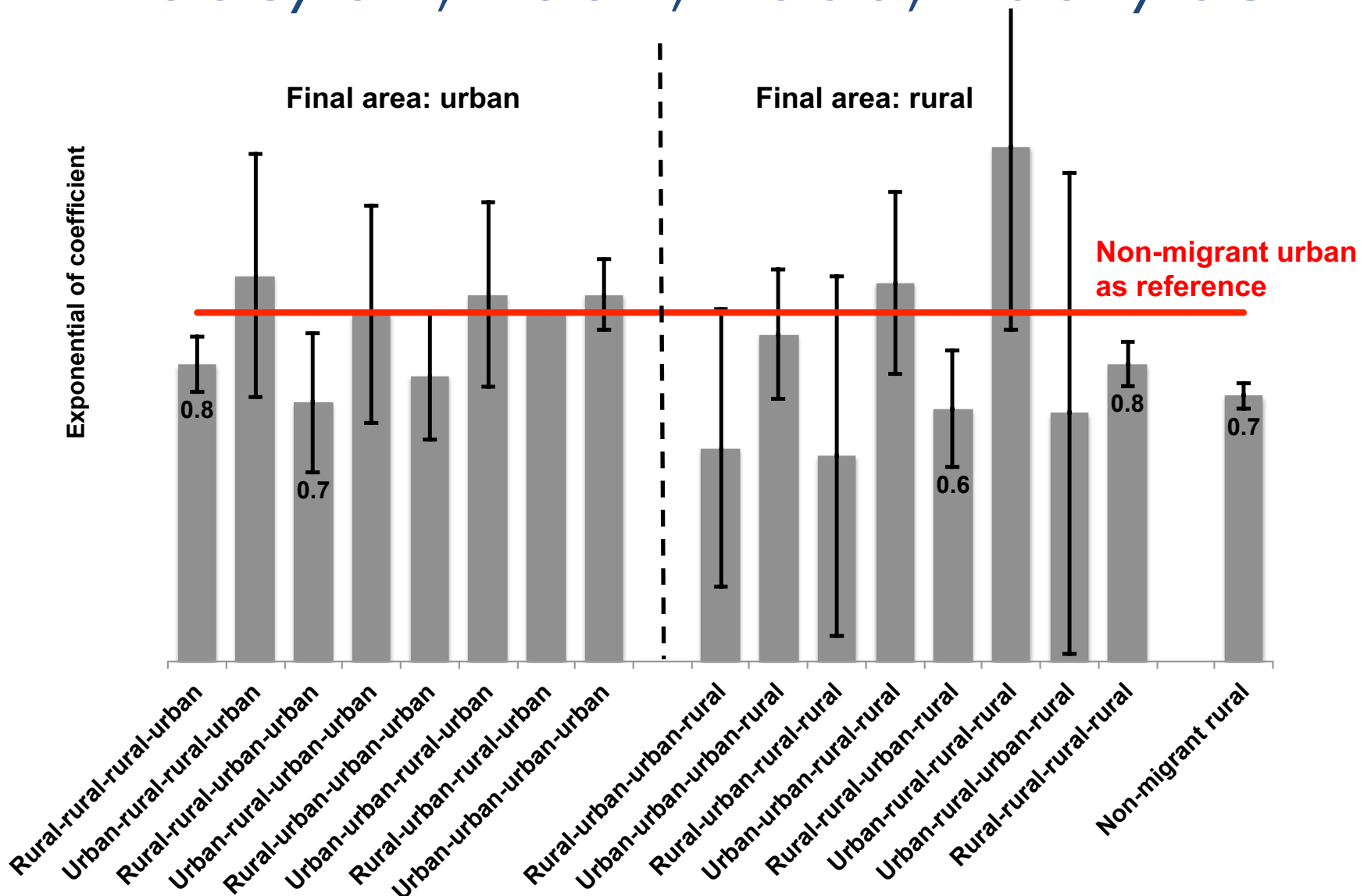
Source: Indonesian Family Life Survey (IFLS).

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