

Geographic Poverty Traps in Indonesia: Isolation, Disasters, and Female-Headed Households

Wisnu Setiadi Nugroho
Colorado State University
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The issue of persistent poor area

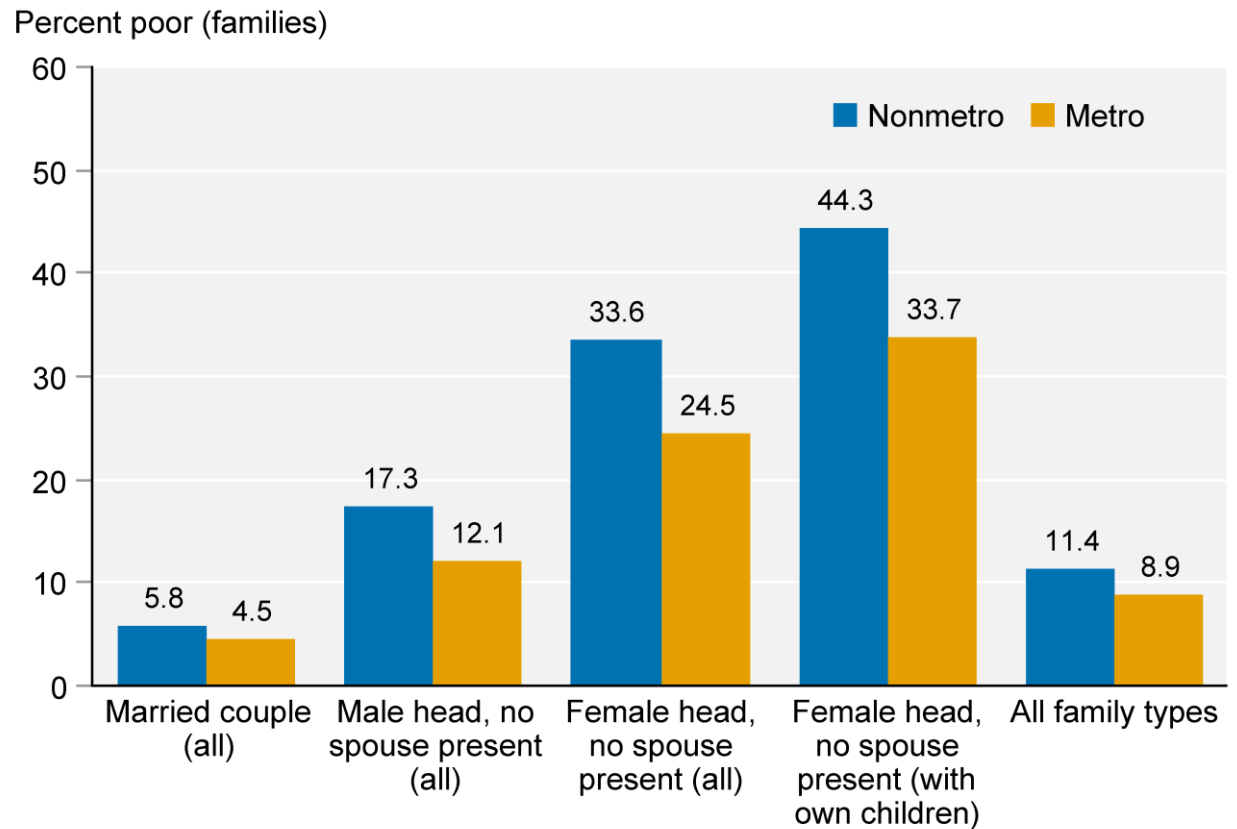
- Poverty: living below the certain standard (deprivation in terms of necessities goods such as food, safe drinking water, sanitation facilities, health, shelter, education, and information (sen, 1983)).
- 320-443 million people live trapped in chronic poverty (Kate Bird; CPAN, 2014). Multiple deprivations: hunger, undernutrition, illiteracy, lack of access to safe drinking water, and basic health services, social discrimination, physical insecurity and political exclusion.

Spatial and Temporal Aspects of poverty

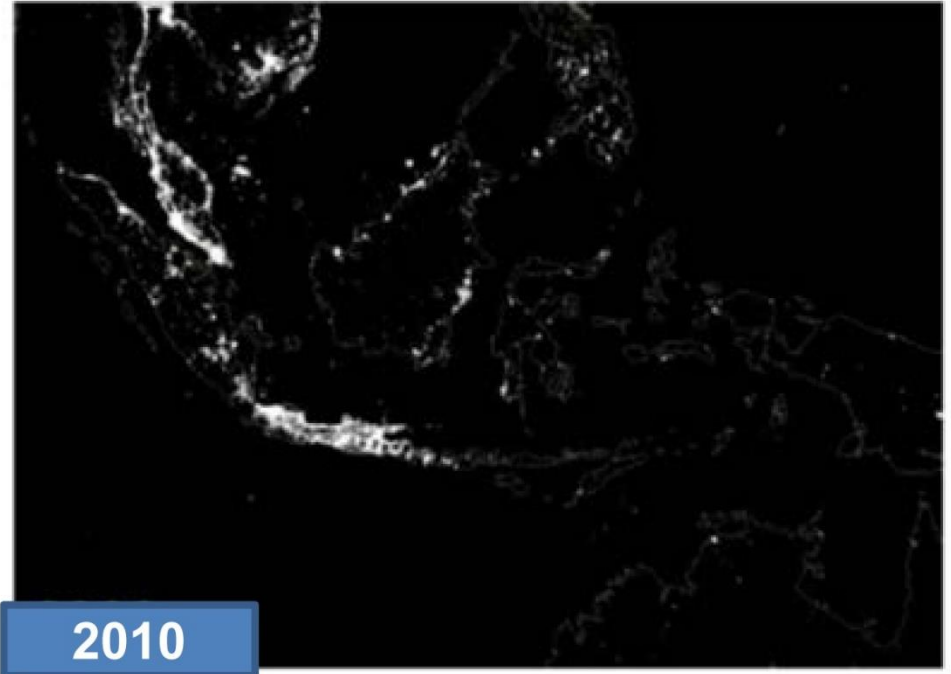
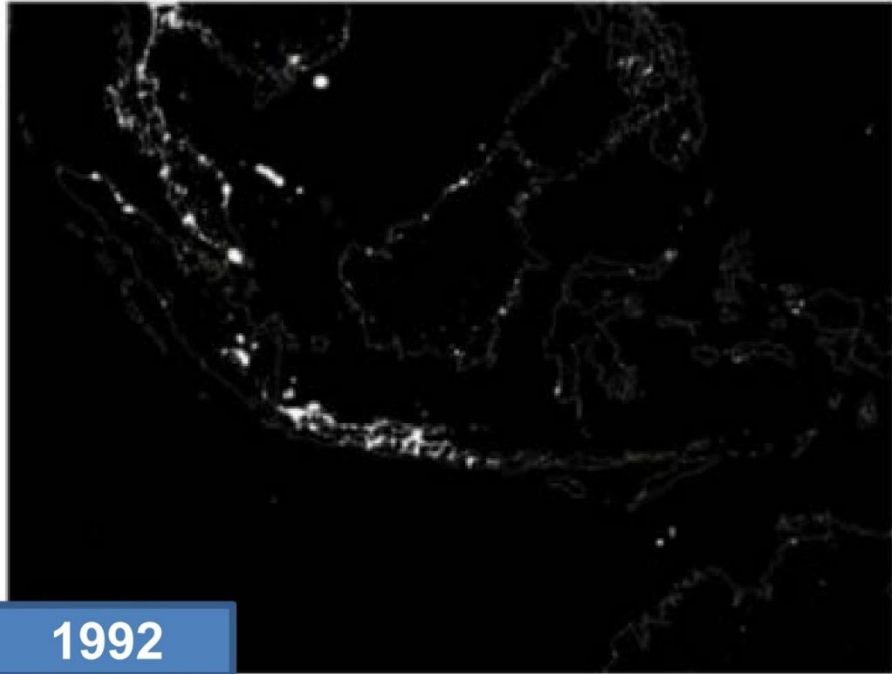
- Most countries have geographic concentration of poverty: Eastern islands of Indonesia, northeastern India, northwestern Bangladesh, Northern Nigeria, Southeast Mexico, Northeast Brazil
- Geographic poverty trap is defined by a characteristic of a household's area of residence entail that household consumption cannot rise over time in certain locations (Jalan & Ravallion, 2002).
 - Geographic externalities arising from local public goods or local endowment of private goods. Living in well-endowed area has higher chance to out of poverty
- Another aspect of poverty also by demographics: ethnicity, races, families, etc.

US data shows, In 2018, more than one-third of non-metro families headed by a female with no spouse present were poor (33.6 percent) and nearly half of those with related children were poor (44.3 percent).

Poverty rates by family type and metro/nonmetro residence, 2018



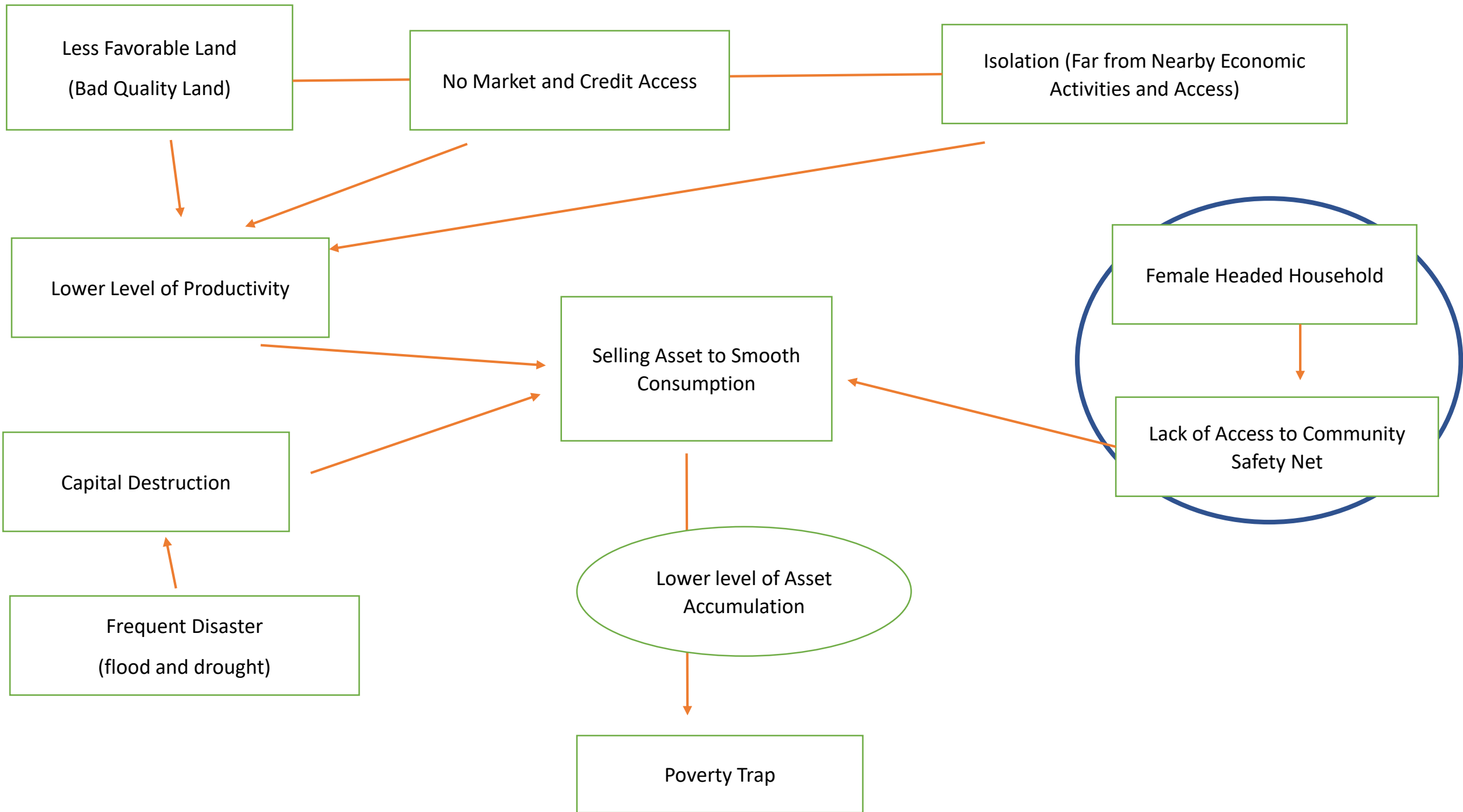
Source: USDA, Economic Research Service using data from the U.S. Census Bureau, annual American Community Survey, 2018.



- Olivia and Gibson (2015) shows Indonesia rapid growth in two decades utilizing nightlights.
- Unfortunately, it is also showing inequality and persistent poverty in the eastern Indonesia.

Research Questions

1. Does “Geographic Poverty Trap” exist?
 - a. Represented by “classical” geographic variable (mountainous, rural, and near by the coast)
 - b. Addition of environmental variable (less favorable land & less favorable infrastructure/isolation) and disaster as factor
2. Does environmental variable matter for geographic poverty trap?
3. Does disaster have long term effect on the poverty and wealth accumulation of individual (creating poverty trap)?
4. Does vulnerable group (female-headed household) affected by isolation and disaster more than other groups?

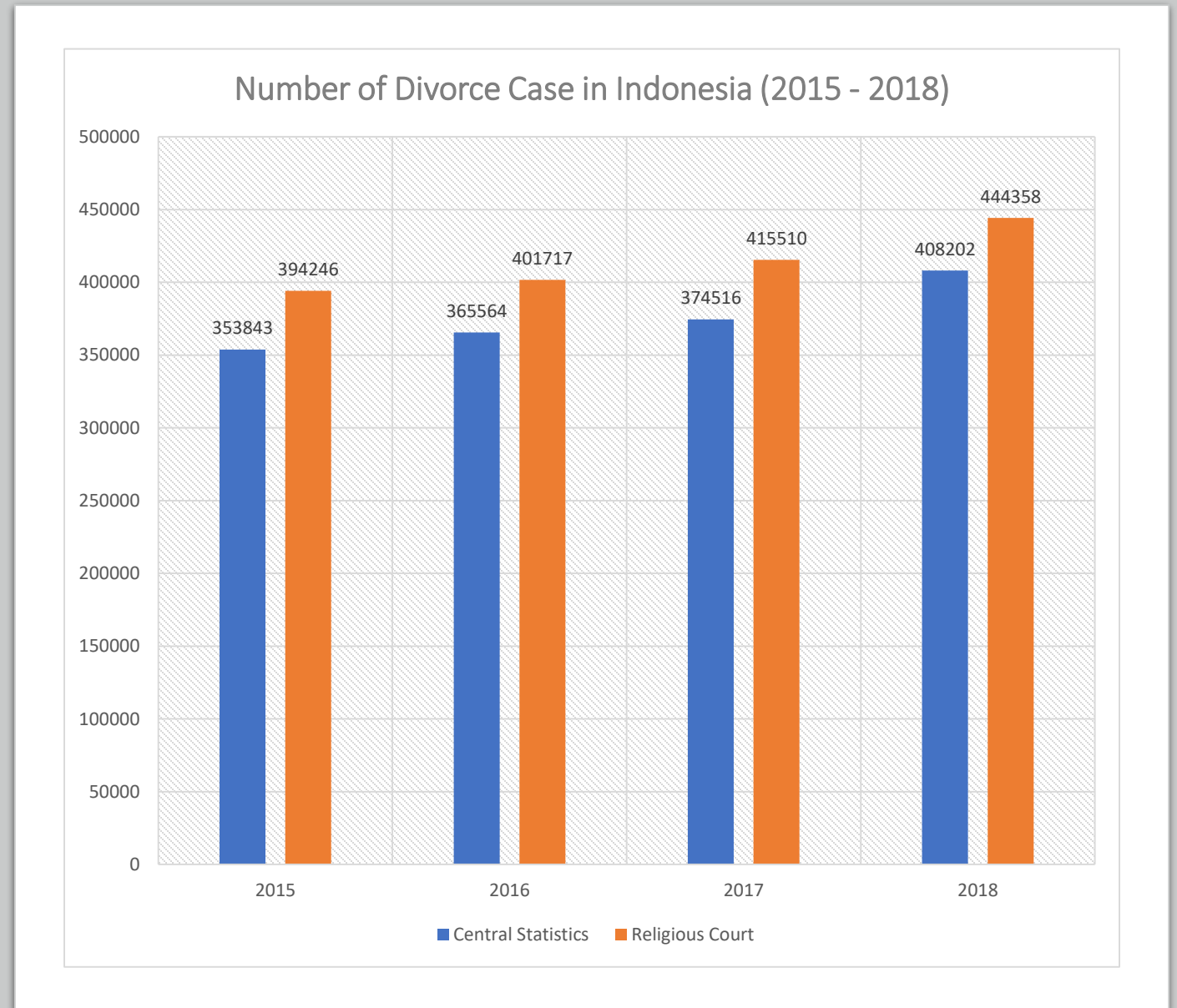


Women in Indonesia

- Patriarchal vs Egalitarian
 - Genderless society in term of economics and politics (Kevane & Levine, 2001)
- Bataknese – Patriarchal
 - Investing in education is not a waste (Ihromi, 1994) -> Bride Price (Ashraf et al, 2016)
- Minangkabau (West Sumatrans) – Matrilineal
 - All inheritance goes to female
 - Marriage is an “exchange of men” instead of “exchange of women” (Krier, 2008)
 - Female lineage (female family name)
- Javanese – Genderless
 - Freedom for women in the economy and equal bargaining strength
 - However, most village heads are male, and it is expected that males assume the leadership roles.

Women in Indonesia (2)

- In 2018, 11.21% Indonesian female married before the age of 18
 - Urban: 7.15% & Rural 16.87% (PUSKAPA, 2020 – Susenas 2018)
 - Highest: 27.82% (South Borneo). Lowest: 6.74% (Riau)
- Around 1.8 – 2.0 million Indonesian married each year (make the divorce rate around 20%)



Around 80% of divorce caused by economic condition and principal disagreement

Women in Indonesia (3)

- The 2014 data from the National Land Agency, from 44 million acres registered land certificate, only 15.88 percent of the land ownership is female.
- In the agricultural sector, Agricultural Census 2013 found that only 3 million out of 26 million agricultural households have females as the main farmers.
- Female is rarely being involved in community development planning.
 - Either they are not invited at all to any meetings, or the community meetings never take female inputs and suggestions seriously.
- Barbara Bergman (The Economic Risks of Being a Housewife, 1981)
 - Sexual and Non-Sexual Risk

Data

1. Utilizing Indonesia Data
 - a. Susenas – National Socio-Economic Household Survey and Podes – Village Potential (first section – cross section)
 - b. Indonesia Family Life Surveys - IFLS (second “main” section) – panel data
2. All geographical, disaster, infrastructure data coming from Podes (village level) and IFLS (community level)
3. All income and asset data coming from Susenas and IFLS (household level)
 - a. Asset is summary of counting variable
 - b. Principal Component Analysis (PCA) utilized to construct welfare score

Results (Susenas) – Total Asset

1. In OLS cross-section model all geographical variable consistently negatively affecting asset accumulation significantly (Coastal: -0.268; Mountain: -0.574; Rural: -0.184)
2. Economic infrastructure availability affecting positively asset accumulation (Farm Store: 0.166; Market: 0.111; Bank: 0.0938)
3. Isolation variables affecting negatively (Distance to Market: -0.00572; Distance to Bank: -0.00132), while good access quality and easy to access the village affecting positively (Easy Access: 0.322; Access Quality: 0.0919)

Results (Susenas) - Continued

4. Disaster variables have mixed results, flood is positive for asset accumulation (0.0418). However, drought has negative effect (-0.348).
5. Female-headed-household has less total asset accumulation compared to male-headed household (-0.492).

Results (IFLS) – Total Asset

1. Preliminary results suggest that the IFLS panel model (all in term of total asset change), geographical variable have mixed results. Positive for mountain and coastal, negative for rural.
 - a. Could be due to the rough approximation and the aggregation in the kecamatan level.
2. Isolation variable affecting negatively (eg. distance to bank, distance to district capital), while good access quality of the village affecting positively.
3. Both disaster affecting positively, but only drought have significant effect in the full model

Conclusion

1. The result shows that geographical variable, isolation, and disaster plays a vital role in individual wealth accumulation even after controlling household spending, health and education facilities, and government intervention.
2. The government can do something about the isolation and disaster mitigation parts.
 - a. The government can do at least two things: speed up an infrastructure construction (in the addition of dam and roads that currently massively built) and implement comprehensive social protection or offer an out-migration policy (assuming there's no migration constraint – eg. Human capital)
3. The government can do mitigation action to contain the effect of disaster shock to individual wealth status.
4. The urgency to help these people is high to avoid the poverty trap and intergenerational poverty for people living in these areas, especially when Indonesia facing the changing demographics in future years.
5. Policy focus on vulnerable group such as female-headed household

Thank you!

Wisnu.Nugroho@colostate.edu

REDI@CSU
Regional Economic Development Institute

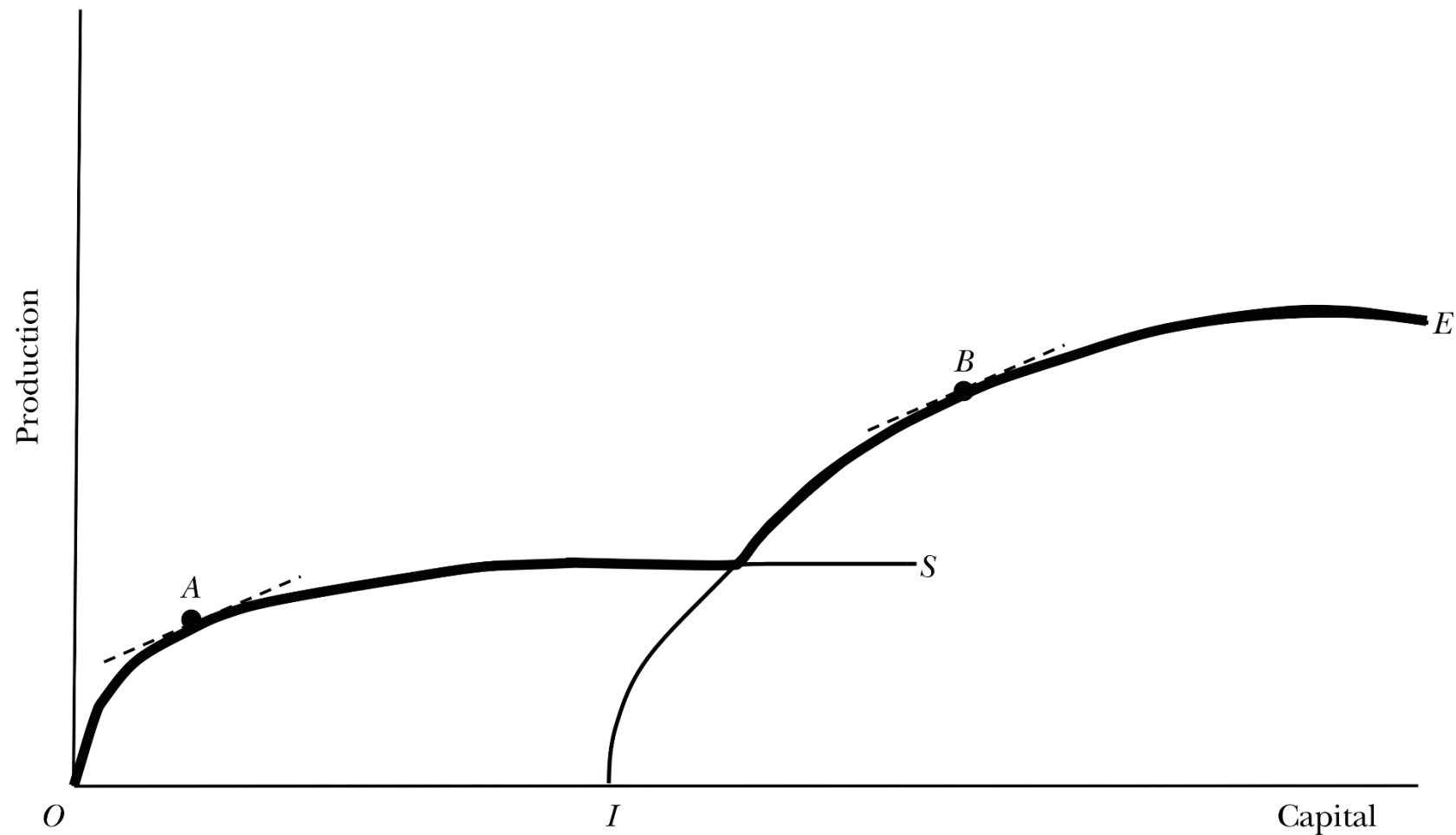


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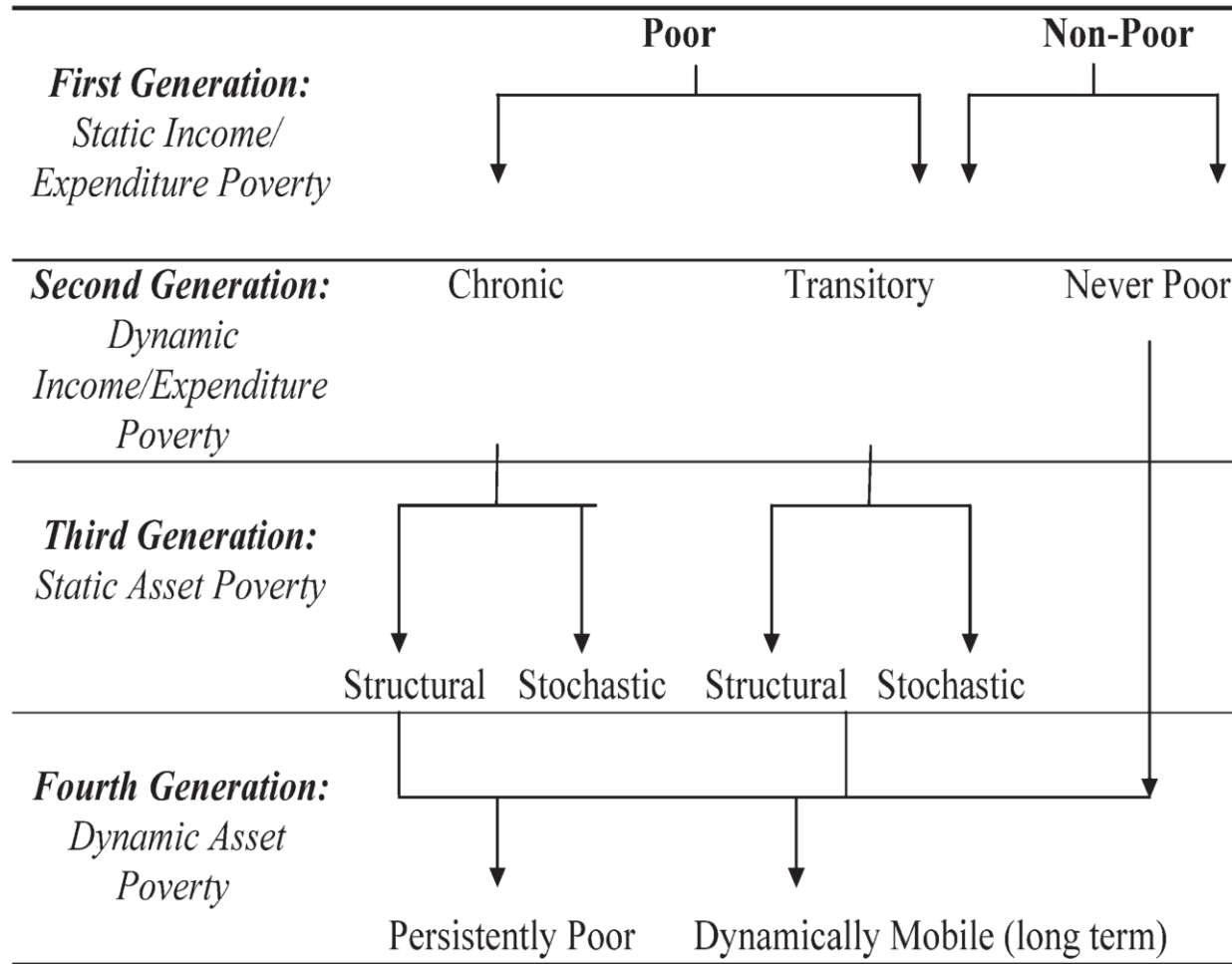
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Production Non-convexity Arising from Choice between Two Technologies



Kraay & McKenzie (2014)

Asset as poverty measurement



Empirical Specification

$$\Delta A_{it} = \alpha + \gamma g_{it} + \theta s_{it} + \varphi d_{it} + \beta x_{it} + \varepsilon_{it}$$

Where A is an asset;

g is a classical geographic variable;

s is the isolation variable;

d is the disaster variable,

and x is another exogenous explanatory variable.

Infrastructure

1. Road access
 - a. Eliminating isolation
2. Education infrastructure
 - a. Investment for out-migration policy
3. Information
 - a. Internet access → for education, marketplace
4. Market access
 - a. Bank, financial credit, etc.

Comprehensive Social Protection

1. Universal Basic Income

- a. “(UBI) will be necessary over time if AI [artificial intelligence] takes over most human jobs” – Elon Musk
- b. Poverty isn’t a lack of character. It’s a lack of cash – Rutger Bregman

2. Reverse Taxation or Negative Income Tax

- a. Earned Income Tax Credit is the closest one

3. Federal Jobs Guarantee

4. Also need to focus on specific demographic (single female-headed household or geographic (rural remote and less favorable land))