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Nouna Research Centre
Burkina Faso

Does community-based health insurance protect household assets?

Evidence from rural Burkina Faso, Africa

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Germain Savadogo, Rainer Sauerborn

Health financing through Community-based health insurance (CBHI)

Four major types of health financing

- Tax-based financing

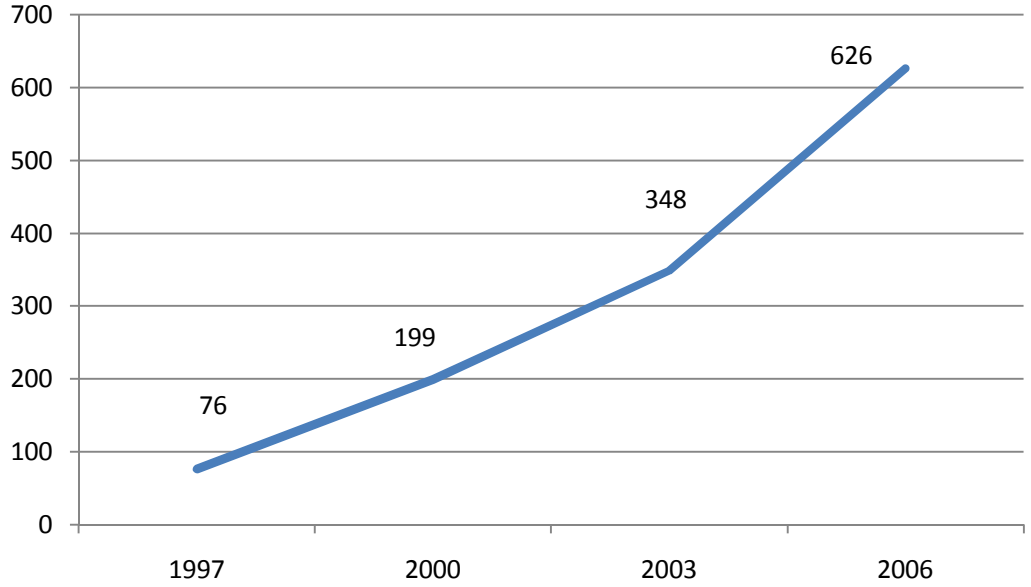
  Taxes on financial transactions
- Social health insurance

  Workers, govt. employees etc
- Private health insurance

  E.g. CBHI
- Medical saving accounts

  Individual saving accounts

Increase in the # of CBHI Schemes in West Africa

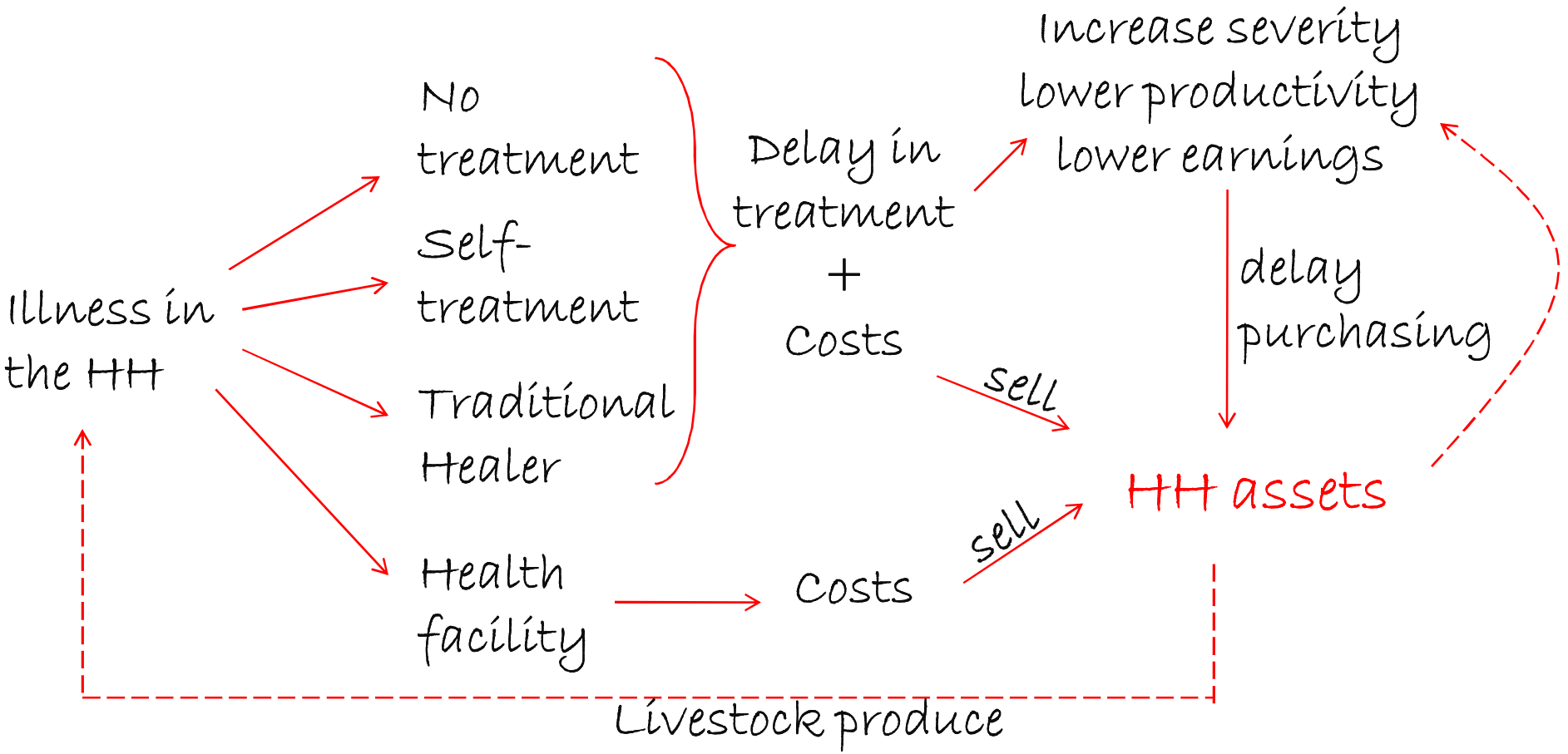


References: WHO

Source: www.concertation.org

Link between CBHI and household assets

(Livestock + household goods)



Link between CBHI and household assets

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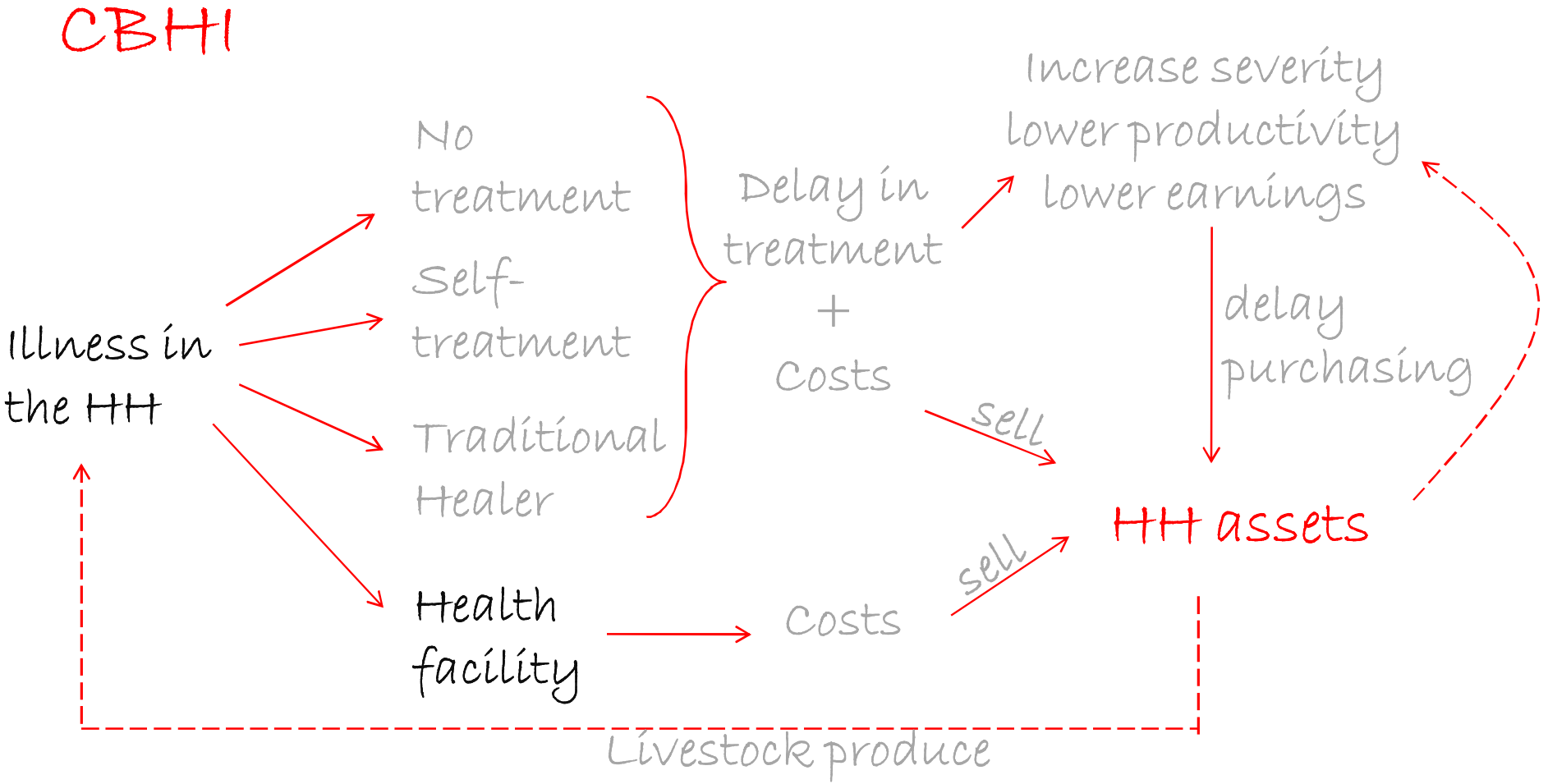
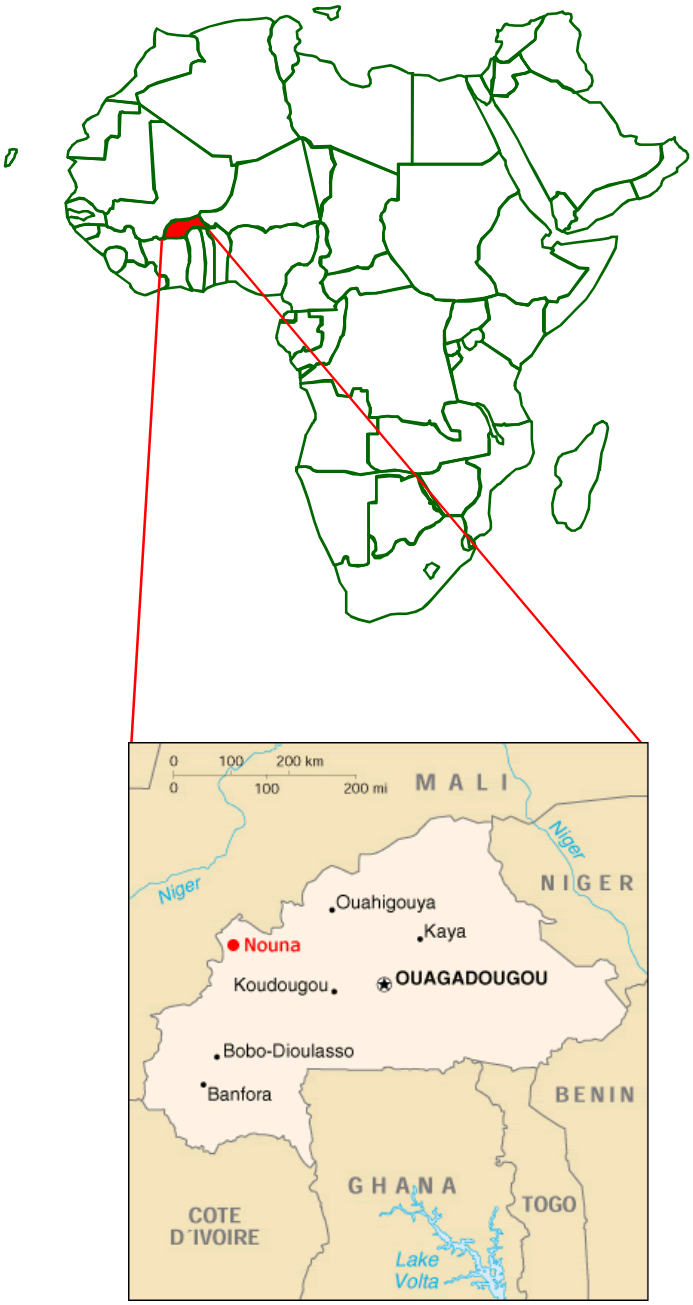


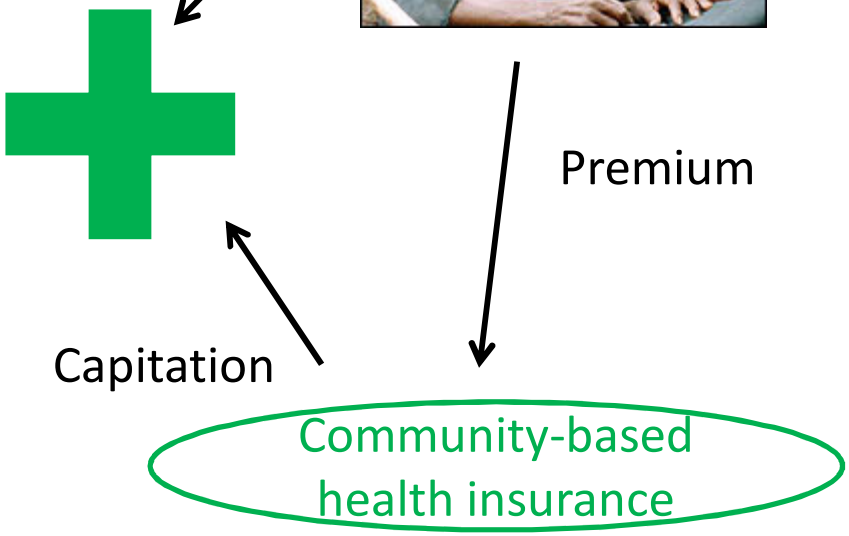
Burkina Faso

- Population: 15.8 million
- GDP per capita (PPP): $1200
- Occupation: 90% engaged in subsistance agriculture
- Literacy: 30% (men), 15%(females)
- Life expectancy : 53 years
- Infant mortality rate: 85 /1000 live births



Reference: https://www.cia.gov

The CBHI scheme in Nouna



- Introduced in 2004
- 41 villages and Nouna town (i.e. 7762 households)
- Benefit package:
  Consultation fee, essential and generic drugs, lab tests, hospital stay, x-rays, emergency surgery, ambulance transport
- Unit of enrolment: household
- Premium: 1500 CFA (2.29€) adult
  500 CFA (0.76€) child p.a.

Data: Household Panel Survey (2004-07)

- 41 villages & Nouna town
- 15% of the population

  (Total population:67,262)
- Panel survey

  (same households interviewed every year)
- Conducted every year

(0) Socio-demographic: ethnicity, religion, housing conditions, education…
(1) Socio-economic: ownership of livestock, goods…
(2) Self-reported morbidity: illness episodes, health-seeking behaviour…
(3) Preventive care
(4) Risk-sharing & perceptions on quality of health care
(5) CBHI: enrolment decisions, reasons for enrolling…

Model

Reverse causality

$$\text{HH assets}_{it+1} = Z_i.\ \beta_1 + X_{it}.\beta_2 + \text{CBHI}_{it}.\ \beta_3 + u_i + \varepsilon_{it} + \delta_t$$

Selection bias

HH assets_{it+1} :ln(Monetary value of livestock and HH goods)

Z_i : observable time-invariant factors e.g. religion, education

X_{it} : observable time varying factors e.g. age, HH size, chronic

CBHI_{it} : number of insured people in the household

u_i : unobservable time-invariant factors e.g. ability

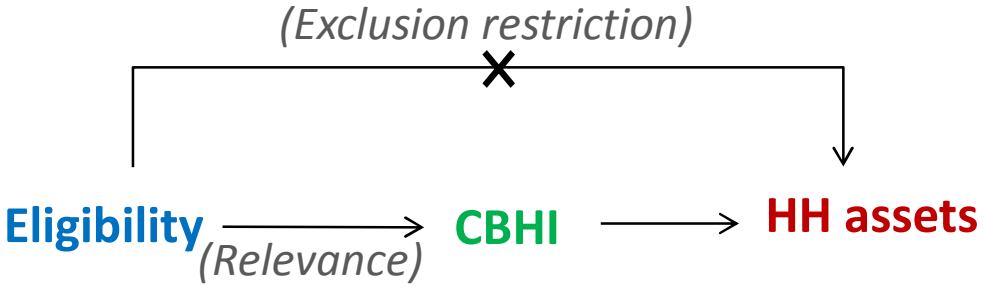
ε_{it} : household-specific time shock e.g. death in the household

δ_t : year shocks

Models

1. Instrumental Variable (IV) Model

- Study area divided into 31 clusters
- CBHI offered randomly
  - 2004: 11 clusters
  - 2005: +9 clusters (11+9=20)
  - 2006: +11 clusters (20+11=31)



Controls for both selection bias + reverse causation

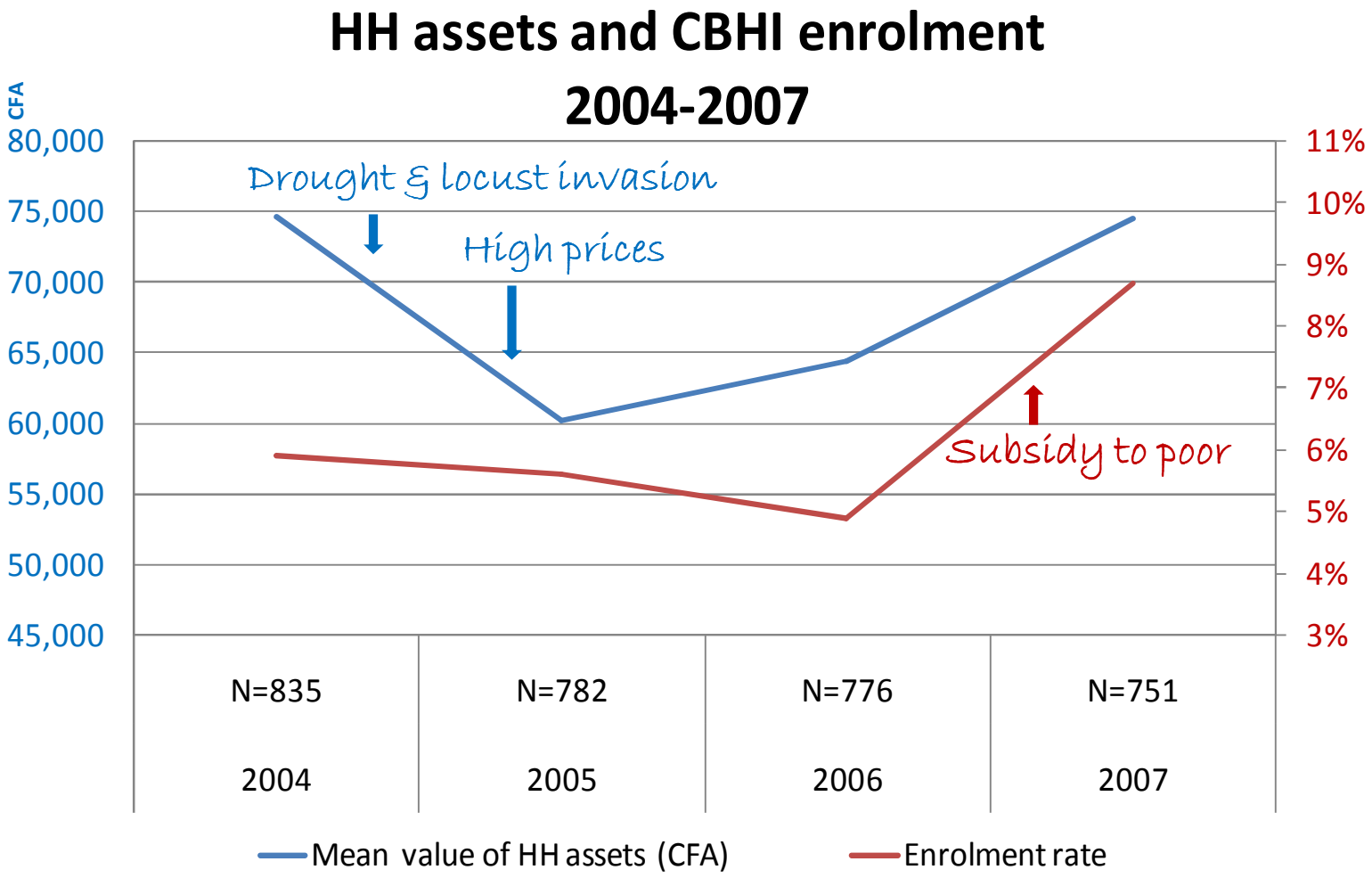
2. Fixed Effects (FE) Model

- Entire period: 2004-2007
- Does not control for 2-way causality

Controls for selection bias only due to time constant variables e.g. ethnicity, religion

RESULTS

Descriptive statistics



Results: Instrumental Variable (IV) 2004-2005

Variables	Co-efficient	Robust SE	P-value
CBHI	0.220	0.121	0.070
Literate	0.273	0.082	0.001
Male	-0.374	0.106	0.000
Year_2005	-0.192	0.035	0.000
No. of clusters	31		
No. of observations	1,588		
Angrist-Pischke 1st stage chi^2	17.33 (p=0.00)		
Angrist-Pischke 1st stage F statistic	16.47 (p=0.00)		

24.6%

IV is relevant

Notes:

1. Only variables significant at 10% significant or less are shown here
2. Model controls for
   - -Household head characteristics: Ethnicity, Literate, Gender, Age, Occupation
   - -Household characteristics: Size, Chronic, Eligible
   - -Village characteristics: Town, Literacy, Water source, Distance, Health facility
   - -Year dummies

Results: Fixed Effects (FE)
2004-2007

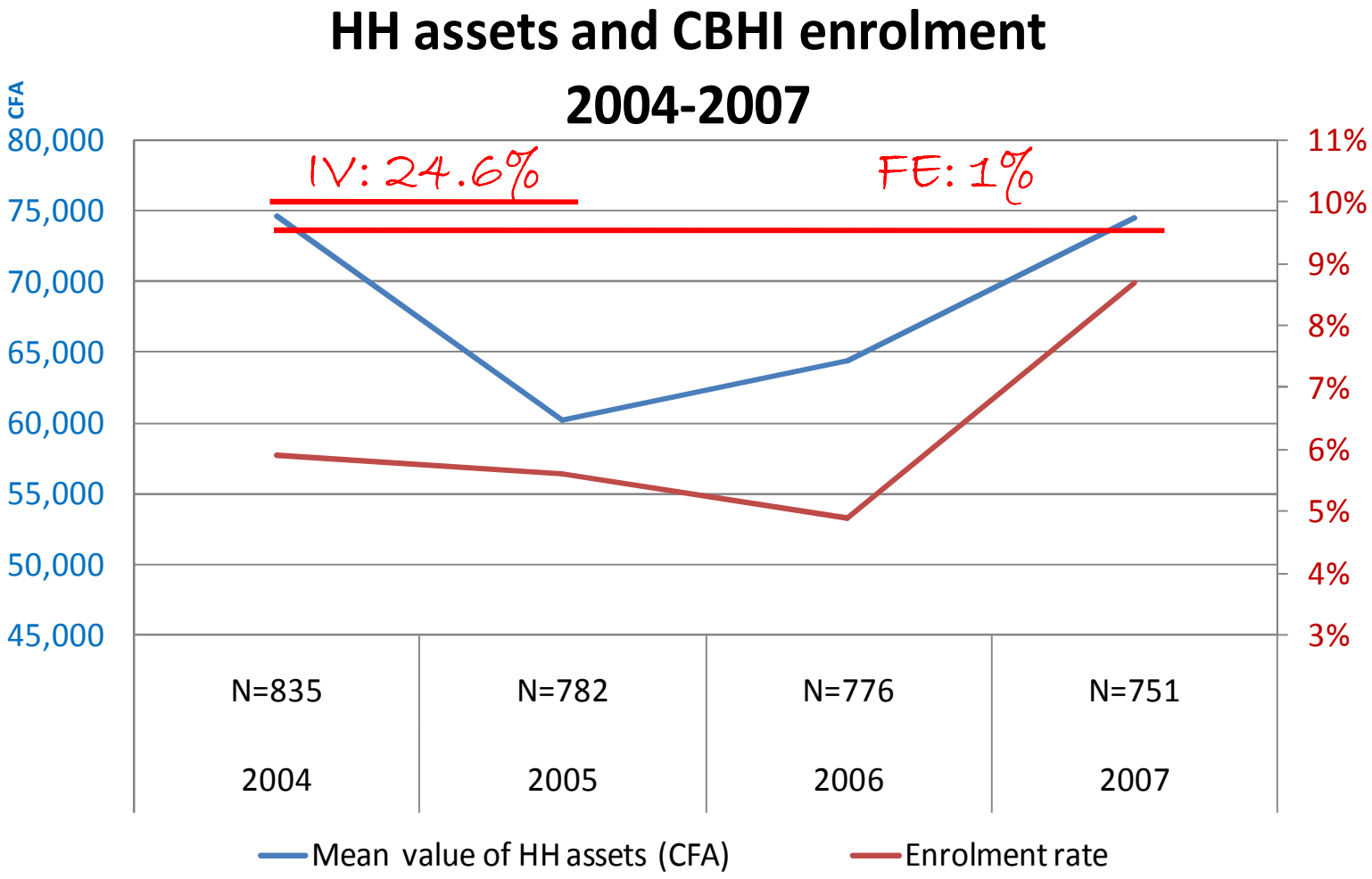
Variables	Co-efficient	Robust SE	P-value
CBHI	0.009	0.005	0.082
Size	-0.125	0.049	0.010
Year_2005	-0.157	0.027	0.000
Year_2006	-0.085	0.031	0.006
Year_2007	0.124	0.034	0.000
No. of clusters		890	
No. of observations		3,144	

1%

Notes:
1. Only variables significant at 10% significant or less are shown here
2. Only time varying variables are included
   - -Household head characteristics: Age
   - -Household characteristics: Size, Chronic
   - -Village characteristics: Town, Water source, Distance
   - -Year dummies

Conclusion

Both models: CBHI protects household assets



Main Conclusions

- CBHI has the potential to protect household assets
- CBHI, in some circumstances, can also increase household assets by breaking the cycle of ill health and poverty – *poverty reduction tool*
- Depends on local context – the scheme, benefit package, quality of care, trust….
- Shift from small-scale CBHI towards universal SHI?
- CBHI - an interim solution
- Sustainability?

Thank you

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