Adverse Selection in Micro Health Insurance:
Evidence from a RCT in Pakistan

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Challenges of Microinsurance

Obstacles specific to low and middle income countries:

- Limited client awareness/demand Cole et al. (2013), Dercon et al. (2011)
  → requirement for simple products
- Administration costs need to be low
  → Staff qualification limited
  → Managing different contract types difficult
  → Client risk classification difficult Brau et al. (2011)

  → **Schemes vulnerable to adverse selection**

Focus here: Adverse selection in Micro Health Insurance (MHI)

Research Agenda: Adverse Selection in MHI

1. How to identify adverse selection (AS) empirically?
2. Is there evidence for AS in simple pooling contracts?
3. Can contract design (risk pooling) mitigate presence of AS?
4. What are the implied welfare costs of AS?

Pakistan – in a nutshell

Key Indicators (2015)[1]

- Population: 189 Mio. (61% rural)
- GDP/capita: $1429 (low-middle inc.)
- Out-of-Pocket Expend.: 87%

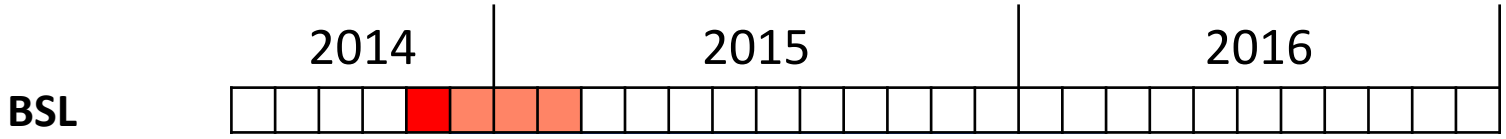
Social Protection

- Formal Insurance < 2%[2]
- Free public facilities, but strong preference for private care
- Health events are the largest source of financial risk[3]

Source: [1]World Bank Indicators 2014 | [2]World Bank (2012) | [3]Heltberg and Lund (2009)

Status Quo and Interventions

- Collaborate with National Rural Support Programme (NRSP)
  - largest rural support program in Pakistan (> 2.5 Mio. HHs)
- **Status Quo:** mandatory hospitalization insurance
  - covers expenses of client & spouse only
- **Intervention:** Offer voluntary insurance for dependents
- Target Group: Credit clients in one rural district in Punjab
- Data & Timing:



The sample

- Research project covers 502 villages
- Insurance for dependents offered in 334 villages
  - Include 4283 clients from 1050 credit groups
  - 3433 clients with 12286 dependents attended meetings
- Average HH characteristics in “innovation villages”:
  - 53% of clients female, 55% of without education
  - 5-6 HH members (3-4 dependents)
  - 23’000 PKR (about 230 USD) total HH income per month
  - 12% of HH with hospitalization in last year

Voluntary Hospitalization Insurance for Dependents

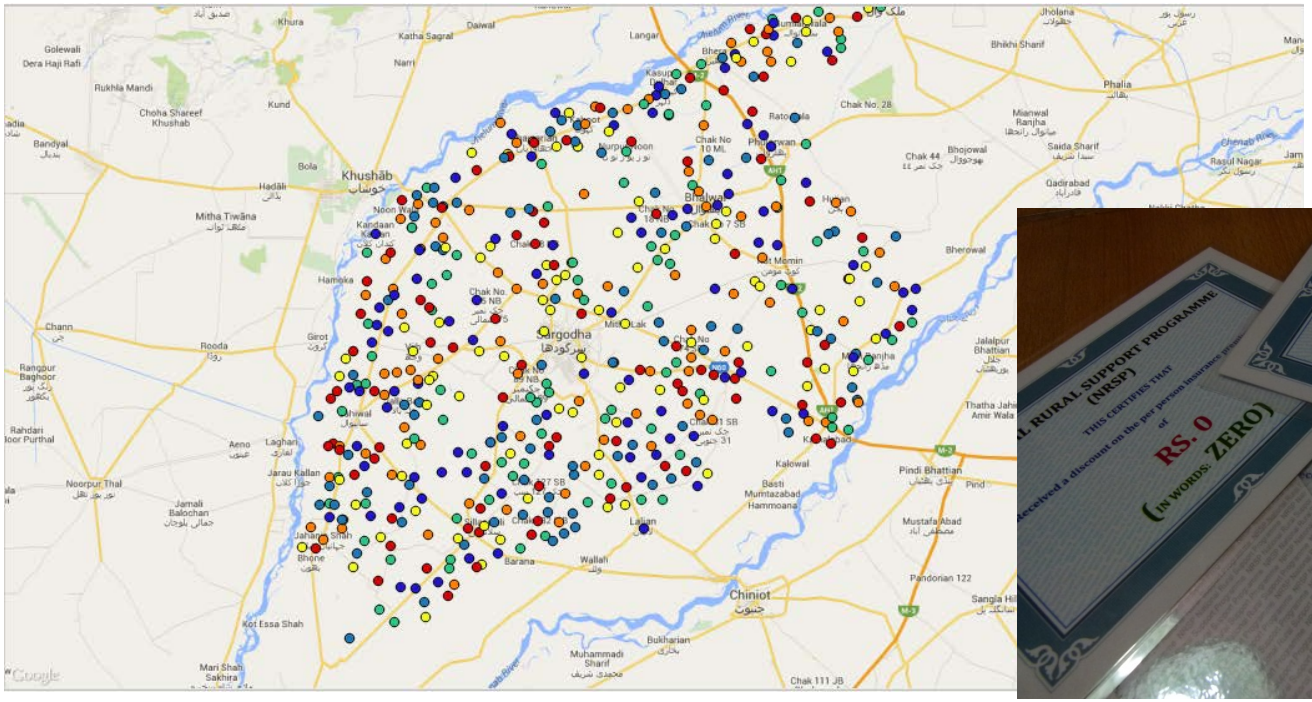
Each client offered 1 out 4 pooling contracts:

	Individual (P1)	Individual High (P2)	Household (P3)	Household, Group (P4)
Eligibility	Individual		Household	
				50% Uptake in the group
Cov. Limit/Person	15,000	30,000	15,000	
Premium/Person	100	150	100	

Note: USD 1 = approx. PKR 100, client and spouse always covered under mandatory scheme

Unit of Randomization

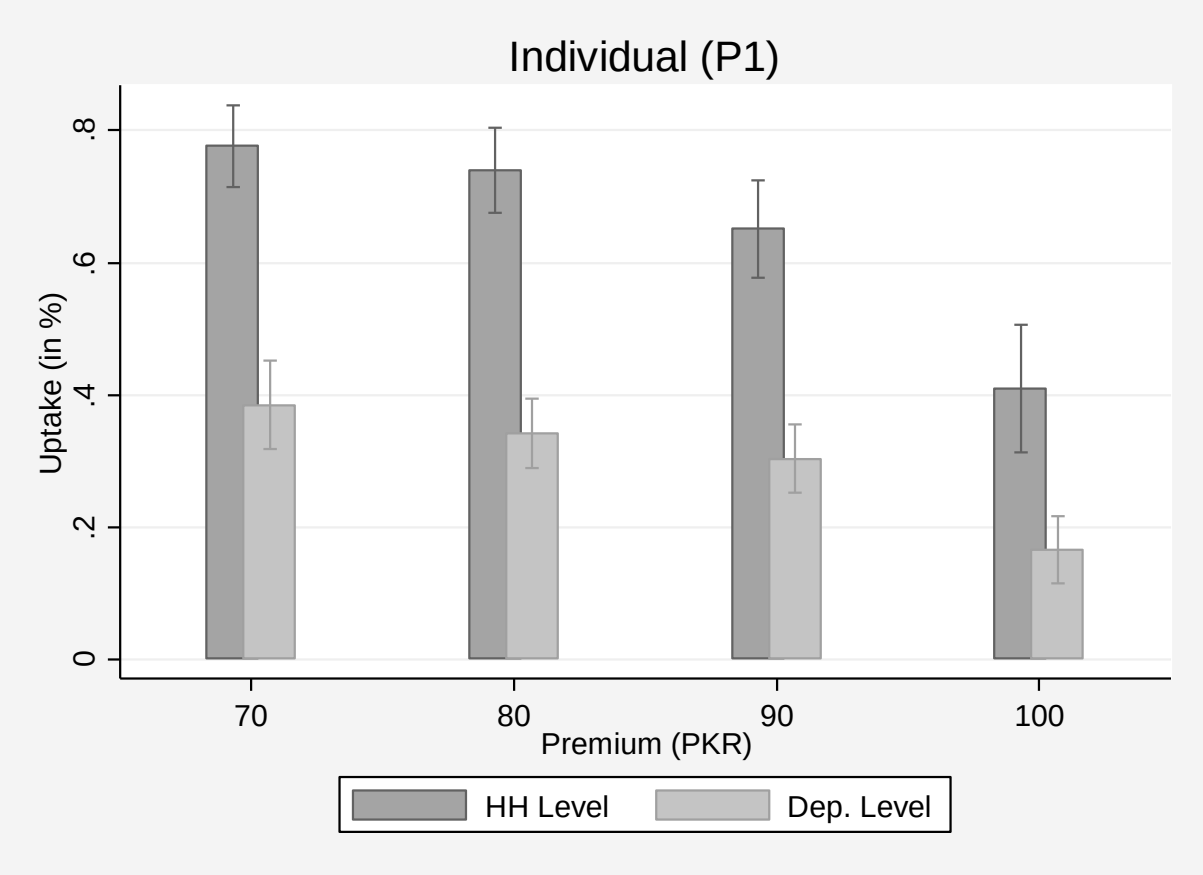
- Policies on the village level (334 villages)
- Discounts on household level (4’283 households)



Learning Objectives - Insurance Demand

1. Sensitivity of demand w.r.t. premium?
2. Insurance pattern within household?
3. Differences across policies?

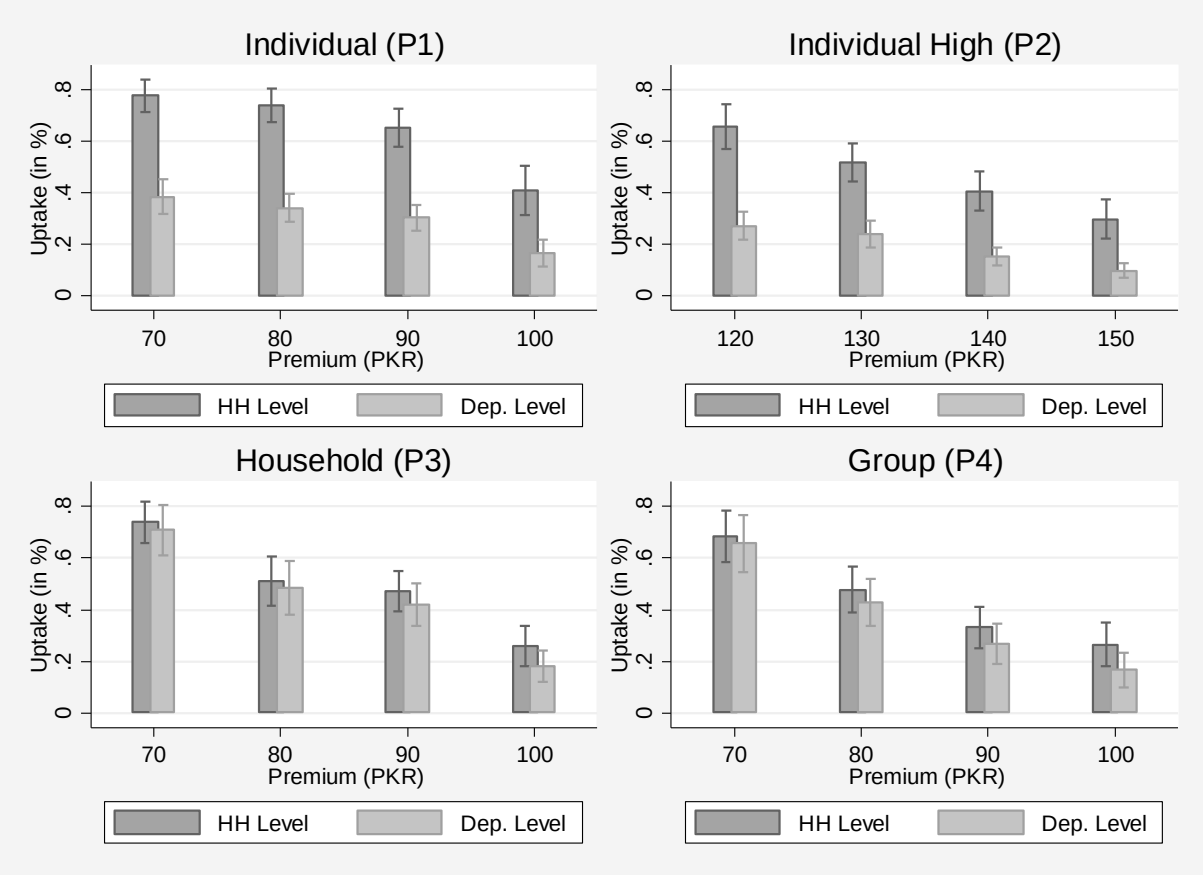
Sensitivity w.r.t. Premium & Pattern within HH



→ Partial uptake individual insurance

→ Price decrease of 30% doubles number of insured individuals

Insurance Demand & Enforcement of Eligibility

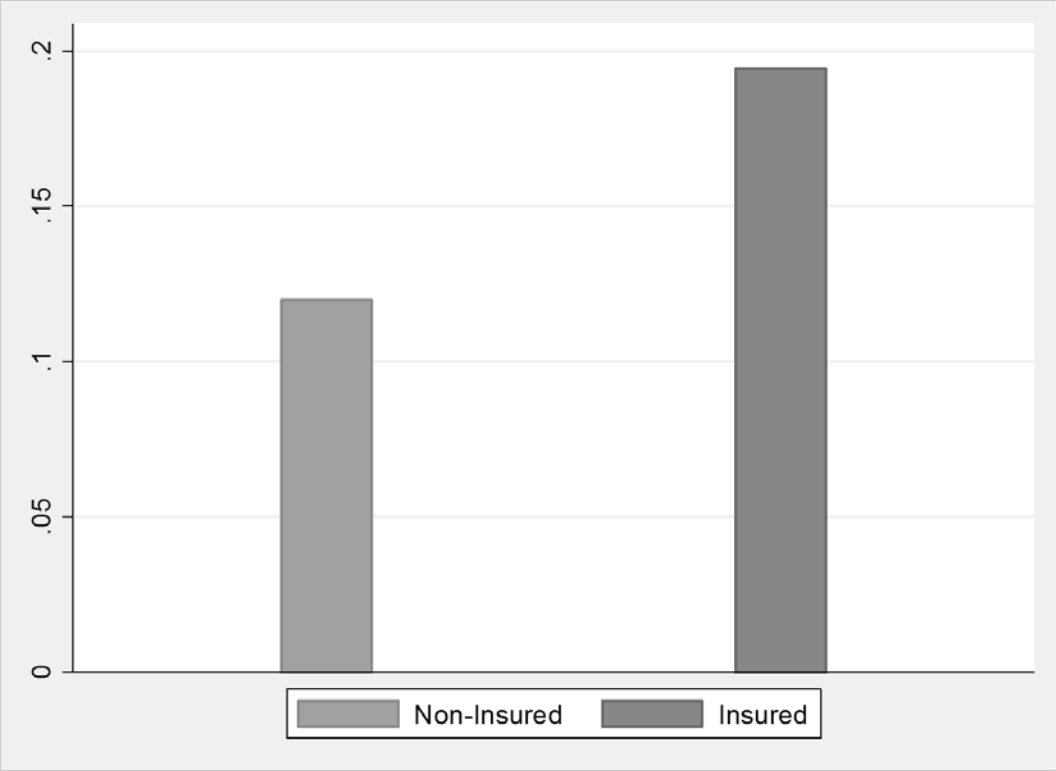


→ Eligibility criteria enforced in implementation

→ Less households, but more individuals in P3 and P4

Adverse Selection – Using Baseline Health Data

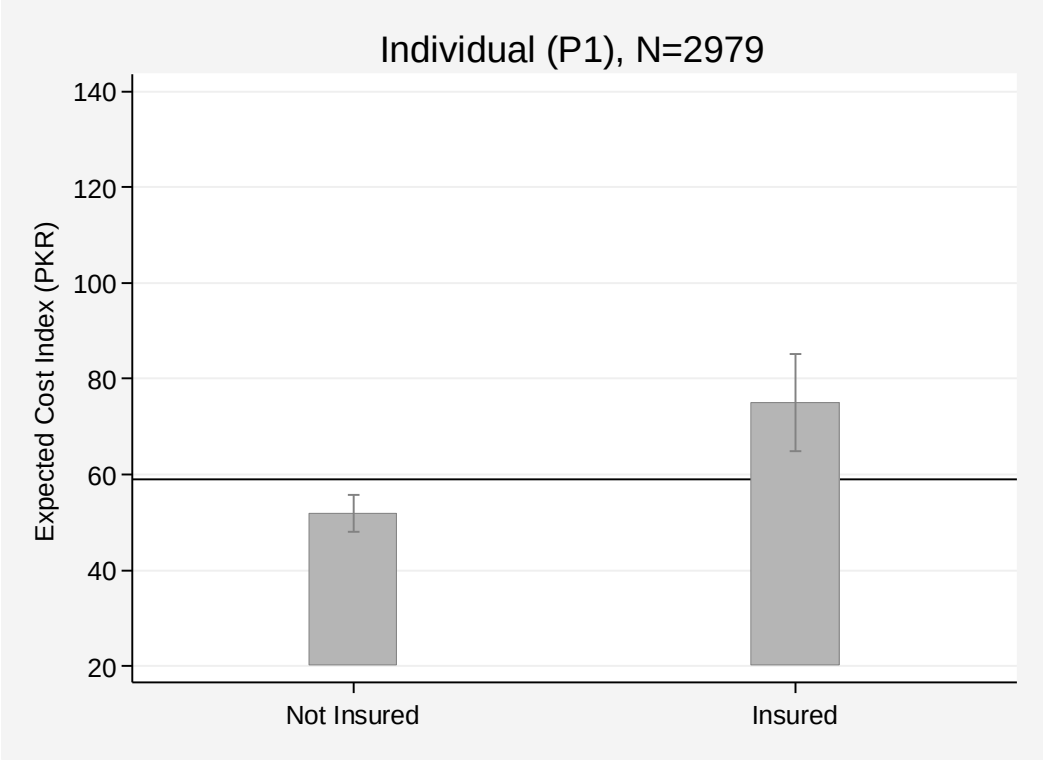
Implement a **positive correlation test** (here with outpatient history)



Note: Share of individuals with outpatient treatment in last month

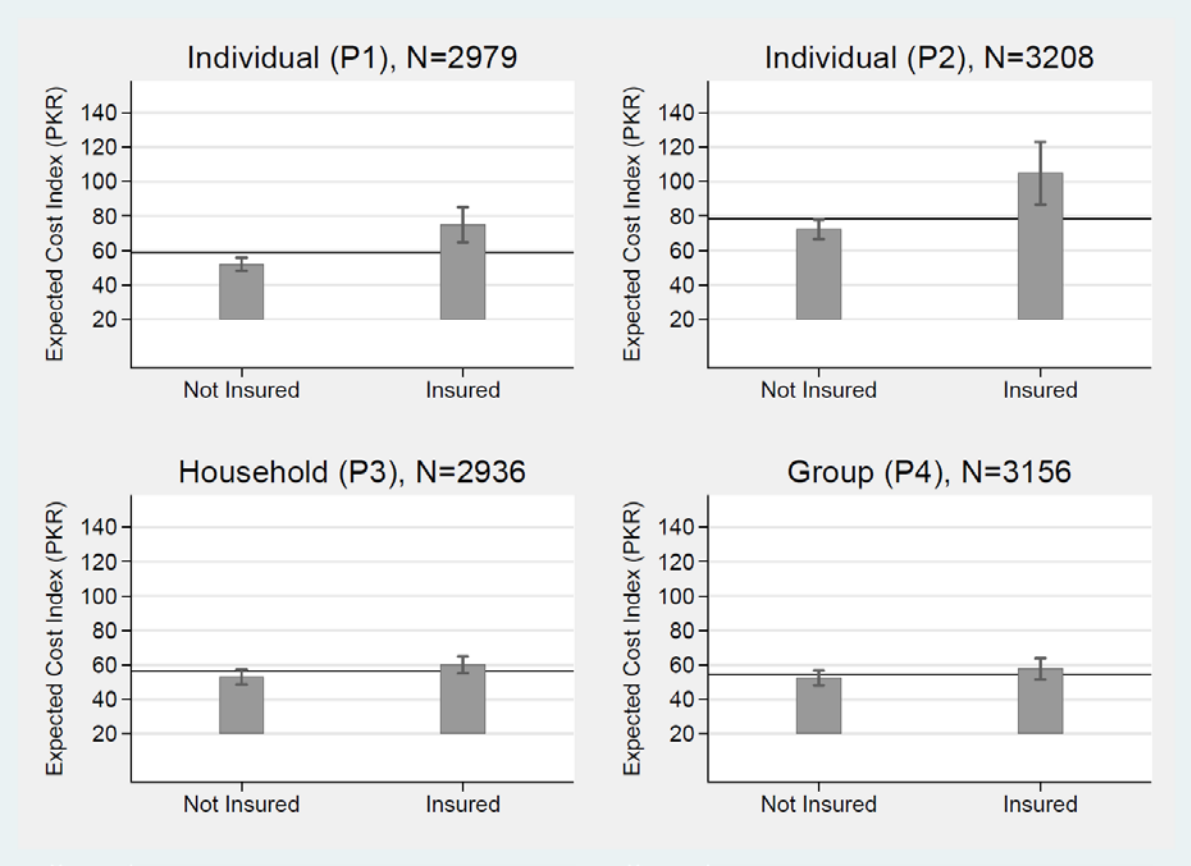
Adverse Selection – Predict Costs using Ex Post Health Events

Use more indicators and translate into expected costs



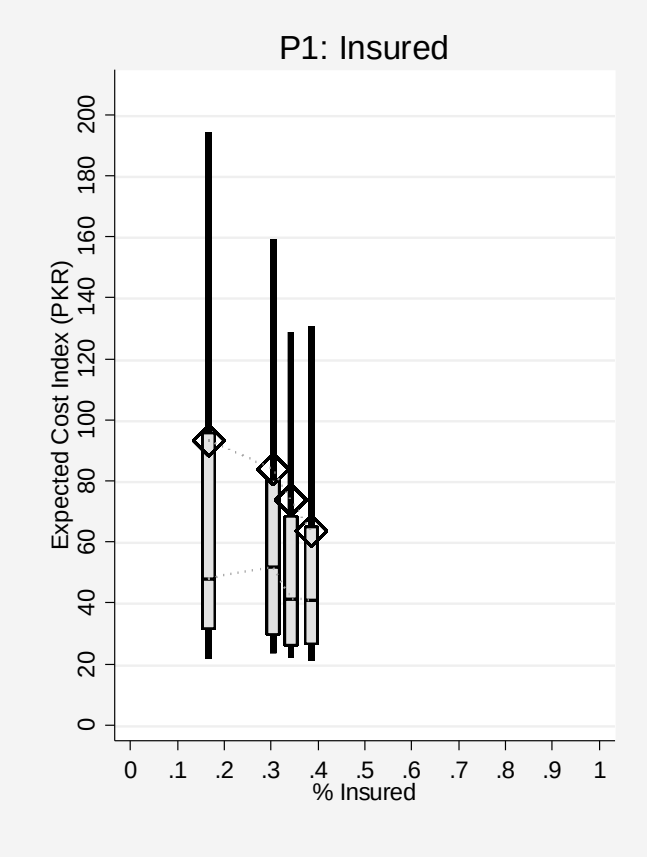
Note: Share of individuals with outpatient treatment in last month

Positive Correlation Test Across Products



→ Positive correlation b/w health index and insurance status mainly in P1 and P2

Using Predicted Costs & Price Variation



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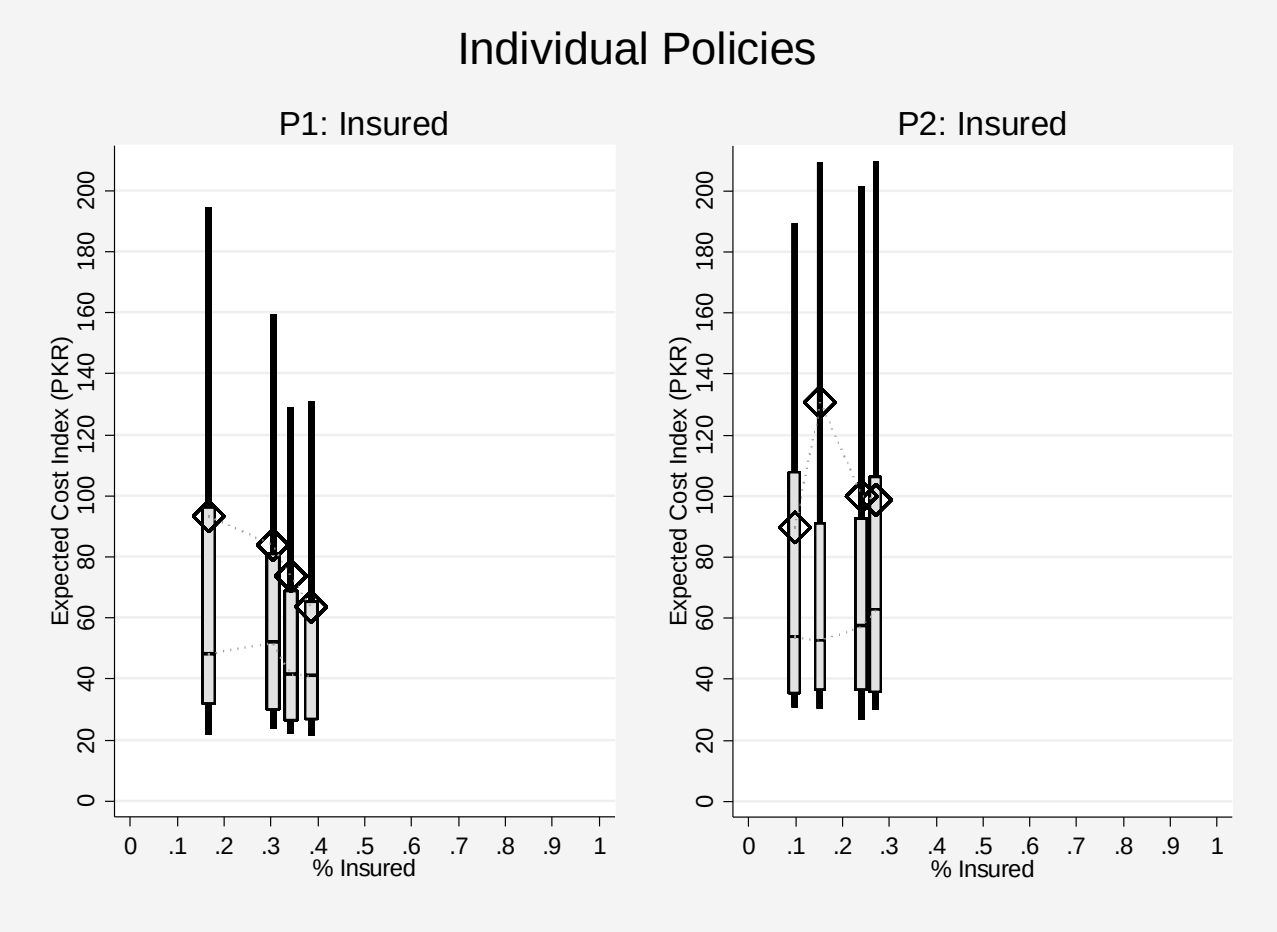

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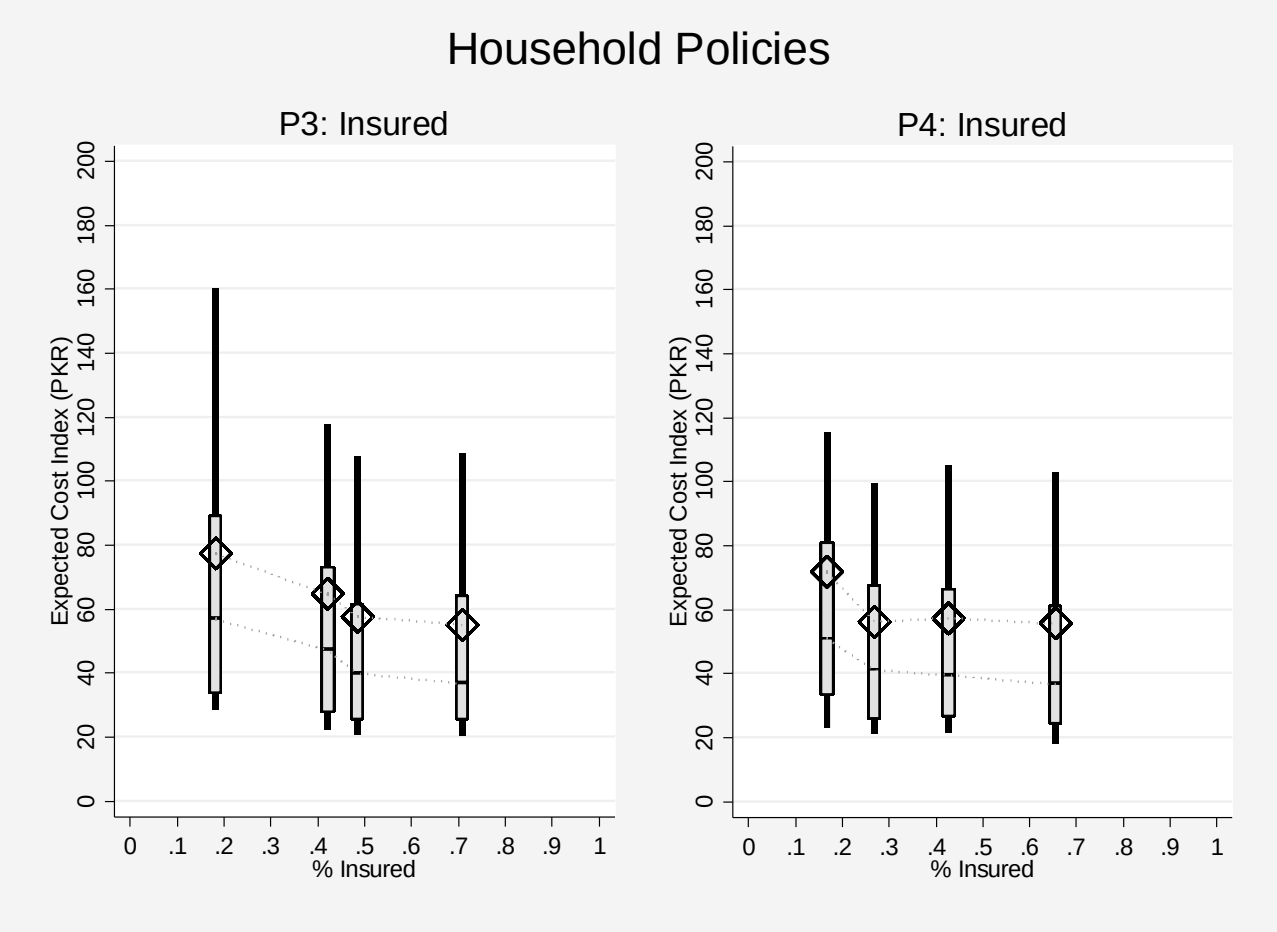
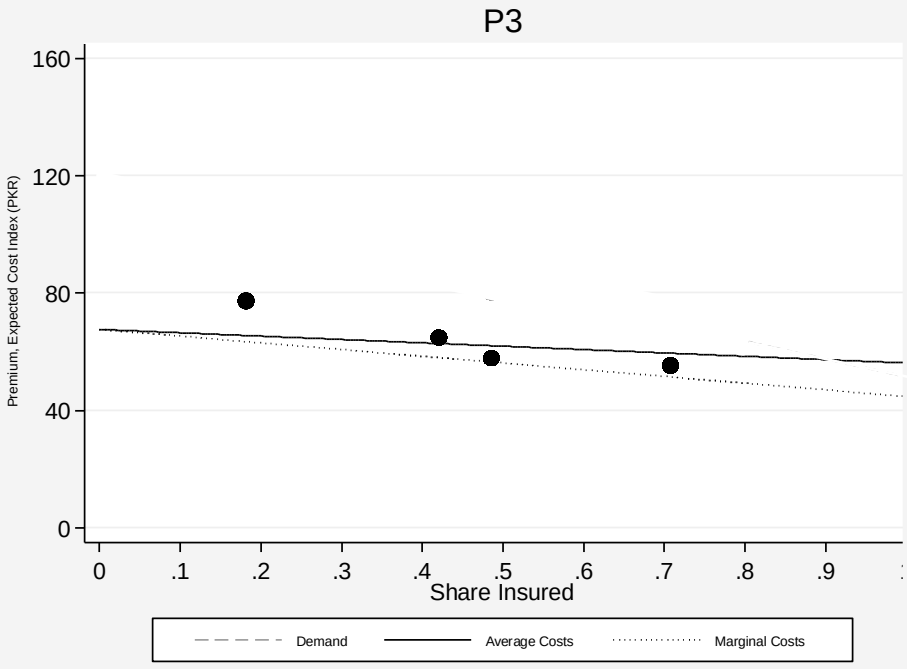


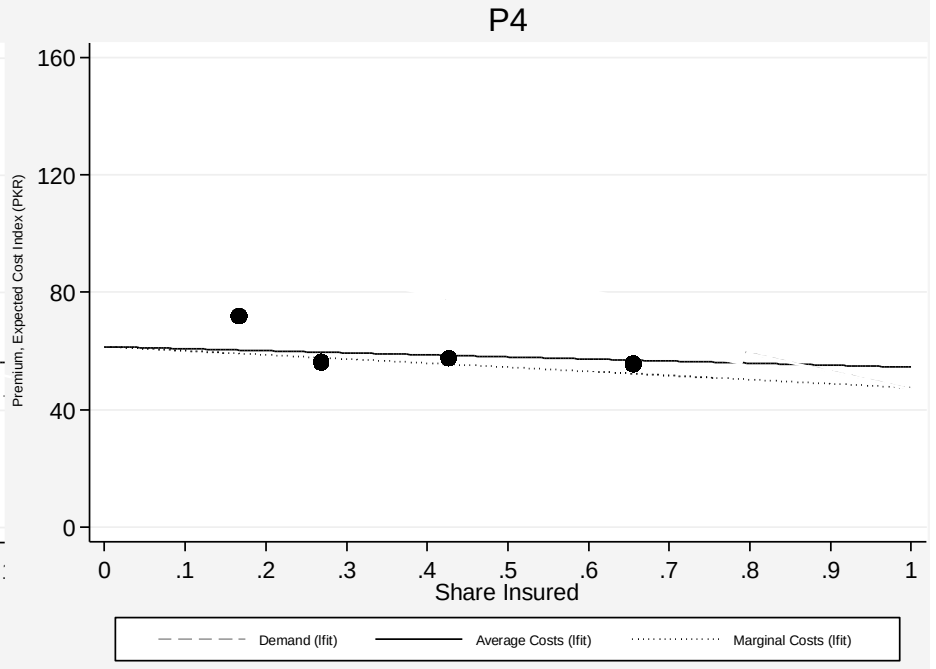
Welfare Analysis: Bundled Policies

→ Use expected cost points to estimate average cost curve
→ Add demand curve

Household Policy

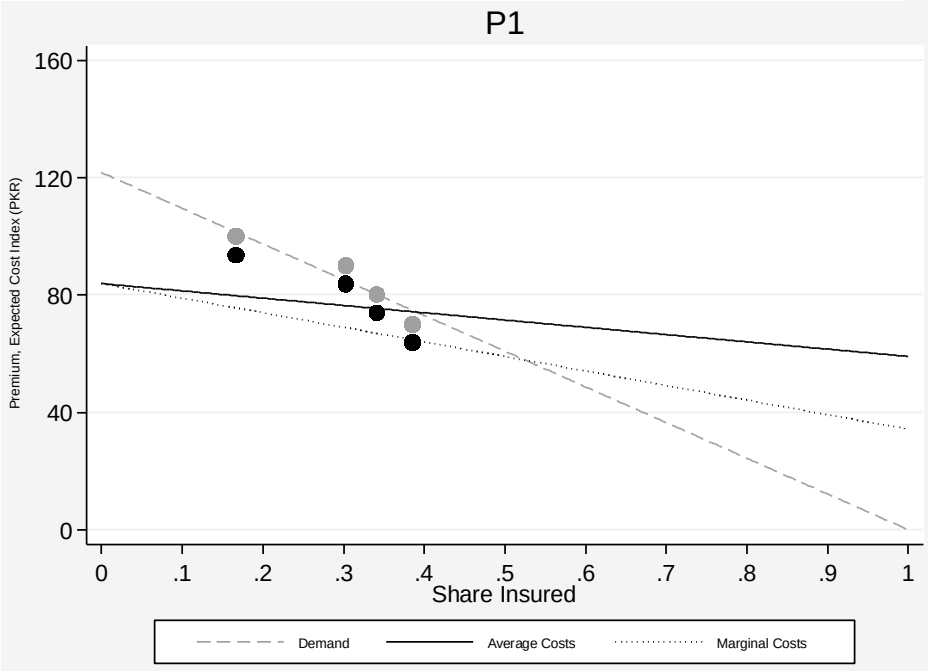


Group Policy

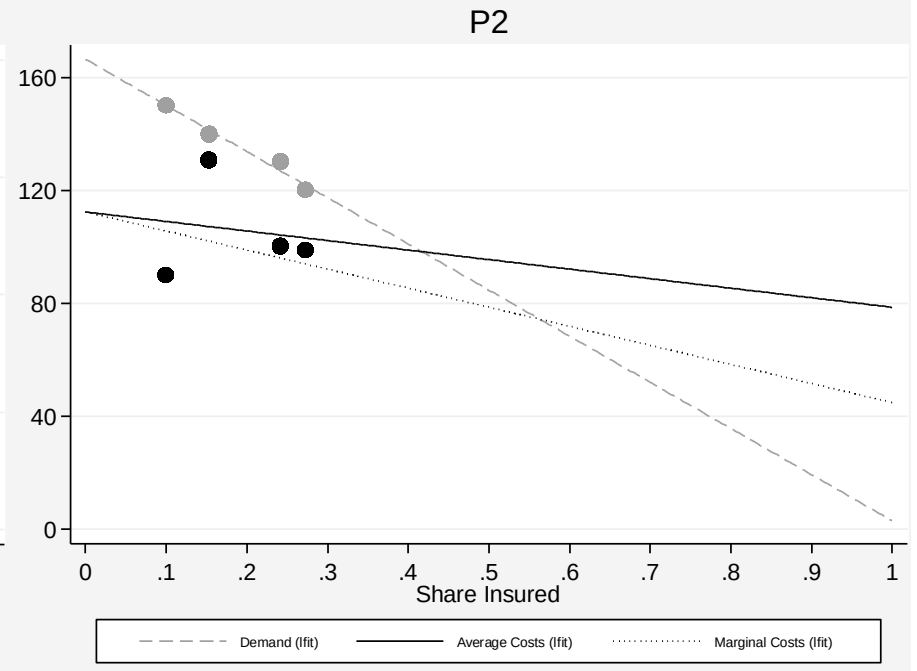


Welfare Analysis: Individual Policies

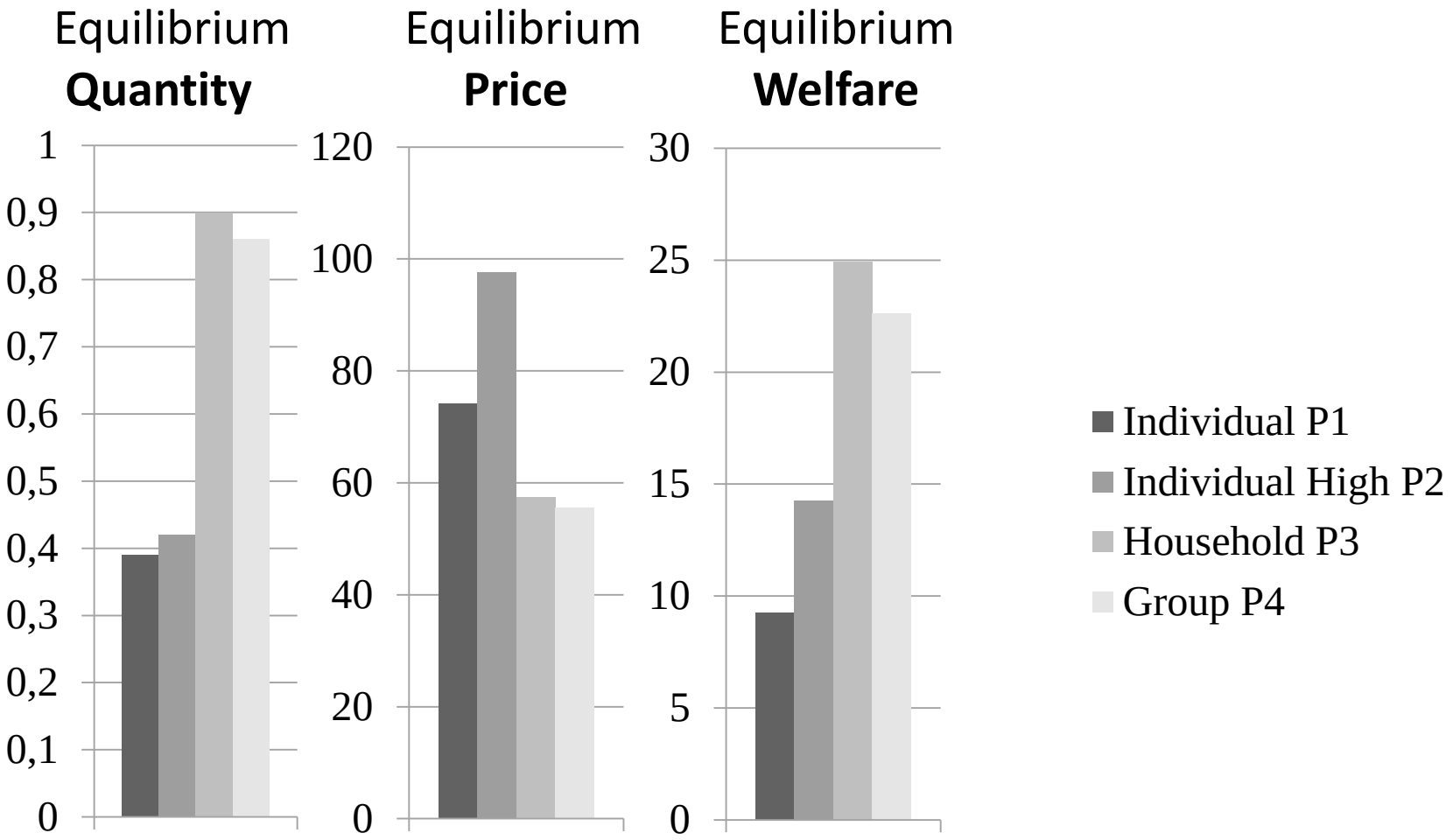
Individual Policy



Individual High Policy



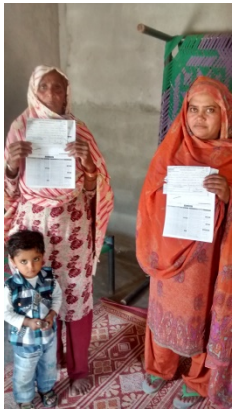
Welfare Analysis: Equilibrium and Efficient Allocations



Conclusion

Rigorous design of pilot allowed considerable learning:

- Demand exists in high-need setting
- Substantial AS in individual hospitalization insurance policies
- Risk bundling on higher levels mitigates AS
- Potentially higher ‘equilibrium welfare’ in bundled products



Thank you
for your attention