THE GRADUATE INSTITUTE GENEVA

PhD Development Economics

Preliminary Thesis Defence

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Introduction

Questions

Cryptocurrency Inflation

- Relevant enough for Development Economics?

Knightian Uncertainty:

- What to do with this critique?

Pensions and Child Growth:

- Negative policy effect explanation?
- Defining of Age-Based and Height-Based Z-scores, correct?
- BMI as convex mapping of Weight-for-Height, significance?

Cryptocurrency Inflation

Often heard problems Bitcoin:

1. There is no inflation
2. Mining is wasteful

Consider Bitcoin together with other Cryptocurrencies

- Expansion in no. of coins, but expansion in no. of currencies
- Miners will move to less-mined currencies, leading to less waste
- Model as positive currency attack (Obstfeld 1986, 1996)

Uncertainty and Risk in Currency Attacks

Knightian Uncertainty in Morris and Shin (1998)

Bastiaan Quast

A review of "Unique equilibrium in a model of self-fulfilling currency attacks" (Morris and Shin 1998)

- Based on currency models Obstfeld (1986, 1995, 1996)
- Finds a unique equilibrium when 'uncertainy' is added

Model:

- State of economic fundamentals: $\theta \sim U[0,1]$
- Pegged at a level larger than fundamentals: $(e* \geq f(\theta))$
- Speculators can short, their payoff: $e^* - f(\theta) - t$
- Peg cost: economic fund. and speculators attacking (α)
- Government derives value: $\nu - c(\alpha, \theta)$ from defending peg

Outcomes:

1. $[0, \underline{\theta}]$, cost always too high, unstable region
2. $[\underline{\theta}, \bar{\theta}]$, enough attack, cost too high, 'ripe for attack'
3. $[\bar{\theta}, 1]$, cost of shorting always outweigh gains, stable region

Uncertainty and Risk in Currency Attacks

Critiques:

1. Strange result, does not correspond to reality
2. The 'distortion' changes uncertainty to risk, effectively increasing the body of knowledge
3. The distortion of perception has a uniform distribution, results do not hold under e.g. Gaussian
4. Speculator risk profile is redefined:

> *For the next step, consider the strategy profile where every speculator attacks the currency if and only if the message x is less than some fixed number k.* *(Morris and Shin 1998, p. 592)*

Pensions and Child Growth

Additional Evidence from South Africa

- Based on "Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold Allocation in South Africa" (Duflo 2000, 2003) methodology
- Address the issue of eligibility-age discrepancy
- South African Household Survey (Southern Africa Labour and Development Research Unit 2008, 2012, 2013)
- Elibility-age equalisation in 2009

Model:

$$y_{it} = \gamma_i + \lambda_t + \mu P_{it}^f + \nu P_{it}^m + X_{it} + \delta T_{it} + \rho T_{it} * P_{it}^m + \epsilon_{it} \quad (3)$$

Pensions and Child Growth

Results: Age-Based Z-scores

Table : Height-for-Age Z-score

specification	1	2	3
w_spen_m	0.2366	*0.8228	0.7908
w_spen_w	-0.2331	0.1053	0.1072
elig.men.60		**-0.3419	**-0.3465
w_spen_m1:elig.men.60			0.0446

Table : Weight-for-Age Z-score

specification	1	2	3
w_spen_m	0.2366	0.2981	0.4780
w_spen_w	-0.2331	-0.3112	-0.3280
elig.men.60		***-0.3475	**-0.3243
w_spen_m1:elig.men.60			-0.2545

Pensions and Child Growth

Results: Height-Based Z-scores

Table : Weight-for-Height Z-score

specification	1	2	3
w_spen_m	-0.3532	-0.3210	-0.4303
w_spen_w	0.0655	0.0371	0.0478
elig.men.60		-0.1417	-0.1574
w_spen_m1:elig.men.60			0.1484

Table : Body-Mass-Index Z-score

specification	1	2	3
w_spen_m	*-0.8058	*-0.7905	*-1.0226
w_spen_w	-0.1592	-0.1956	-0.1742
elig.men.60		-0.1674	-0.2049
w_spen_m1:elig.men.60			0.3407

End Notes

Summary

- Cryptocurrency Inflation, through multiplicity
- Currency Attacks: uncertainty vs. risk, redefining risk profile, uniform distribution
- Pensions and Child Growth: negative effect

Questions

- Negative policy effect: explanation?
- Cryptocurrency Inflation: relevant for Development Economics?
- Knightian Uncertainty: What to do with this critique?

References I

Duflo, Esther. 2000. "Child health and household resources in South Africa: Evidence from the Old Age Pension program." *The American Economic Review* 90 (2): 393–398. http://www.jstor.org/discover/10.2307/117257.

———. 2003. "Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold Allocation in South Africa." *The World Bank Economic Review* 17 (1): 1–25. doi:10.1093/wber/lhg013.

Morris, Stephen, and Hyun Song Shin. 1998. "Unique equilibrium in a model of self-fulfilling currency attacks." *American Economic Review*:587–597. http://www.jstor.org/stable/116850.

References II

Obstfeld, Maurice. 1986. *Rational and self-fulfilling balance-of-payments crises.*

———. 1995. *The logic of currency crises.* Springer.

———. 1996. "Models of currency crises with self-fulfilling features." *European economic review* 40 (3): 1037–1047.

Southern Africa Labour and Development Research Unit. 2008. *National Income Dynamics Study, Wave 1.* `http://www.nids.uct.ac.za/home/`.

———. 2012. *National Income Dynamics Study, Wave 2.* `http://www.nids.uct.ac.za/home/`.

———. 2013. *National Income Dynamics Study, Wave 3.* `http://www.nids.uct.ac.za/home/`.