Discussion on "The Macroeconomics of Microfinance" by Buera et al. (2021)

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Introduction

- Microfinance: credit targeted toward the poor who may otherwise lack access to financing.
- Empirical literature evaluating microfinance programs is limited to partial-equilibrium (PE) analysis:
  (i) focuses on individual variations: the general equilibrium effects (i.e. globally increasing interest rate and wage) are removed by time fixed effect;
  (ii) programs are small-scaled
- This paper evaluates both the PE and general-equilibrium (GE) aggregate and distributional effects.
  - quantitative dynamic general equilibrium model
- The paper shows that PE and GE effects are qualitatively and quantitatively different.

Results Overview: Aggregate Effects

- PE: output and capital rises but the allocative efficiency suffers because more capital is allocated to entrepreneurs with below-average productivity, who benefit more directly from microfinance.
- GE: interest rate and wage increase. Capital stock decrease but TFP rises because higher factor prices limit the entry of low productivity entrepreneurs.

Results Overview: Distributional Effects

- PE: the largest direct gains accrue to the poor (who take out microloans for consumption) and those who are marginal entrepreneurs (who take out microloans for production).
- GE: higher wages benefit workers (the poor) and higher interest rate benefits the wealthy through higher returns on their wealth. A small subset of entrepreneurs are worse off because lower profits.

Model: Fundamental

- A measure N of infinitely lived individuals:

$$U = \mathbb{E}\left[\sum_{t=0}^{\infty} \beta^t u(c_t)\right], \quad u(c_t) = \frac{c_t^{1-\sigma}}{1-\sigma}$$

- Three state variables: (a, x, z)
  - a: wealth
  - x: labor productivity, $x \in \{x_l, x_h\}$, π_x: the probability of transferring types.
  - z: independently drawn from an invariant distribution $\mu(z)$ with hazard rate $1 - \gamma$.
- Each period, entrepreneurs choose to become a worker (wx) or an entrepreneur ($zf(k,l) - wl - Rk$):
  - Entrepreneurs: high z and low x

Model: Credit Constraint

- Without microfinance, the incentive-compatible credit constraint is

$$\max_l\{zf(k,l)-wl\}-Rk+(1+r)a \geq (1-\phi)\left[\max_l\{zf(k,l)-wl\}+(1-\delta)k\right]$$

The upper bound of capital: $\bar{k}(a,z;\phi)$, $\uparrow a, \uparrow z$

(i) Individuals deposit wealth a and rent capital k at rate R from financial intermediaries.

(ii) Credit constraint arises from imperfect enforcement of contract.

(iii) Entrepreneurs may renege on capital rental contracts and keep a fraction of their economic resources.

(iv) In the following period, the entrepreneurs regain access to financial markets and are not treated any differently.

Model: Microfinance

- Microfinance: guarantee individuals' access to and repayment of financing up to b_{MF} with an interest rate spread v because enforcement is costly.
- Microfinance can be used for consumption or production as capital.
- Given the microfinance capital, k_{MF}, the credit constraint for conventonial capital is

$$\max_l\{zf(k_{MF}+k_{CL},l)-wl\}-Rk_{CL}+(1+r)a$$
$$\geq(1-\phi)\left[\max_l\{zf(k_{MF}+k_{CL},l)-wl\}+(1-\delta)(k_{MF}+k_{CL})\right]-(1-\delta)k_{MF}$$

- Everyone has access to microfinance, but not everyone will choose to use microfinance.

Value Functions

$$v(a,x,z) = \max\{v^W(a,x,z), v^E(a,x,z)\} \tag{1}$$

$$v^W(a,x,z) = \max_{c,a' \geq -b_{\text{MF}}} u(c) + \beta \mathbb{E}_{x',z'}\left[v'\left(a',x',z'\right)|x,z\right] \tag{5}$$

$$\text{s.t. } c + a' \leq wx + (1+r)a\mathbf{1}_{a\geq 0}(a) + (1+r_{\text{MF}})a\mathbf{1}_{a<0}(a),$$

$$v^E(a,x,z) = \max_{c,a',k_{\text{MF}},k_{\text{CL}},l} u(c) + \beta \mathbb{E}_{x',z'}\left[v\left(a',x',z'\right)|x,z\right] \tag{6}$$

$$\text{s.t. } c + a' \leq zf(k_{\text{MF}} + k_{\text{CL}}, l) - R_{\text{MF}}k_{\text{MF}} - Rk_{\text{CL}} - wl$$

$$+ (1+r)a\mathbf{1}_{a\geq 0}(a) + (1+r_{\text{MF}})a\mathbf{1}_{a<0}(a) \tag{7}$$

$$k_{\text{CL}} \leq \bar{k}_{\text{CL}}(a,z;\phi,b_{\text{MF}}) \tag{8}$$

$$k_{\text{MF}} \leq \bar{k}_{\text{MF}}(a;b_{\text{MF}}) \equiv b_{\text{MF}} + \min\{a,0\} \tag{9}$$

$$a' \geq -b_{\text{MF}}.$$

Occupational Choice and Saving

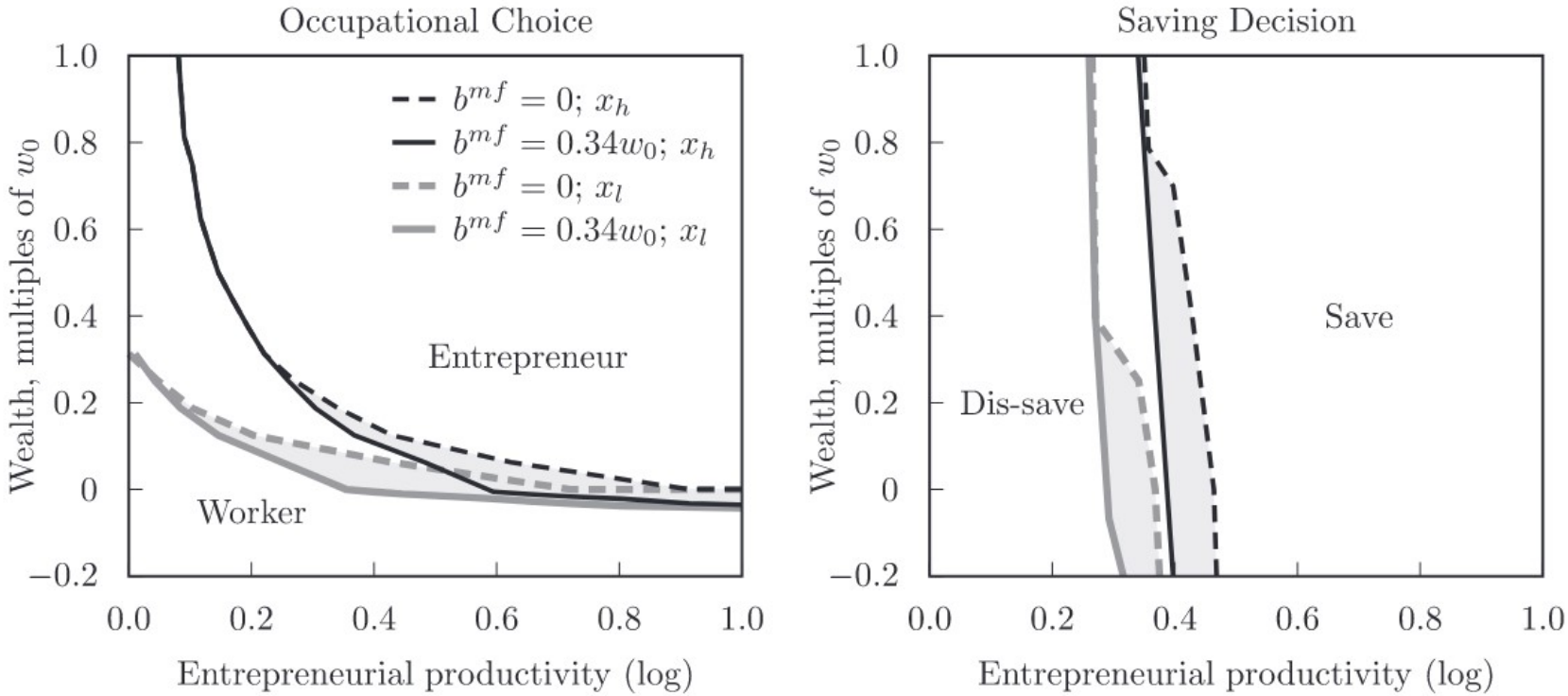

FIGURE 1

Figure 1: Occupation and Saving Decisions

Occupation decision: (a, x, z) :$\uparrow x, \uparrow z, \uparrow a$

PE Aggregate Effects

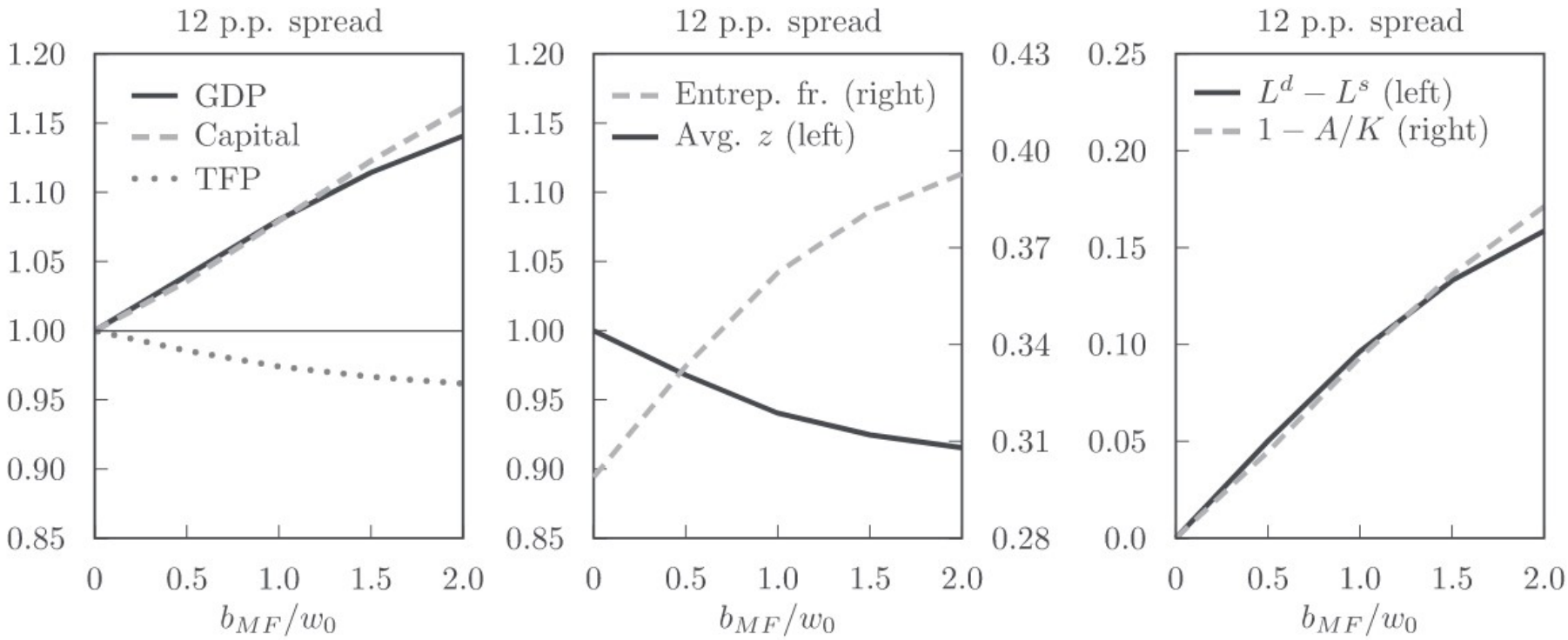

Figure 2: PE Effects

TFP is determined by both intensive margin (the allocation of capital across entrepreneurs) and the extensive margin (the set of entrepreneurs operating)

GE Aggregate Effects

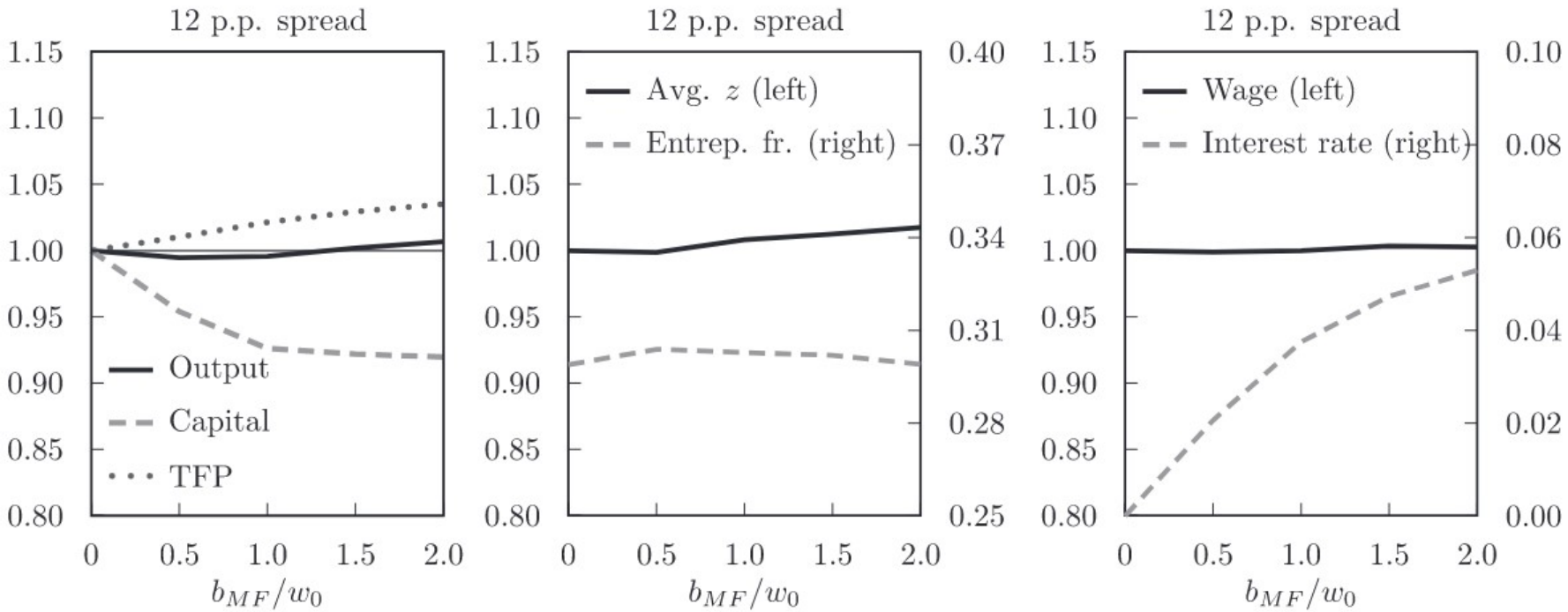

Figure 3: GE Effects

Distributional Effects

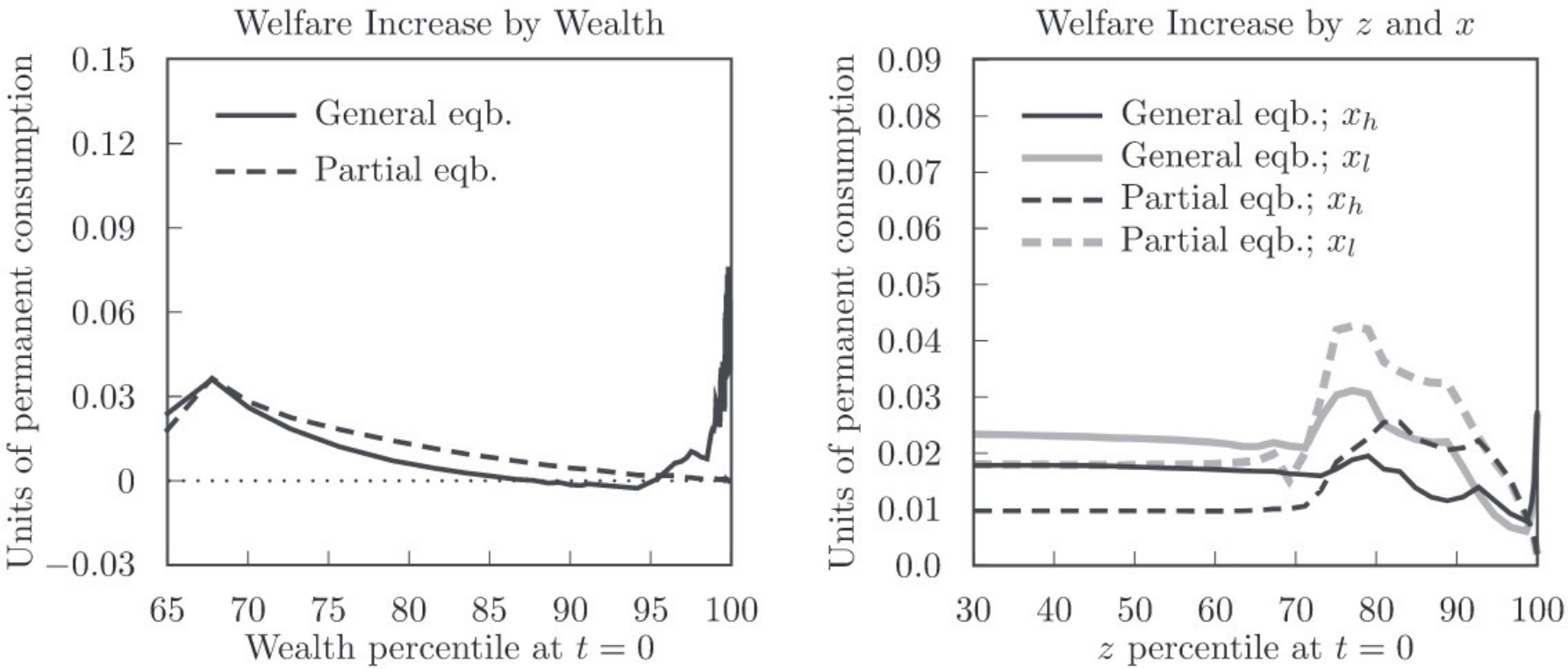

Figure 4: Distributional Effects

Reference I

Buera, F. J., Kaboski, J. P., and Shin, Y. (2021). The macroeconomics of microfinance. *The Review of Economic Studies*, 88(1):126–161.