

# SELECTION OF MACRO-ABM

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# **COMPONENTS IN MY MODEL**

# MAIN FEATURES/ REQUIREMENTS

1. Multiple portfolio(MoP) decisions : H-Cash / F-CBDC / Deposit
2. Social trends : Acceptance of MoP from network
3. Balance sheet mismatch : Bank run episode

Other features can be arbitrarily implemented.

1. Consumption / saving decision
2. Labor decision
3. ...

Must find implementations for each feature to best complement my requirements.

# COMPONENTS OF LISTED MABMS

- C-good : HH, C-firm
- K-good : C-firm, K-firm
- Labor : HH, C-firm
- Credit : Bank, firms
- CB

## Components to neglect

Not crucial to my model : Labor, K-good

# CONSUMPTION DECISION

Reminder : The design must be able to easily extendable to implement:

1. Learning from buyers/ sellers
2. Use multiple means of payments

# GENERAL RULE – MABM APPROACH TO CONSUMPTION/SAVING DECISIONS

- Two-stage procedure
  1. Consumption budget
  2. consumption bundle
- Agents don't follow explicit optimization procedure (Usually adaptive)
- General behavior rule

$$C_{h,t} = c_H W_{h,t}^H + c_F W_{h,t}^F$$

$W^H$ : Human capital,  $W^F$ : Financial wealth

- Transition function

$$W_{h,t}^F = RW_{h,t-1}^F + Y_{h,t} - C_{h,t}$$

$$S_{h,t} = W_{h,t}^F - W_{h,t-1}^F$$

# SPECIFICATION FOR EACH MAMB

## ■ AGH:

- ▶  $c_H = c_F = c$
- ▶  $W_{h,t}^H = k^H Y_{h,t}^P$  depends on permanent income
- ▶  $(Y_{h,t}^P - Y_{h,t-1}^P) = (1 - \xi)(Y_{h,t-1} - Y_{h,t-1}^P)$ , updates adaptively
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## ■ EUBI/EUGE

- ▶  $S_{h,t} = v(\omega^F Y_{h,t} - W_{h,t}^F)$ , targets a wealth.

- Designed to match stylized fact (ex: consumption smoothing, precautionary saving, ...).
- Important when exploring business cycle
- Not so important when social interaction is focused. (Is it?)

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- **EUBI/EUGE**

1. Consumers receive information of product within range
2. Chance of buying

$$P[h \text{ select good } i] = \frac{\exp(-\gamma \log P_{i,t})}{\sum_j \exp(-\gamma \log P_{j,t})}$$

Multinomial logit model