

# Discussion of “Limited Records and Credit Cycles”

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Sushant Acharya

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FRB New York


# Summary

- Motivation: There seems to be something up with financial markets
- This paper: A theory of endogenous credit cycles based on limited memory

## simple example

- population: 😊😊😊😊(always repay), 😞😞😞😞(never repay)
- $Pr(\text{investment opportunity}) = 0.5$ ,  $R = 2$
- $\mu_t =$  fraction of 😊.
  - Lend if  $\mu_t R \geq 1$
- Various assumptions on memory

# forget all types after 1 period

| T | Unknown   | Good        | Bad         | $\mu$      |
|---|---|-------------|-------------|------------|
| 0 |  | $\emptyset$ | $\emptyset$ | 1/2 (Lend) |
|   |   |             |             |            |

# forget all types after 1 period

| T | Unknown   | Good  | Bad   | $\mu$      |
|---|---|---|---|------------|
| 0 |  | $\emptyset$   | $\emptyset$   | 1/2 (Lend) |
| 1 |  |  |  | 1/2 (Lend) |
|   |   |   |   |            |

# forget all types after 1 period

| T | Unknown   | Good  | Bad   | $\mu$        |
|---|---|---|---|--------------|
| 0 |  | $\emptyset$   | $\emptyset$   | 1/2 (Lend)   |
| 1 |  |  |  | 1/2 (Lend)   |
| 2 |  |  |  | 2/5 (Freeze) |

# forget all types after 1 period

| T | Unknown   | Good  | Bad   | $\mu$        |
|---|---|---|---|--------------|
| 0 |  | $\emptyset$   | $\emptyset$   | 1/2 (Lend)   |
| 1 |  |  |  | 1/2 (Lend)   |
| 2 |  |  |  | 2/5 (Freeze) |
| 3 |  |  | $\emptyset$   | 3/7 (Freeze) |

# forget all types after 1 period

| T | Unknown  | Good | Bad | $\mu$        |
|---|----------|------|-----|--------------|
| 0 | 😊😊😊😊😞😞😞😞 | ∅    | ∅   | 1/2 (Lend)   |
| 1 | 😊😊😞😞     | 😊😊   | 😞😞  | 1/2 (Lend)   |
| 2 | 😊😊😞😞😞    | 😊😊   | 😞   | 2/5 (Freeze) |
| 3 | 😊😊😊😊😞😞😞😞 | 😊    | ∅   | 3/7 (Freeze) |
| 4 | 😊😊😊😊😞😞😞😞 | ∅    | ∅   | 1/2 (Lend)   |

Partial memory can generate cycles



## What causes this?

- Forgetting everything?

OR

- Forgetting bad things?

OR

- Forgetting good things?

## no or full memory

- Remebering everything clearly cannot give cycles

# no or full memory

- Remembering everything clearly cannot give cycles
- **Forgetting everything** also cannot give cycles

| T | Unknown   | Good        | Bad         | $\mu$      |
|---|---|-------------|-------------|------------|
| 0 |  | $\emptyset$ | $\emptyset$ | 1/2 (Lend) |
| 1 |  | $\emptyset$ | $\emptyset$ | 1/2 (Lend) |

# I. forget good immediately, remember bad for 1 period

| T | Unknown   | Good        | Bad   | $\mu$      |
|---|---|-------------|---|------------|
| 0 |  | $\emptyset$ | $\emptyset$   | 1/2 (Lend) |
| 1 |  | $\emptyset$ |  | 2/3 (Lend) |
| 2 |  | $\emptyset$ |  | 4/7 (Lend) |
| 3 |  | $\emptyset$ | $\emptyset$   | 1/2 (Lend) |

No cycles! Lending all the time! **NOT THE CULPRIT**

## II. forget good immediately, remember bad forever

| T        | Unknown   | Good        | Bad   | $\mu$      |
|----------|---|-------------|---|------------|
| 0        |  | $\emptyset$ | $\emptyset$   | 1/2 (Lend) |
| 1        |  | $\emptyset$ |  | 2/3 (Lend) |
| 2        |  | $\emptyset$ |  | 4/5 (Lend) |
| $\vdots$ |   |             |   |            |
| $\infty$ |  | $\emptyset$ |  | 1 (Lend)   |

Again, lend all the time

### III. remember good for 1 period , forget bad immediately

| T | Unknown   | Good  | Bad         | $\mu$        |
|---|---|---|-------------|--------------|
| 0 |  | $\emptyset$   | $\emptyset$ | 1/2 (Lend)   |
| 1 |  |  | $\emptyset$ | 1/3 (Freeze) |
| 2 |  |  | $\emptyset$ | 3/7 (Freeze) |
| 3 |  | $\emptyset$   | $\emptyset$ | 1/2 (Lend)   |

Still get a cycle.

Worse since 2/3 of the time there is a freeze!

#### IV. remember good forever , forget bad immediately

| T | Unknown   | Good  | Bad         | $\mu$        |
|---|---|---|-------------|--------------|
| 0 |  | $\emptyset$   | $\emptyset$ | 1/2 (Lend)   |
| 1 |  |  | $\emptyset$ | 1/3 (Freeze) |
| 2 |  |  | $\emptyset$ | 1/3 (Freeze) |

Some people who get recognized as Good early sit around and do nothing.

Only 1 project financed from period 1 onwards.

## summary

- Punishing 😞 is not the problem, rewarding 😊 is the issue
- Identifying and remembering 😊 creates negative informational externality on currently unknown 😊
- gets worse if you forget 😞 soon and remember 😊 for longer
  - bankruptcy is forgotten over time but no legal requirement to forget good behavior



## some other applications

- labor market: quality of pool of job-seekers changes over the business cycle.
  - share of hires out of unemployed lower in recessions relative to job-to-job transitions.
  - avg. quality  $\uparrow$  during downturns. potentially counters the tendency for cycles.
- [Acharya and Wee \(2016\)](#): changing composition of pool of job-seekers can help account for low “match-efficiency” during recessions.

## conclusion

- very Interesting idea!
- I really enjoyed reading this paper