

Discussion of Jorge Abad, Galo Nuno, Carlos Thomas'

“CBDC and the operational framework of monetary policy”

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Questions

- CBDC is high on the agenda of many central banks
- ... many papers studied the macro impact of CBDC, few study how the MP implementation framework impacts the consequences of CBDC
- This paper is one exception

Main results

1. As long as the CB operates a **floor system**, CBDC has a **minor impact** on the economy (CBDC take-up = 20% of GDP → reduction in capital <1%)
2. Introducing CBDC has a **small contractionary effect**, lowering inflation
3. Even if tiny, **remunerating** CBDC can **undo the negative** effects

Set up (timeline)

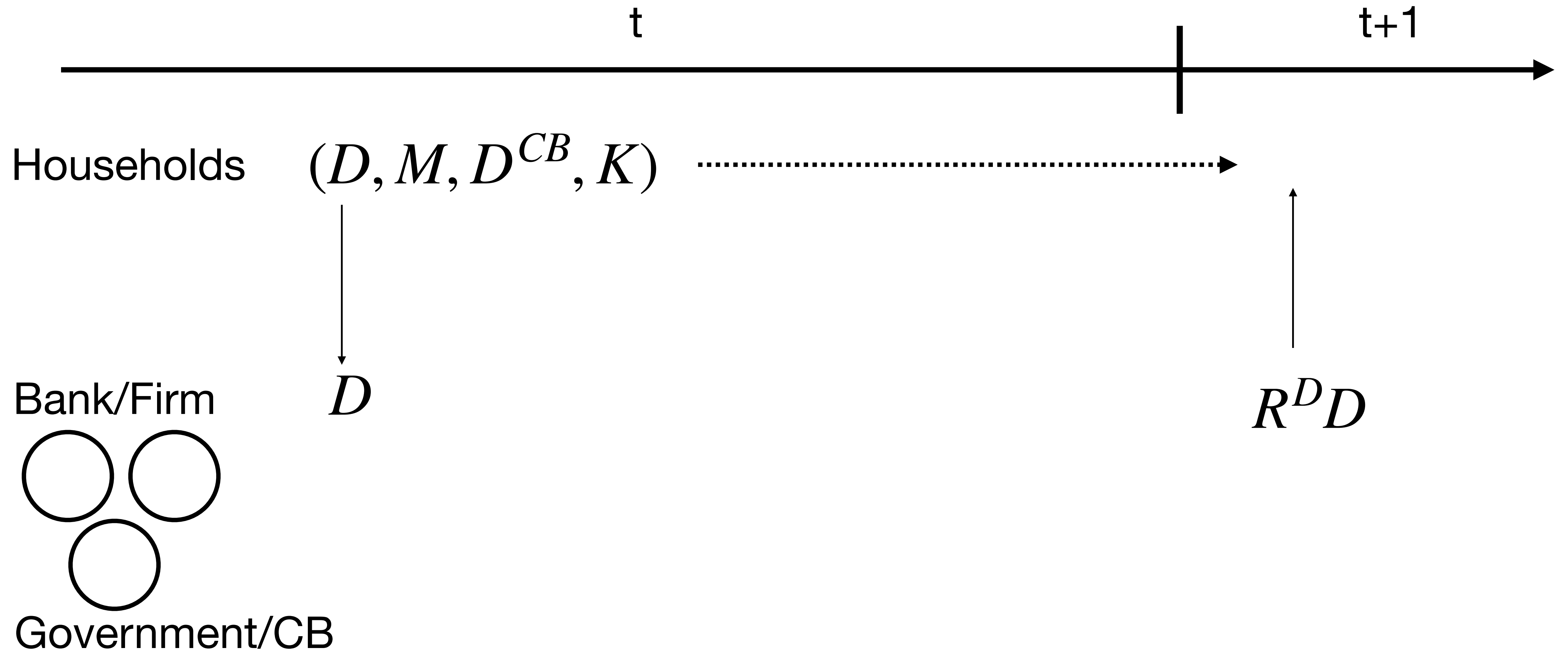


Households (M, D^{CB}, K)

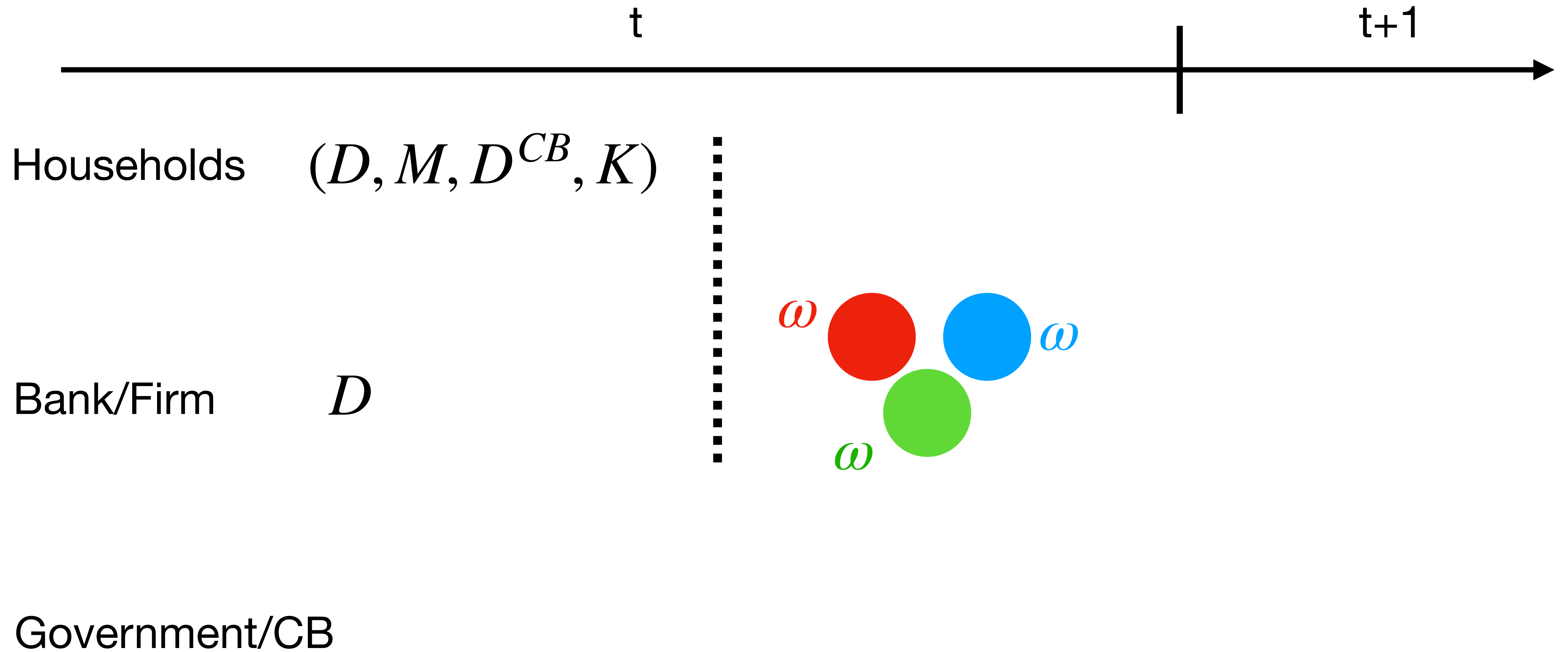
Bank/Firm

Government/CB

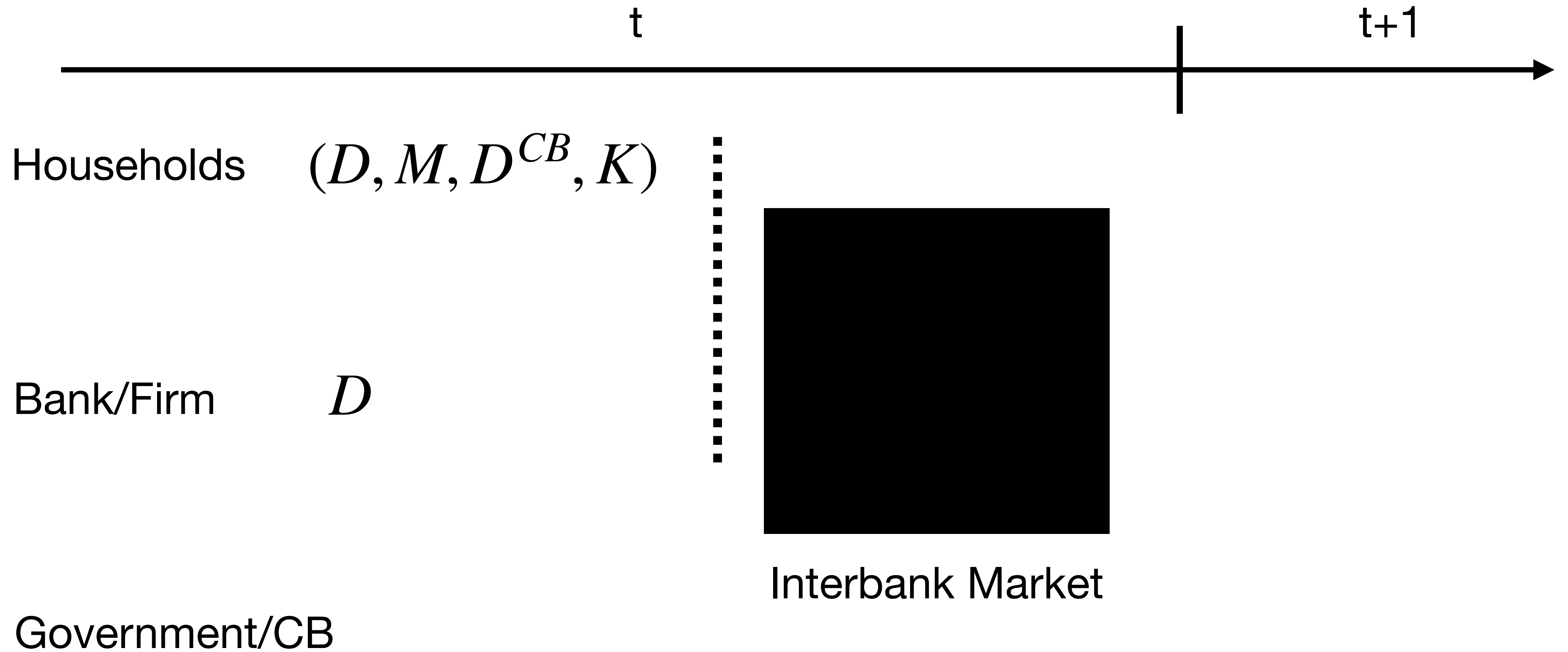
Set up



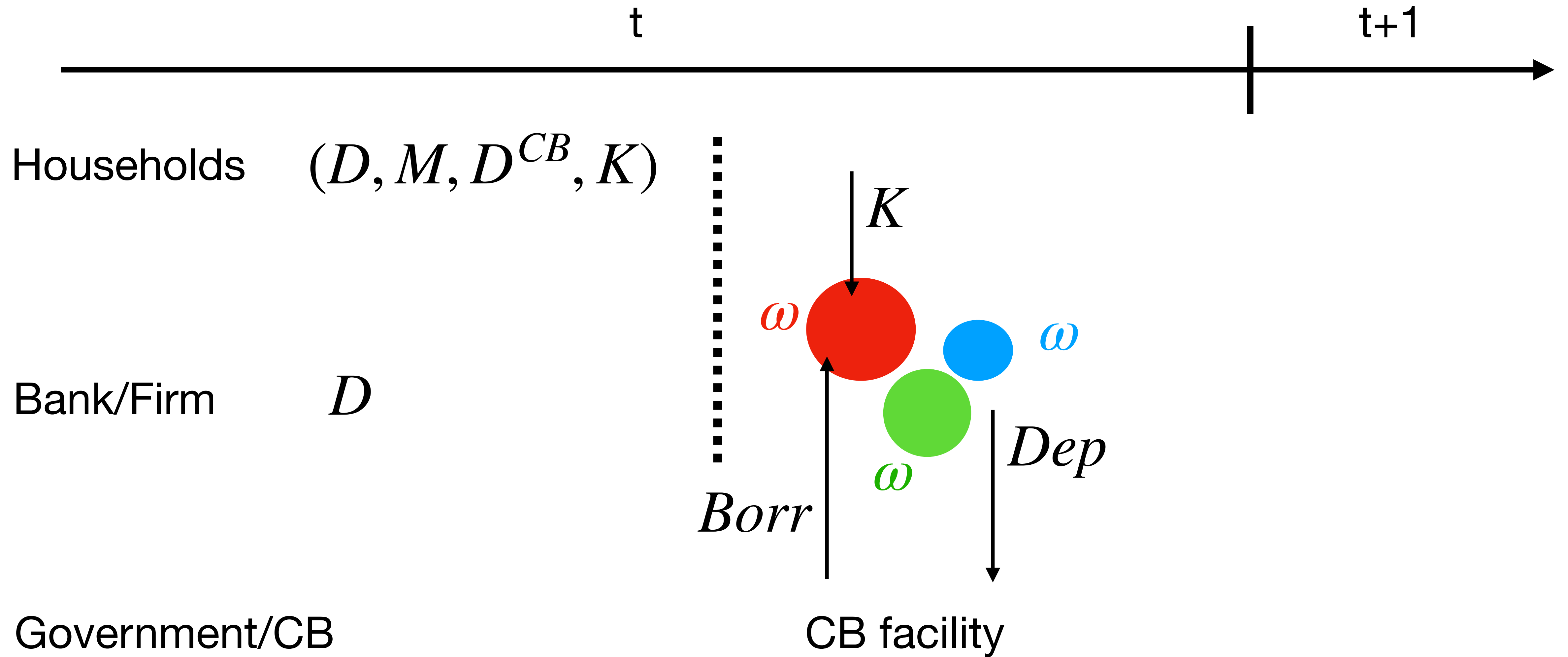
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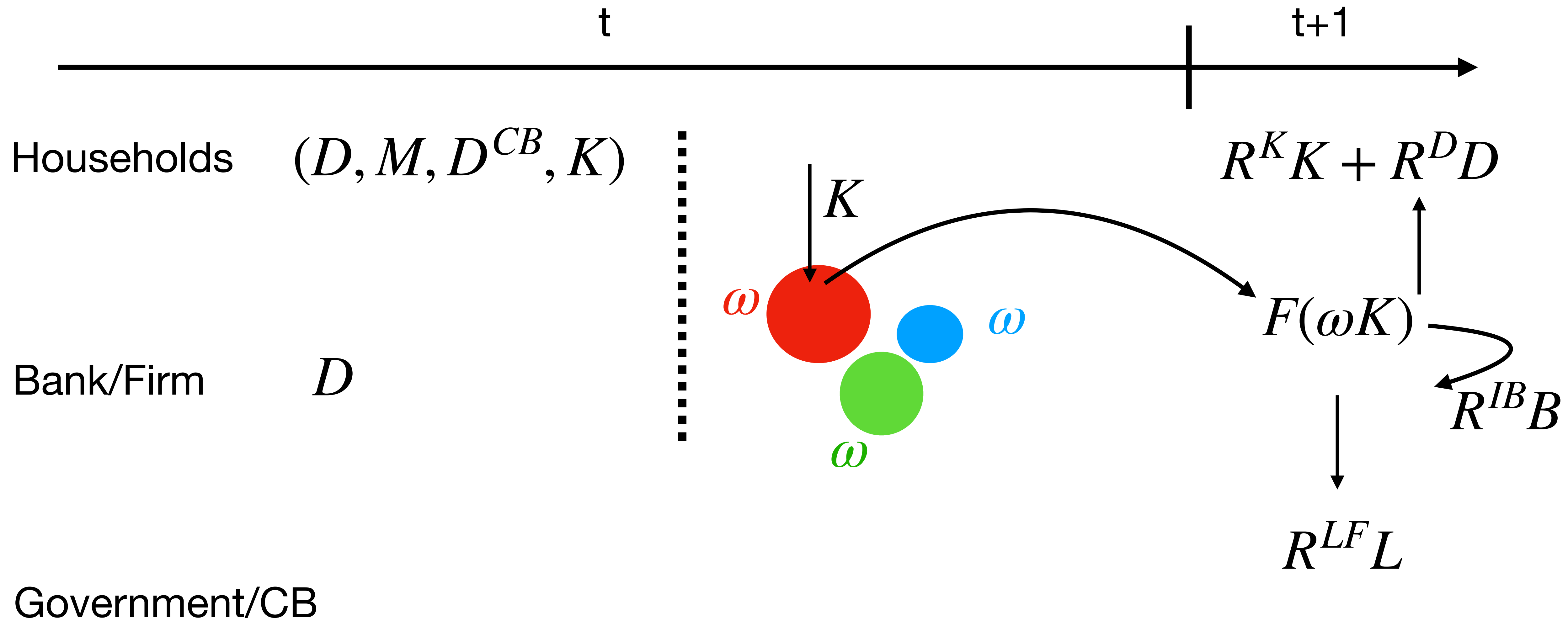
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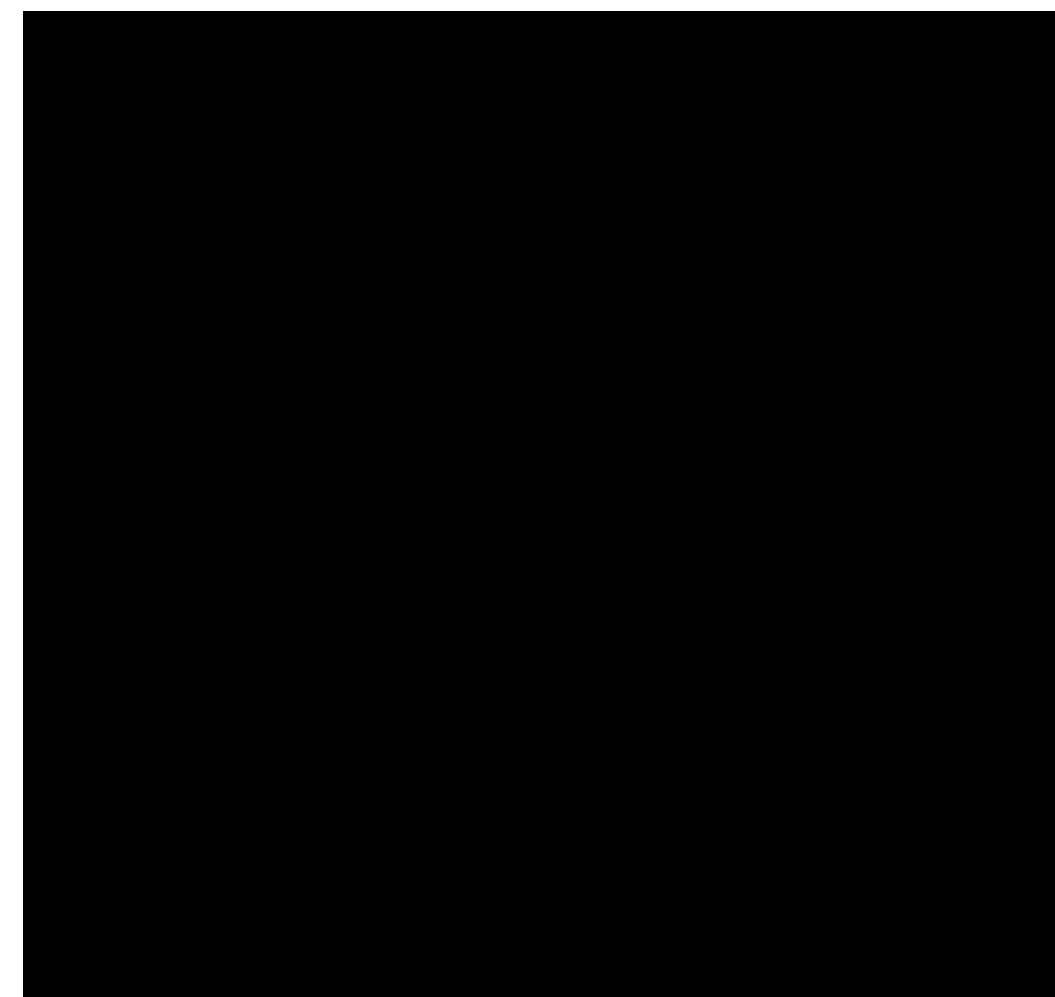
Set up



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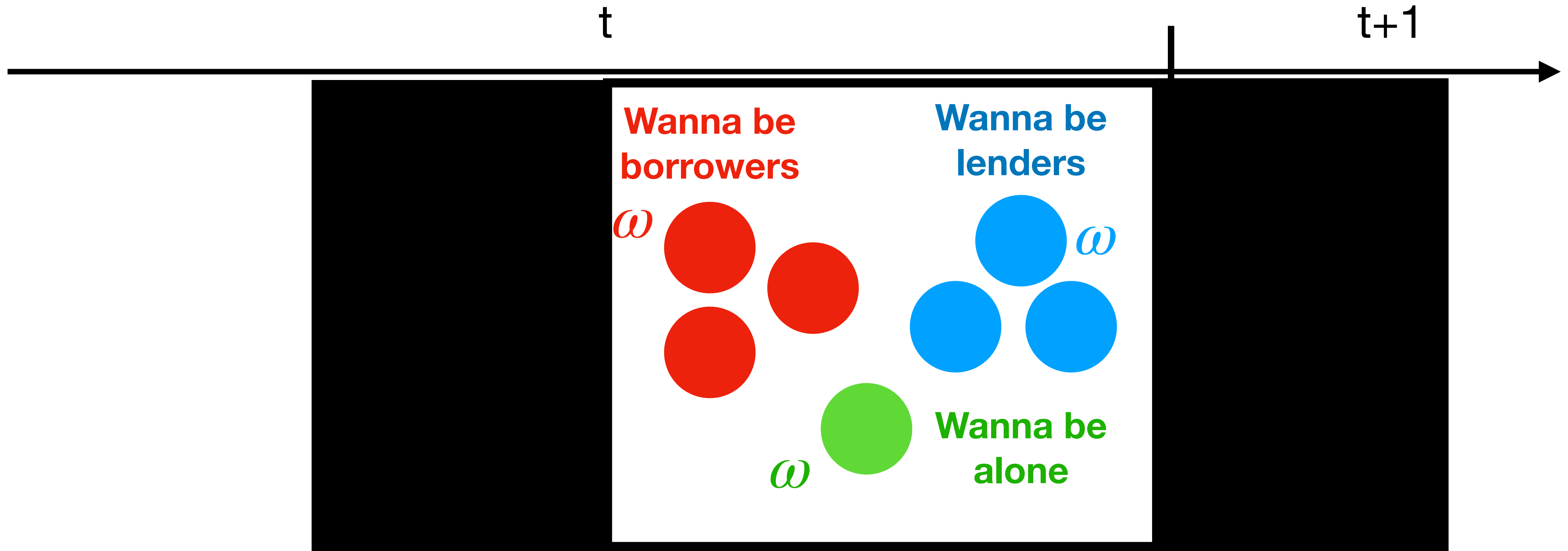


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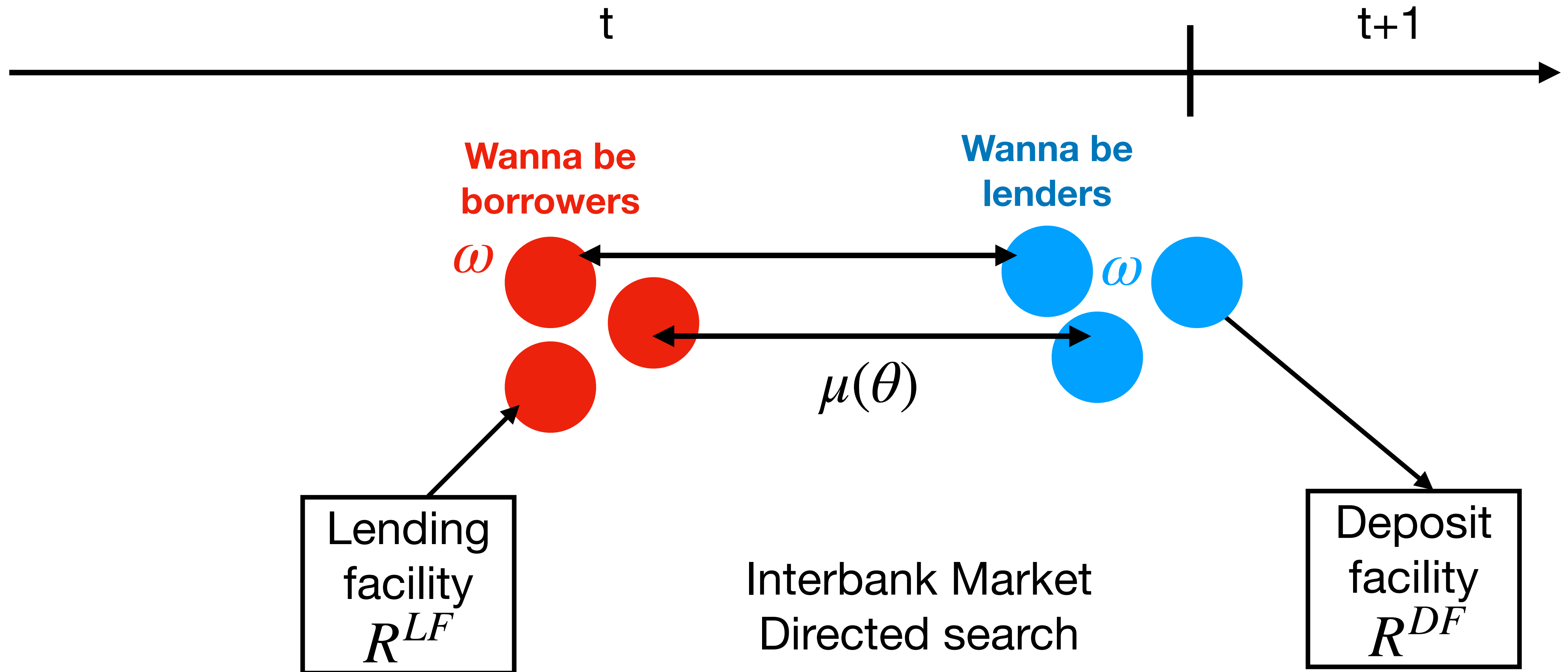
Interbank Market

Set up (timeline)



Interbank Market
Directed search

Set up (timeline)

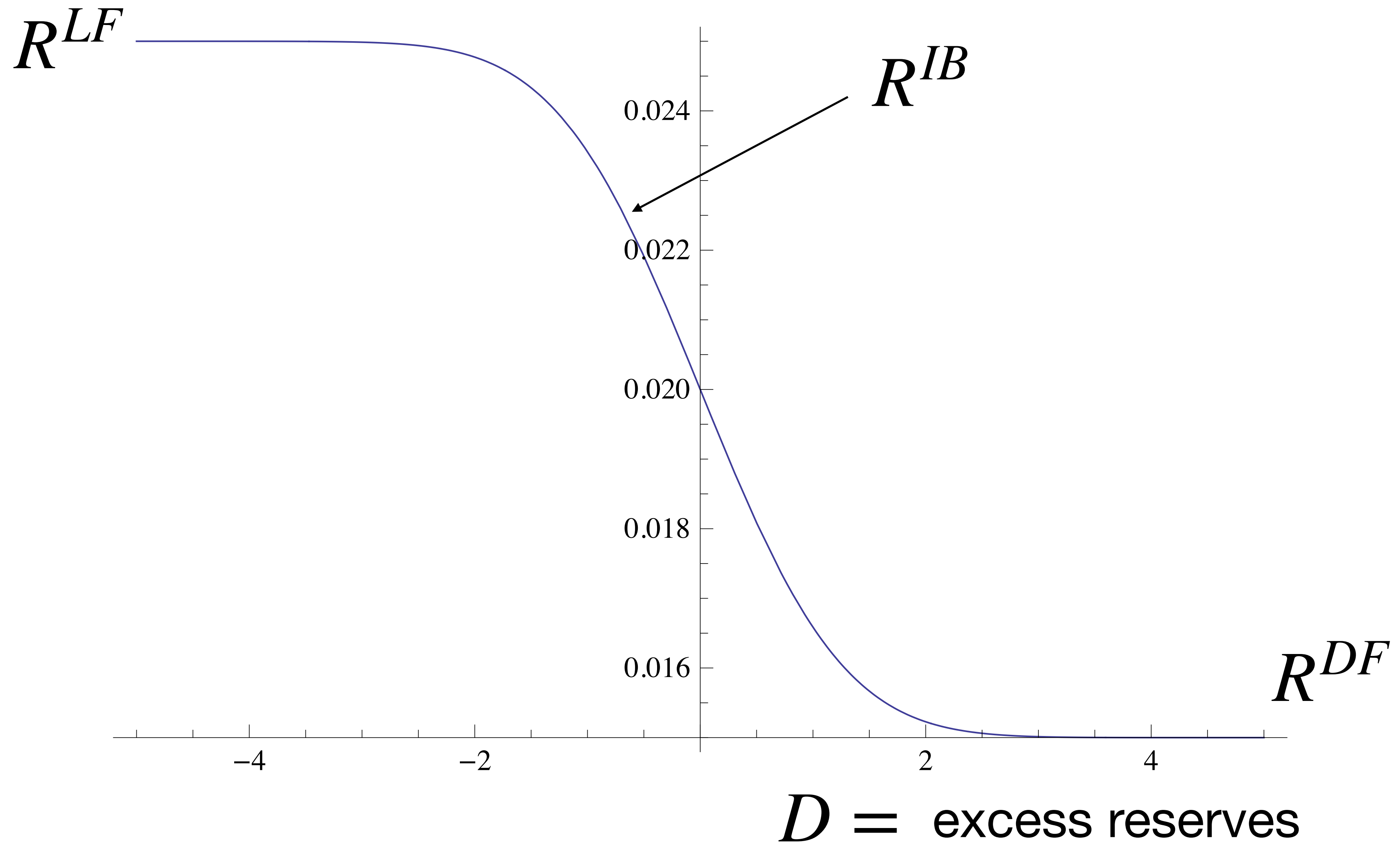


A “modern” Poole (1968) model

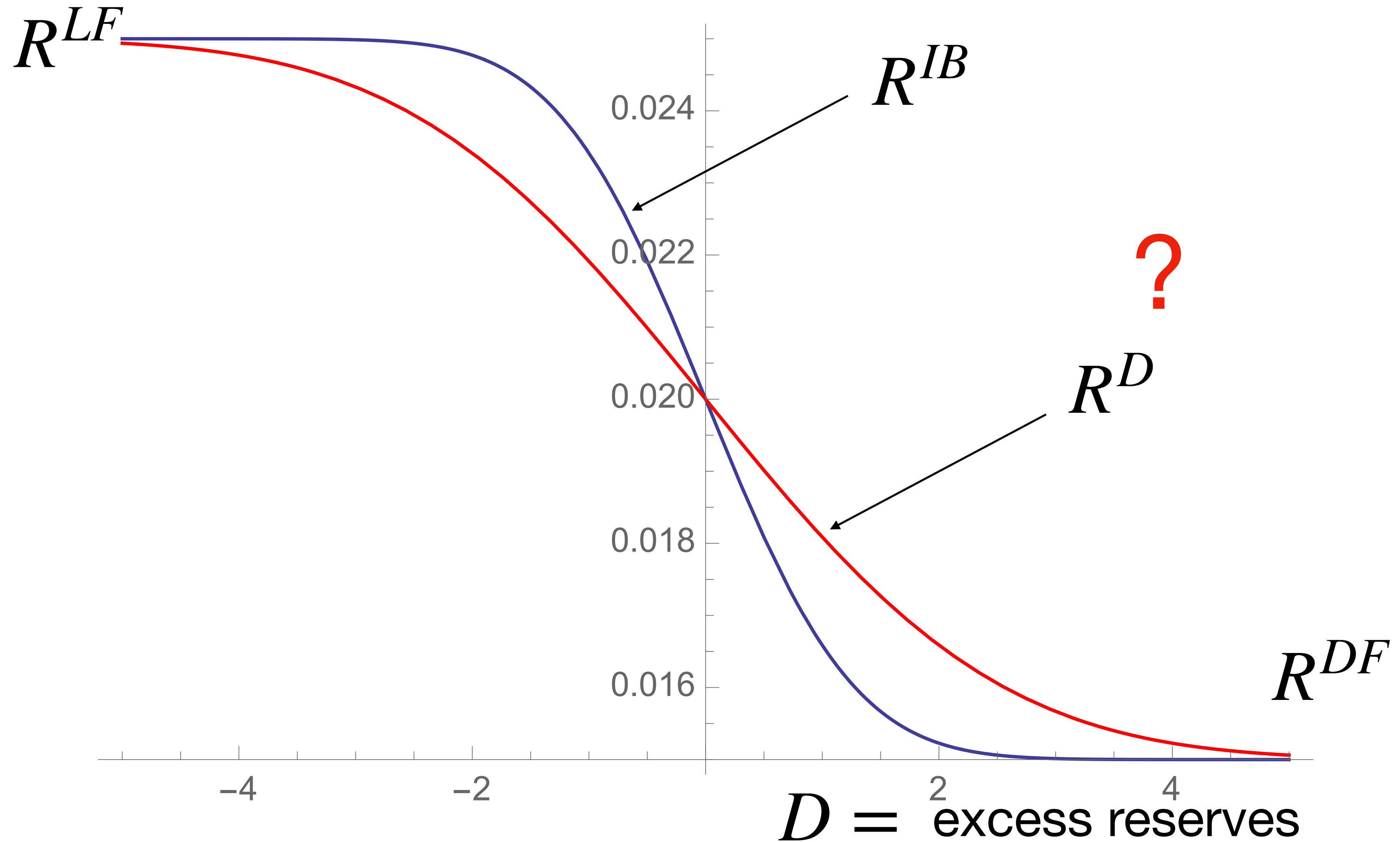
$$\begin{aligned} R^D &= P(\omega) \left(\mu^B(\theta) R^{IB}(\theta) + (1 - \mu^B(\theta)) R^{LF} \right) \\ &\quad + \\ &\quad P(\omega) \left(\mu^L(\theta) R^{IB}(\theta) + (1 - \mu^L(\theta)) R^{DF} \right) \\ &\quad + \\ &\quad P(\omega) E[\omega R^K] \end{aligned}$$

$$R^{IB}(\theta) = W(\theta) \text{Average}(R^{LF}, R^{DF})$$

A “modern” Poole (1968) model



A “modern” Poole (1968) model

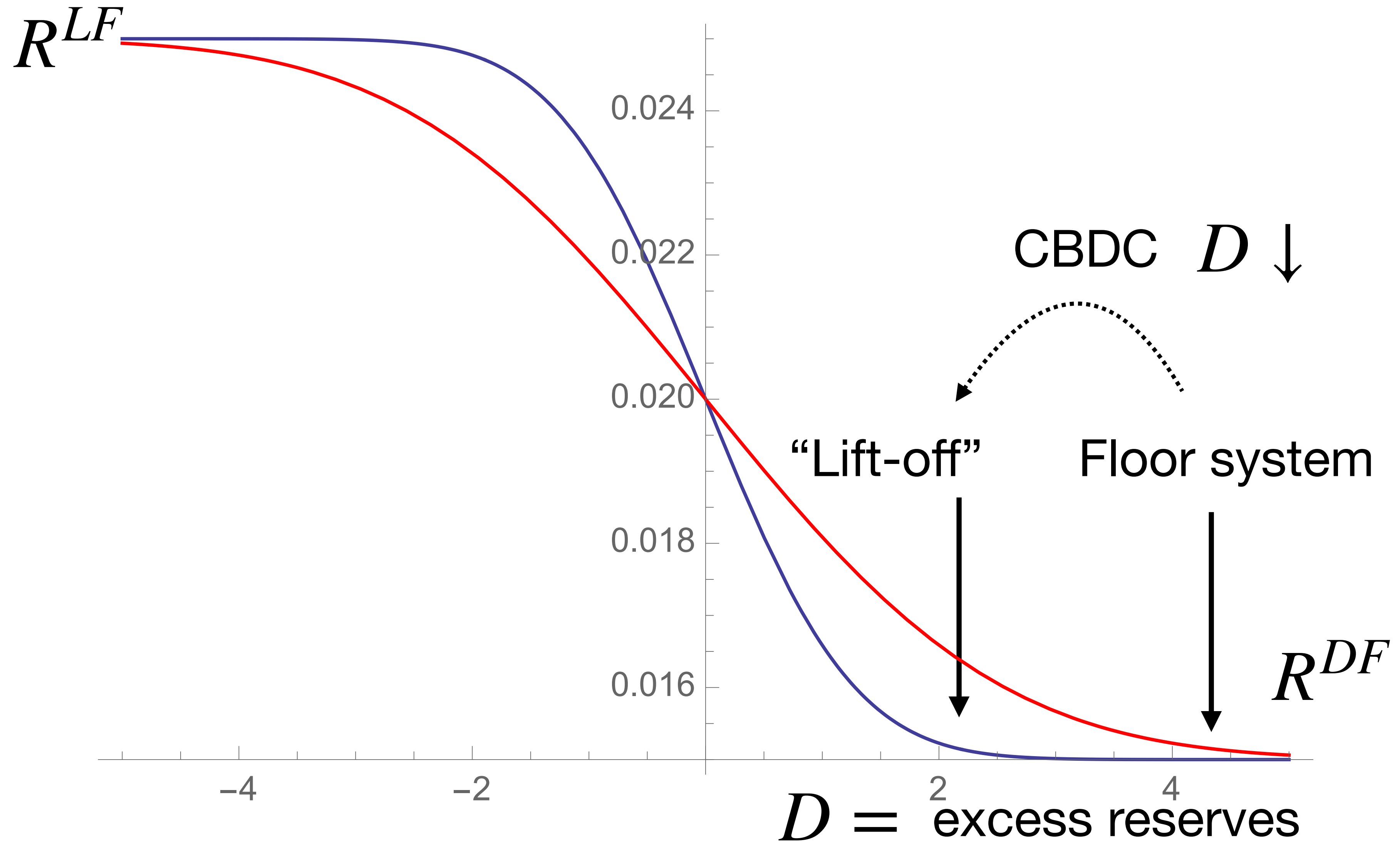


Demand for currency

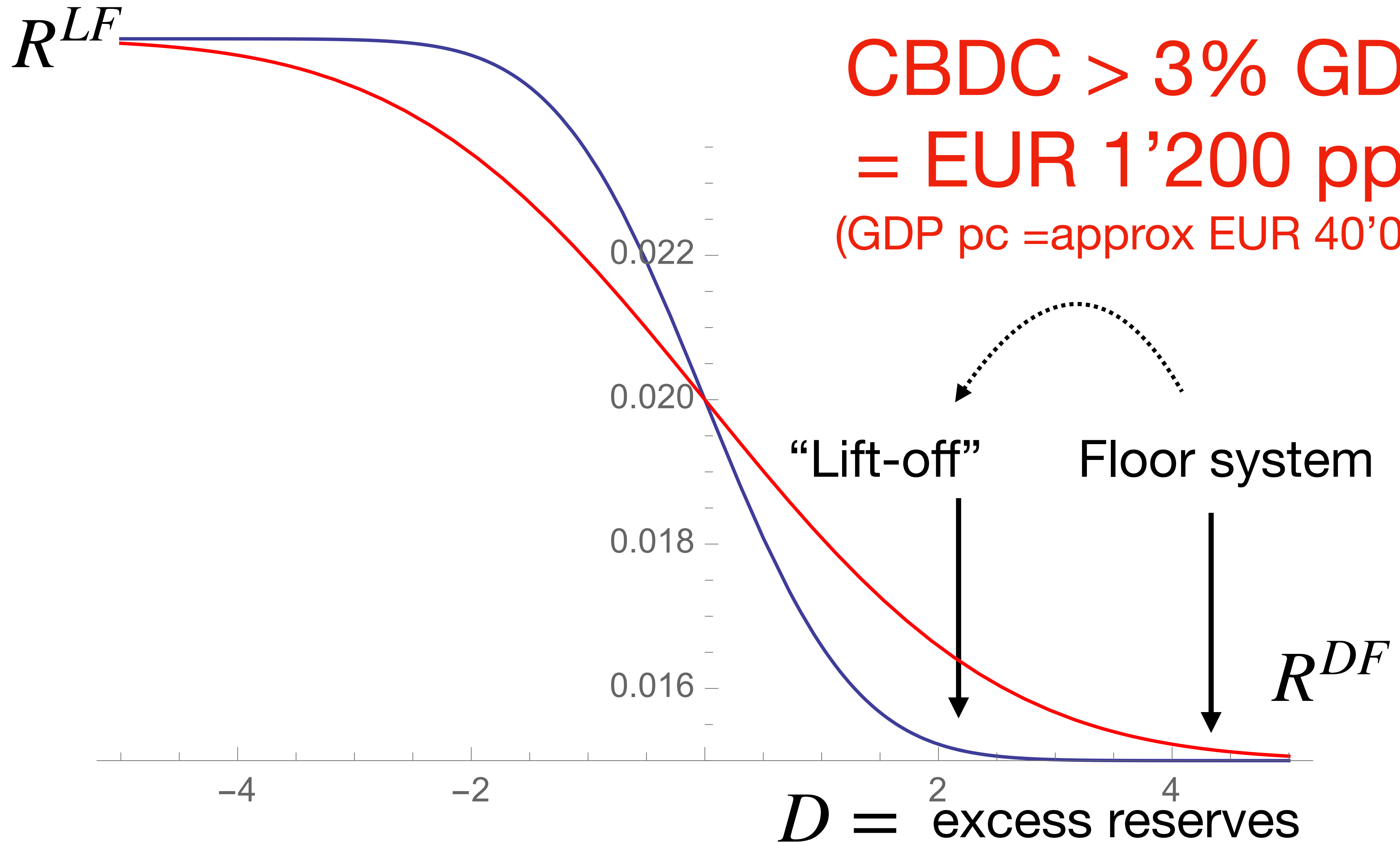
1. Agents have money in the utility:  $[D^\epsilon + \eta_M M^\epsilon + \eta_D (D^{DC})^\epsilon]^{1/\epsilon}$

2. As $\eta_D > 0 \rightarrow D^{DC} \uparrow$ while $D, M \downarrow$

A “modern” Poole (1968) model



A “modern” Poole (1968) model



1. Recall



2. Agents substitute remunerated D by unremunerated D^{DC} (when $\eta_D \uparrow$)

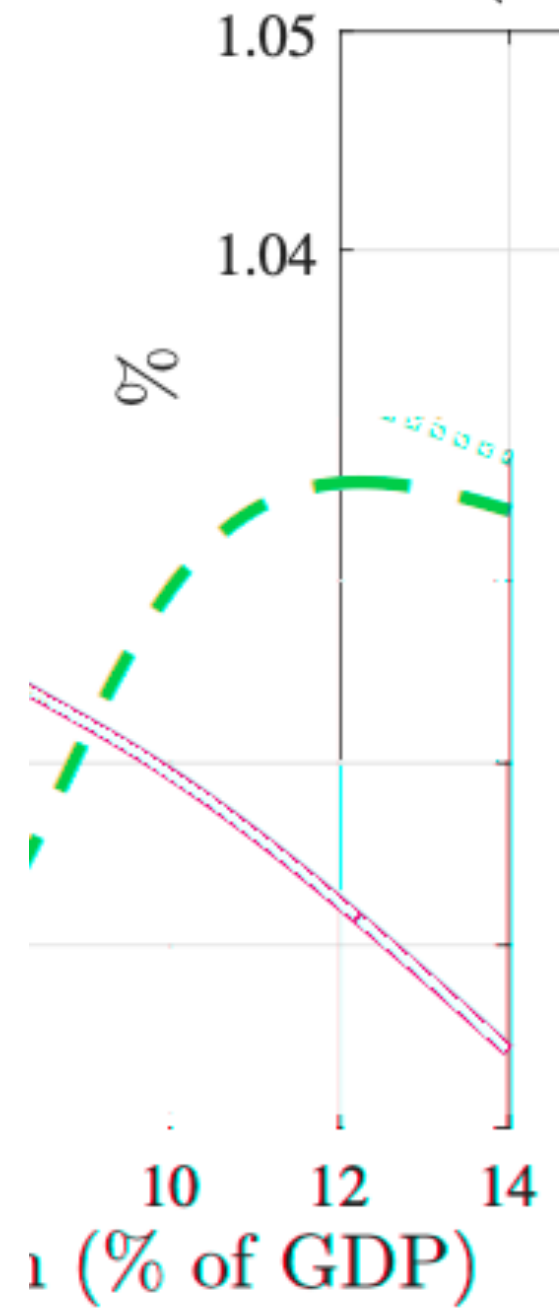
3. wealth $W \downarrow$

4. Aggregate constraint $K \downarrow$ since $K + \bar{B} = W + \text{bank equity}$ (and more expensive to borrow: bank equity \downarrow)

5. Macro effects?

Macro effects are tiny

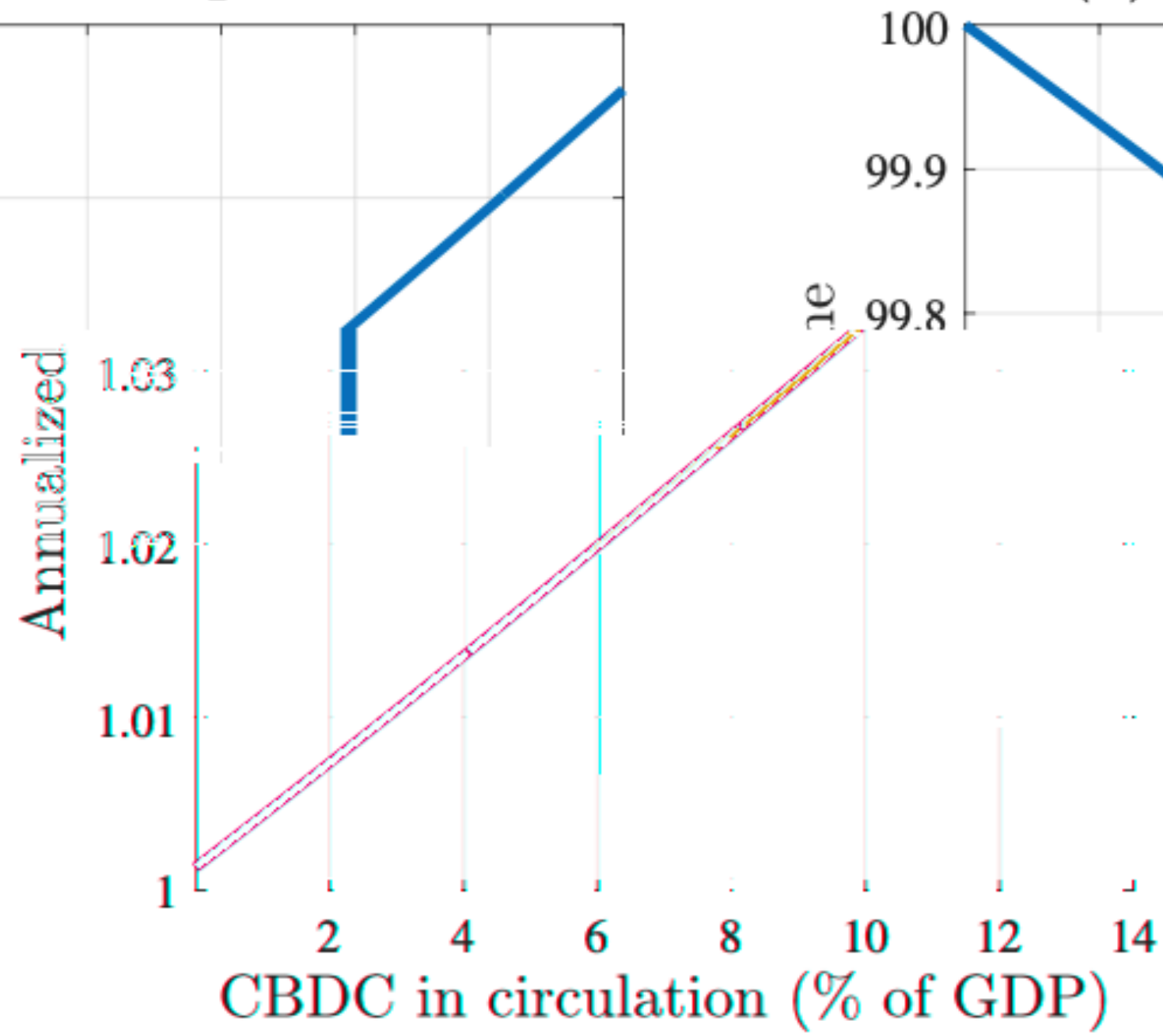
(d) Retail deposit rate



Annualized

CBDC in circulation (% of GDP)

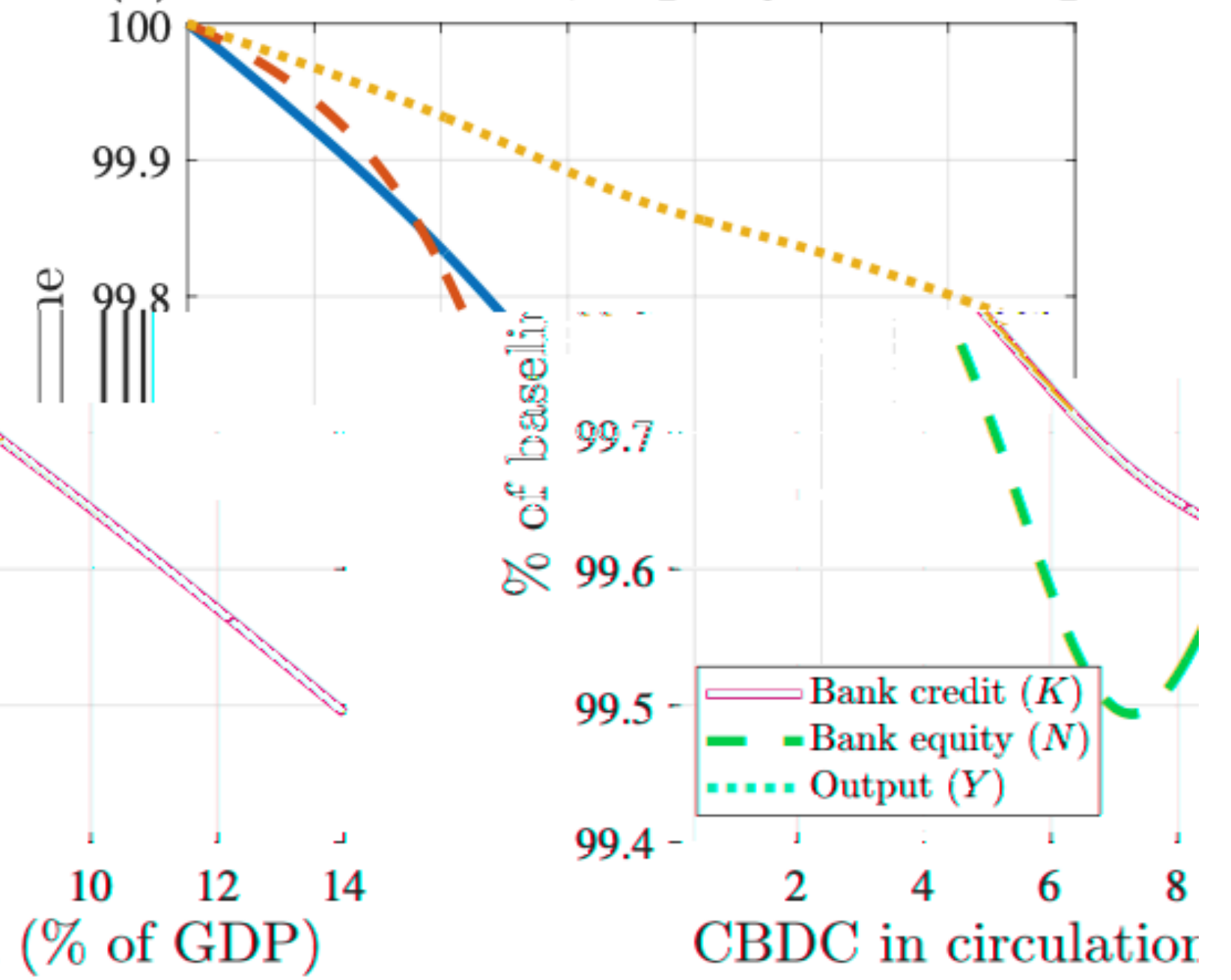
(e) Households' wealth



% of baseline

CBDC in circulation (% of GDP)

(f) Bank credit, equity and output

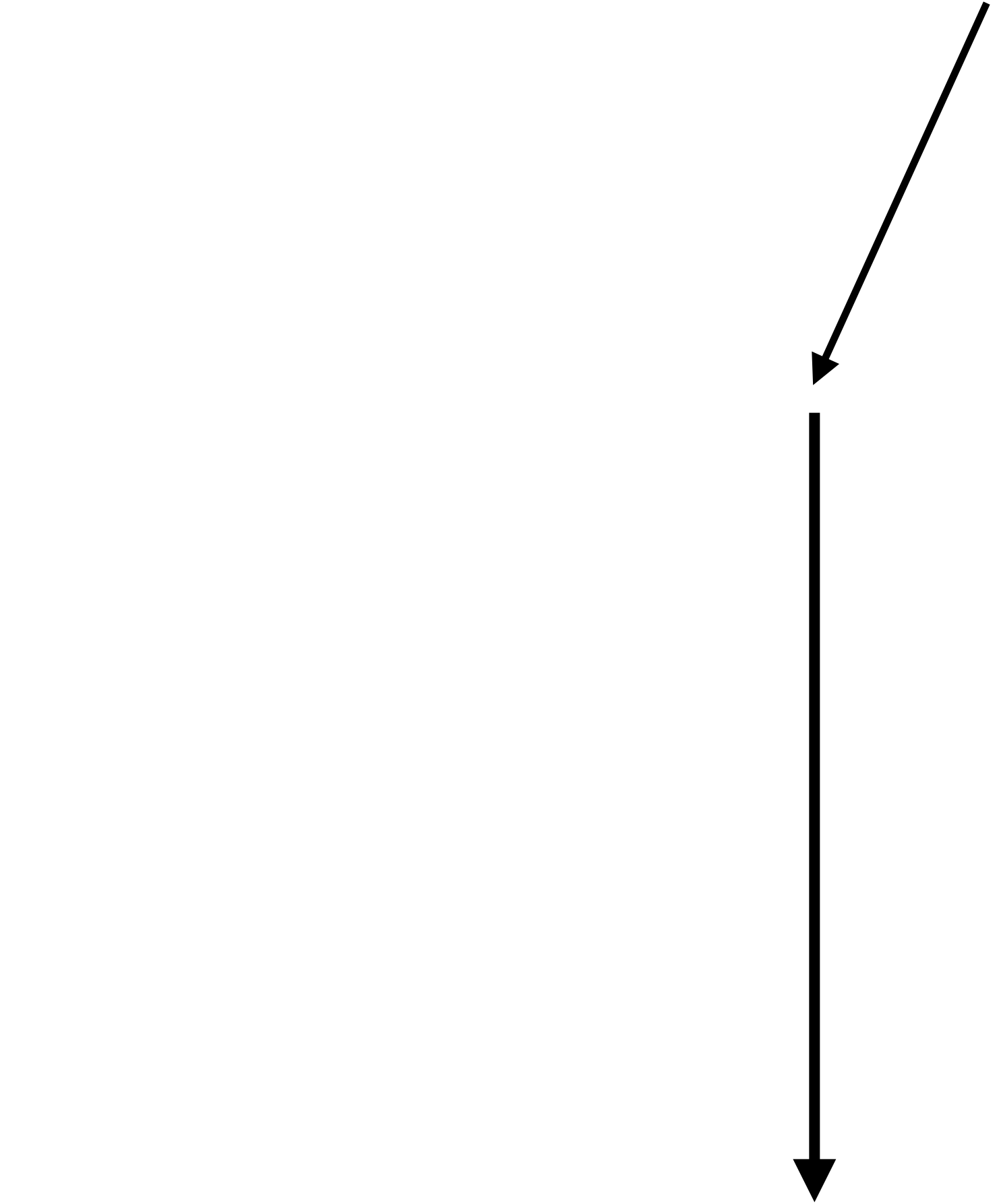


% of baseline

CBDC in circulation

Macro effects are tiny

CBDC limit=3'000
GDP drops by 0.15%



8%

Lift-off depends on matching frictions

1. Using same set-up, Arce, Nuno, Thaler, Thomas (JME, 2020) estimate matching parameter to $\lambda = 225$ (data: 1999-2017)
2. This paper estimates $\lambda = 76$ (data: 1999-2019 / more frictions). Does it matter?
3. Previous version of this paper with $\lambda = 178$, Liftoff for CBDC = 8% GDP
4. Robustness?

Comments 1

- Still a macro-ish contribution on CBDC (not much on the money market, although matters)
- Interbank market could be made simpler and still the macro results would obtain
- EU interbank market is notoriously segmented : how would that impact the results? (the lift off results are sensitive to the matching frictions)
- Lean CB-BS: How would results change (quantitatively) in corridor system?

Comments 2

- Introducing (unremunerated) CBDC is contractionary
- Because it negatively impacts the (purchasing) wealth of households
- Give an estimate for the CBDC remuneration rate that undoes that effect!
- Is there a remuneration rate that is expansionary? (Lamersdorf, Linzert, Monnet find there is)

Conclusion

- **Good news:**

- CBDC does not hamper the functioning of money markets, if anything will increase volume
- 3K limit may be just maintaining floor (more robustness)
- CBDC has tiny macro effects and it is not inflationary (more on this would be good!)
- Remunerating CBDC can undo the (tiny) negative effects of CBDC

- **Bad news:**

- The digital euro will not be remunerated

Thank you!

