

Discussion of:

Banks, Liquidity Insurance, and Interest on Reserves
in a Matching Model of Money

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Overview

- Interesting paper
 - introduces ideas from the banking literature into Lagos-Wright
- Aims to explain when banks will be used, and when cash / bank deposits will coexist
 - rich model; details are far from trivial
- Model has some policy prescriptions regarding interest on reserves
- I will organize my remarks around the title:
 - (i) Banks, (ii) Liquidity Insurance, and (iii) Interest on Reserves
in a Matching Model of Money

A simple model

- Two consumption goods (d, c)

- Preferences: $\theta_i u(d_i) + v(c_i)$

- Two assets: $m_i + k_i \leq \omega$

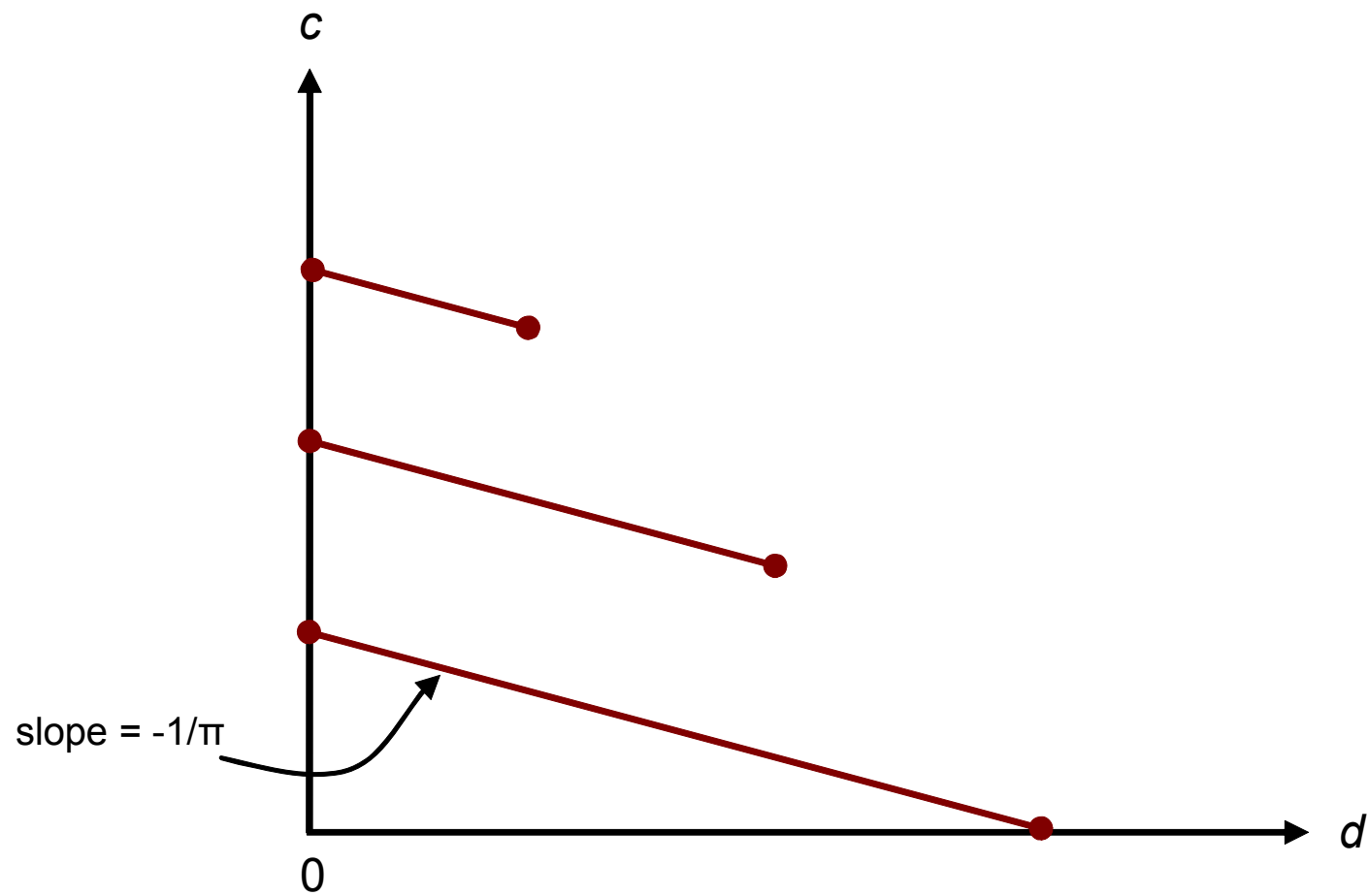
– capital yields ρ and money yields $\frac{1}{\pi}$ ($< \rho$) if not spent

– good d can only be purchased with money

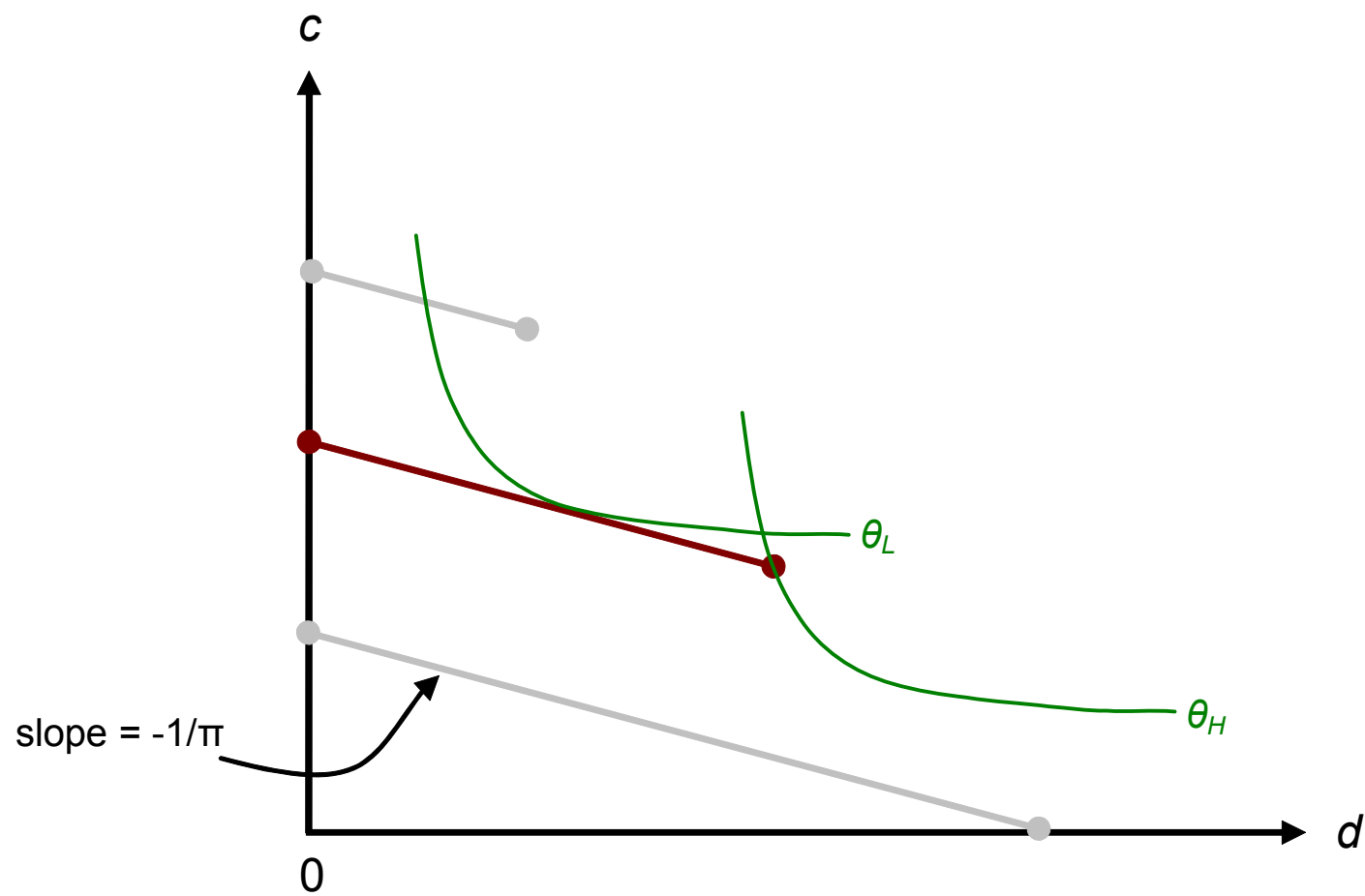
- In autarky: $c_i = \rho k_i + \frac{1}{\pi} (m_i - d_i)$

- Uncertainty: (m_i, k_i) chosen before θ_i is known

Choice sets under autarky



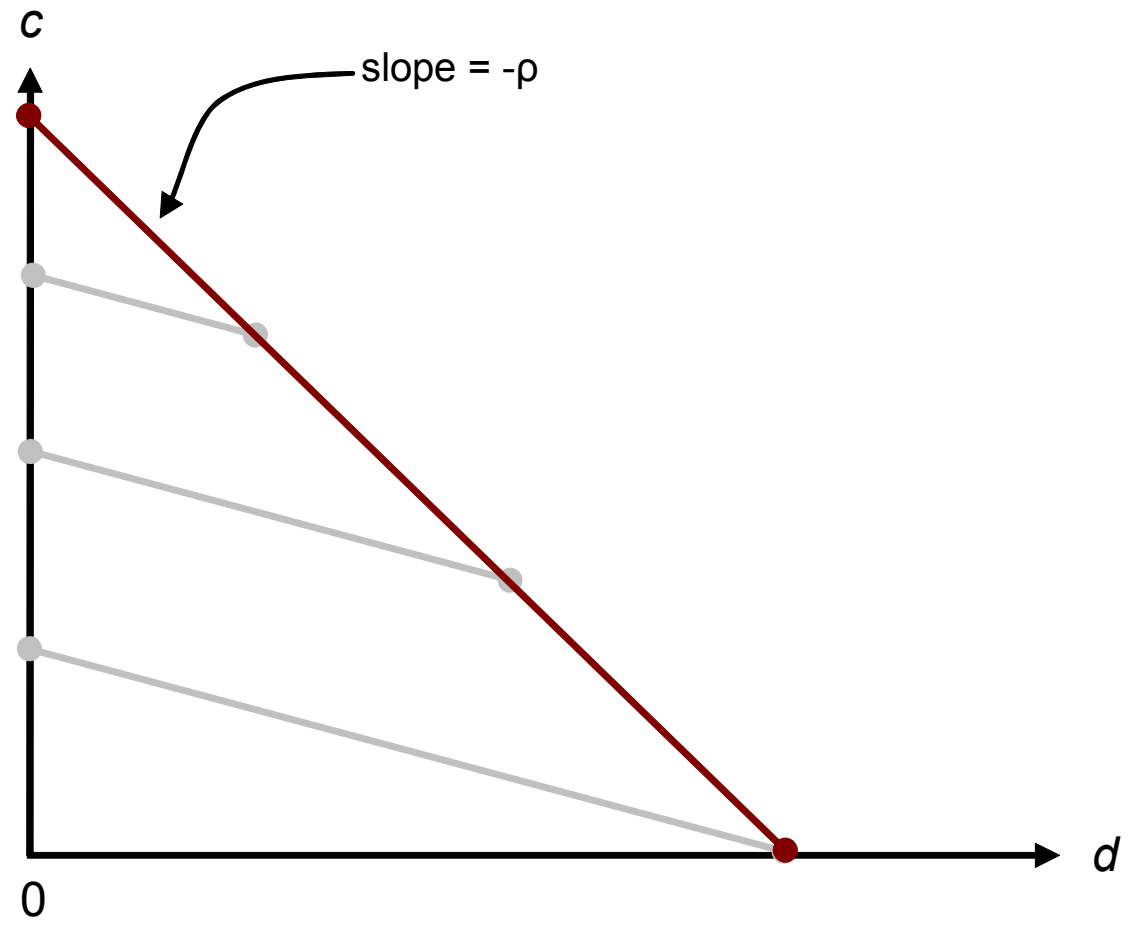
Choice sets under autarky



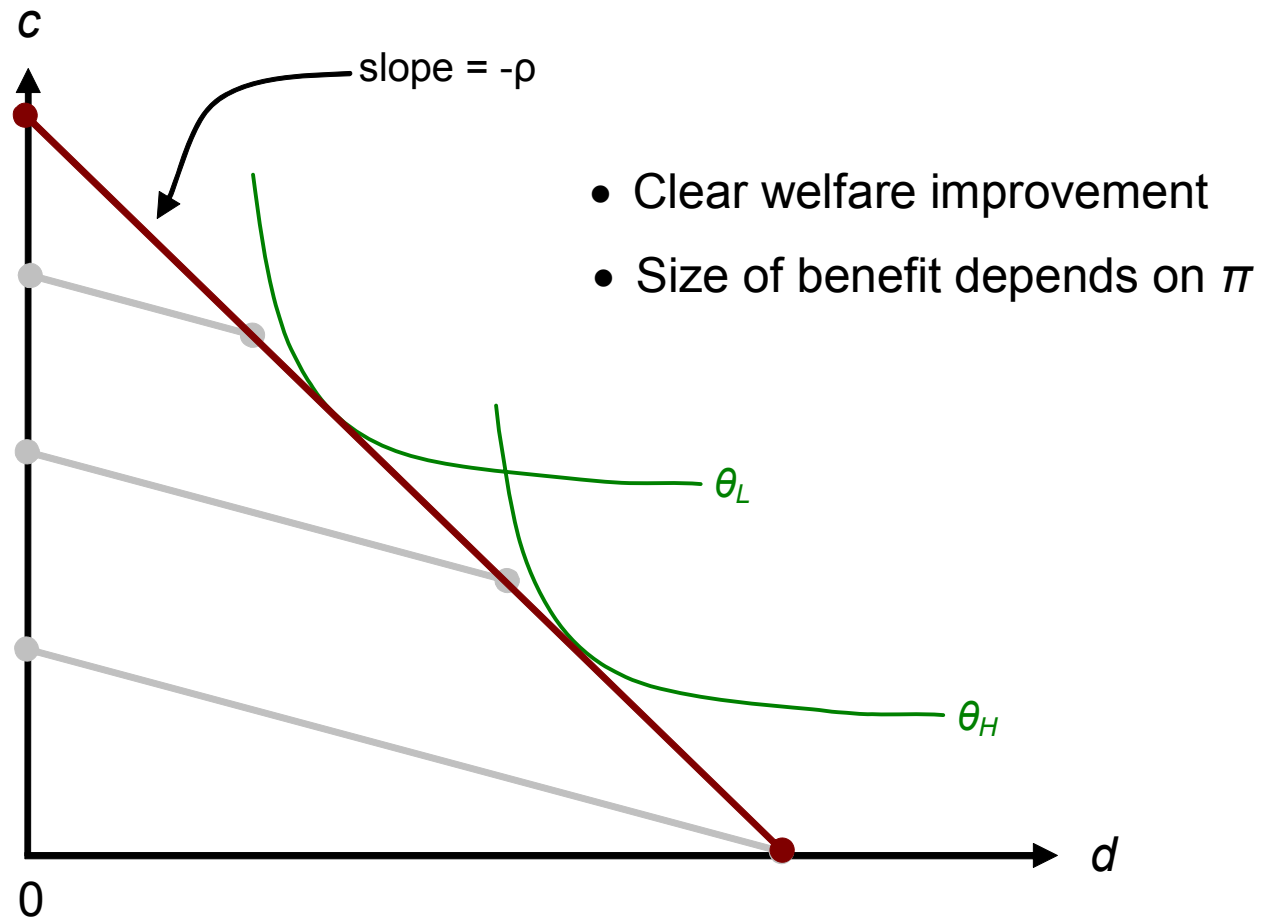
(i) Banks

- Suppose agents pool endowments in a “bank”
- One possible policy: bank offers fixed returns
 - 1 on early withdrawals; ρ on late withdrawals
- Bank can anticipate withdrawal demand (no aggregate uncertainty)
 - \Rightarrow these returns are always feasible
- In equilibrium:
 - no unused money balances; high θ_i types not “overly” constrained
 - \Rightarrow allocation is same as if agents could observe θ_i before choosing portfolio

Choice set with banking



Choice set with banking



- Paper assumes accessing the bank is costly
 - ⇒ only use bank if benefit is large enough
 - this happens when π is large (see figure)
- In some cases, efficiency requires a mix of autarky and banking
 - interesting; realistic
- This is the role of banks studied in the paper
 - allocating money balances to those who need them

(ii) Liquidity insurance

- Banks can do other useful things as well
- Suppose only two types: $\theta_H > \theta_L$
- Ask: what is the (full-information) first best allocation?

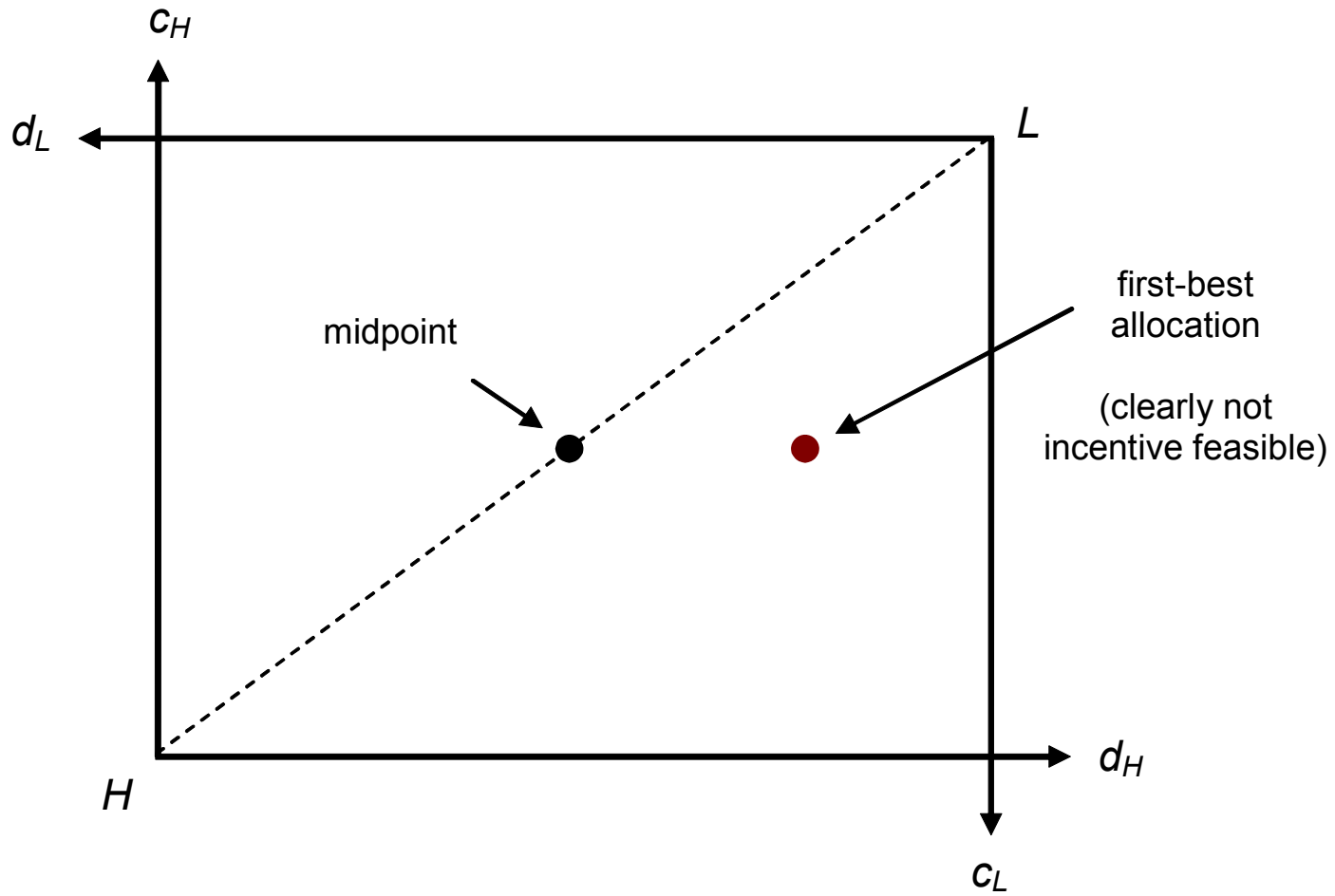
$$\max [\theta_H u(d_H) + v(c_H)] + [\theta_L u(d_L) + v(c_L)]$$

subject to feasibility constraints

- Result:

$$d_H > d_L \text{ and } c_H = c_L$$

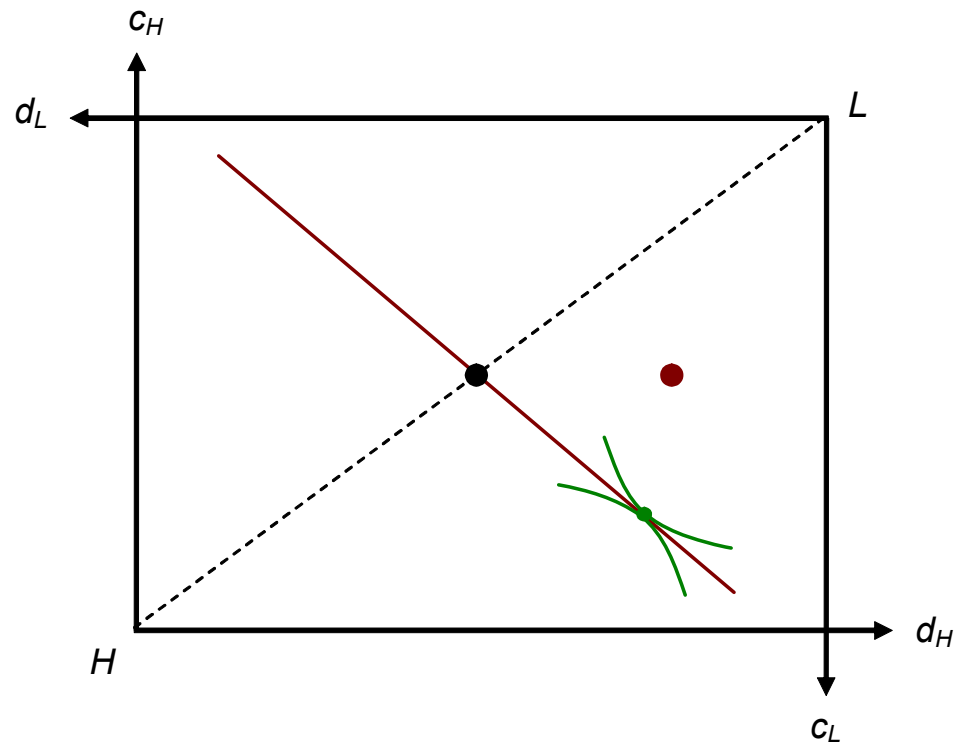
Edgeworth box



Note: dimensions of box determined are by bank's portfolio choice

- What is incentive feasible in this setting?

– paper imposes $c_i = \rho(\omega - d_i)$

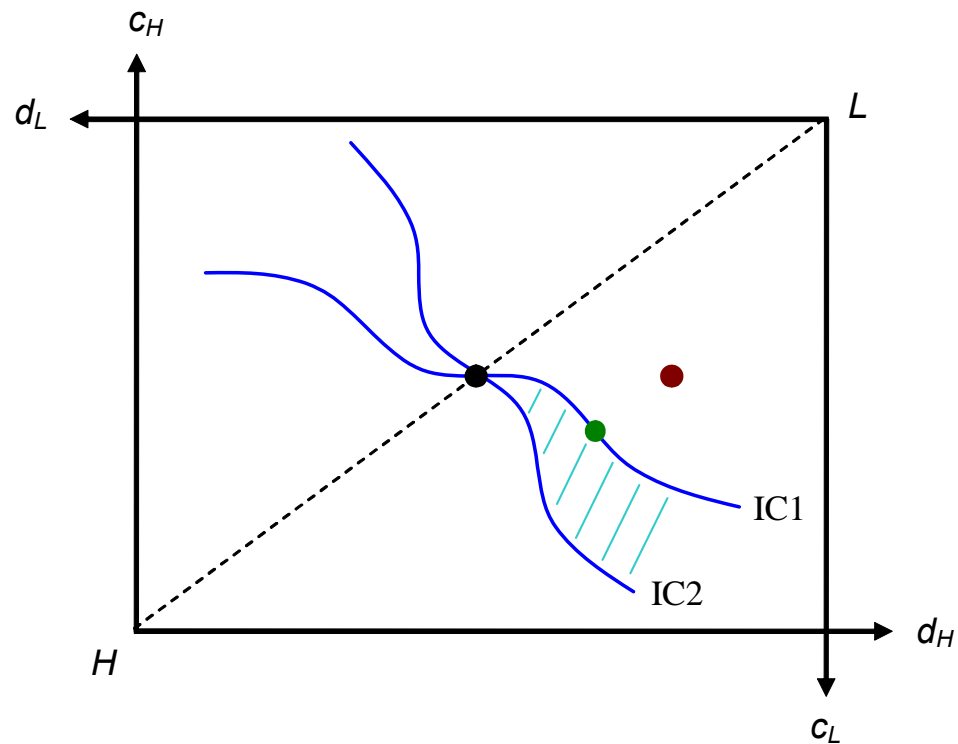


- Implement with simple demand deposit contracts

- More generally:

$$\theta_L u(c_L) + v(c_L) \geq \theta_L u(c_H) + v(c_H) \quad (\text{IC1})$$

$$\theta_H u(c_H) + v(c_H) \geq \theta_H u(c_L) + v(c_L) \quad (\text{IC2})$$



- Cannot be implemented using a simple demand deposit contract

- Cross-subsidizing types is efficient and incentive feasible
 - Diamond and Dybvig (1983), Jacklin and Bhattacharya (1988)
- Diamond and Dybvig call this activity “liquidity insurance”
 - banks insure agents against the θ_H shock
- Useful to distinguish:
 - (i) allocating cash to those who need it
 - (ii) insuring agents against type shocks
- Both are a type of “liquidity insurance”
- In this paper, banks do (i) but not (ii)

(iii) Interest on Reserves

- Institutional detail: banks reserves are held in two forms
 - (a) currency in vault/ATMs
 - (b) deposits at Federal Reserve
 - Fed has started paying interest on (b)
 - Reserves in this model resemble (a)
- ⇒ Policy prescription of the model: central bank should pay interest on vault cash

But...

- In this model (as in many others) the Friedman rule fixes everything
 - one implementation: pay interest on currency
 - impractical; here: paying interest on *some* currency is helpful

General point:

- Paper shows paying interest on reserves improves welfare *assuming* monetary policy is suboptimal
 - common approach, but questionable
- If FR is not optimal for some reason...
 - that same reason may make interest on reserves undesirable

Conclusions

- Interesting paper
- Part of an important research program
 - we need better models of money & banking to inform policy decisions
 - interest on reserves question is a good illustration
- Banking models can be tricky
 - idiosyncratic risk makes banks useful in more than one way
- I hope the authors continue this line of work (and others join them!)