

Transparency vs Privacy in Credit Markets

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1

1. Motivation

- With information technologies, it is getting easier to keep track of credit records.
- Some countries use detailed data in lending (Ex. China's "sesame credit" uses very detailed personal information).
- Other countries strengthen personal data protection (Ex. India enacted "Digital Personal Data Protection Act" in 2023).

■ Q. Is it good for society to use more information in lending?

2

2. Model

- The model is an infinite horizon economy. An infinitely-lived **borrower** meets a one-period-lived **lender** every period.
- Each lender chooses whether to lend or not. If a lender lends, the borrower either **succeeds** or **fails**.
- The borrower is either **good** or **bad**. The type is hidden and is drawn at the beginning of the economy. Only good borrower can succeed with a positive probability.

3

- If the borrower **succeeds**, he receives 1 unit of a perishable consumption good and repays an exogenous amount.
- If the borrower **fails**, he has nothing to repay. So, to the borrower, borrowing is riskless.
- We can relax these assumptions:
 - We can introduce a cost to borrower from failing. Our results hold as long as borrower surplus is positive.
 - We can endogenize repayment via ex-post bargaining.

4

3. Main Result

- Compare 2 information structures: **Transparency** vs **Privacy**. Under Transparency, all the lenders know all the past outcomes (success or failure). Under Privacy, they do not.

■ Our Main Result is the following:

- (1) Under **Transparency**, lending stops too early.
- (2) Under **Privacy**, lending continues too long.
- (3) A higher social welfare is achieved under **Privacy**.

5

4. Intuition

(1) Under **Transparency**, lending stops too early. Why?

- If a lender lends today, future lenders will know today's outcome. But, each lender is one-period-lived. They do not internalize the future value of today's information.

(2) Under **Privacy**, lending continues too long. Why?

- With no information about the past outcomes, lenders cannot update beliefs (see Figure 1 below).

6

(3) A higher social welfare is achieved under **Privacy**. Why?

- Suppose at the stopping time of Transparency, you have two options: **stop** immediately or **continue** forever thereafter.
- The former allocation is the same as **Transparency**, and the latter as **Privacy**. If you compare them, the continuation value from the latter (**Privacy**) is greater. Why?
- From the latter allocation, the lender gets **0** in expectation (because she is indifferent between lending & not) and the borrower gets **> 0** (because borrowing is riskless to him).

7

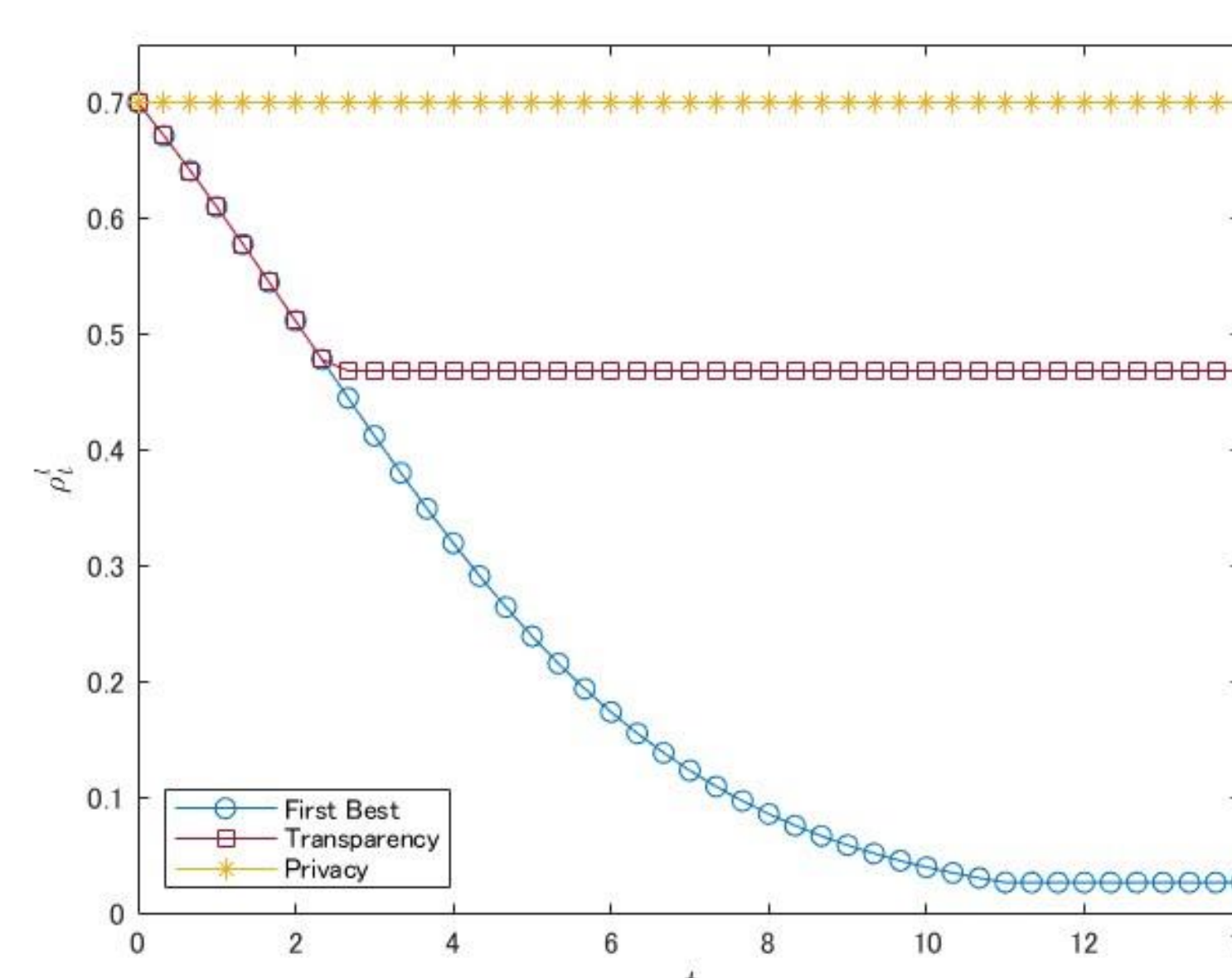


Figure 1. This shows how the belief evolves over time if the borrower keeps failing. (If he succeeds, the belief jumps up to 1).

- **Transparency** (□): Belief is updated & lending stops too early.
- **Privacy** (*): Lending continues but belief is not updated.

8