

# Discussion: "Solvency Regulation and Credit Risk Transfer"

**Cerasi and Rochet**

Workshop on Risk Transfer Mechanisms and Financial Stability  
Basel, May 30, 2008

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# Idea of paper

- ▶ Show the impact of credit risk transfer activities on bank regulation
  - Credit default swaps and loan sales
  - CDSs and loan sales are complements, not substitutes (loan sales used for funding, not for risk reduction)
- ▶ Environment: capital regulation aligns bank incentives
  - Reduce ex ante PDs of loans, rather than protecting depositors from loan defaults
- ▶ Very interesting paper, but not easy to read
  - Special role of CDSs interesting
  - Special role of loan sales less convincing



# Building blocks of model

## Static model

- ▶ Period 0: Deposits raised and Loans extended. (Capital is “inside capital” and its level is exogenous)

Period 1: Loans pay:

If monitored: R with pr.  $p$  ; 0 otherwise

If not monitored: R with pr.  $p - \Delta p$  ; 0 otherwise

- ▶  $L_0 + \pi = E_0 + D_0$

Bank balance sheet

$$E_0 = L_0 - pD_0$$

Fair deposit insurance premium:  $\pi = (1-p)D$

$$D_0 = (R - B/\Delta p) L_0$$

Incentive compatibility: bank receives  $(B/\Delta p)L_0$ ;  
 $\Rightarrow$  maximum pledgeable income to deposits

$$E_0 = \{1 - p (R - B/\Delta p)\}L_0 = k_s L_0 \quad \text{Bank capital aligns incentives}$$



# Building blocks of model

## Static model

- ▶ Period 0: Deposits raised and Loans extended. (Capital is “inside capital” and level is exogenous)

Period 1: Loans pay:

If monitored:            R with probability  $p$ ;            0 otherwise

If not monitored:        R with pr.  $(1 - p)$ ;            0 otherwise

- ▶  $L_0 + \pi = E_0 + D_0$

$$E_0 = L_0 - pD_0$$

Fair deposit insurance premium

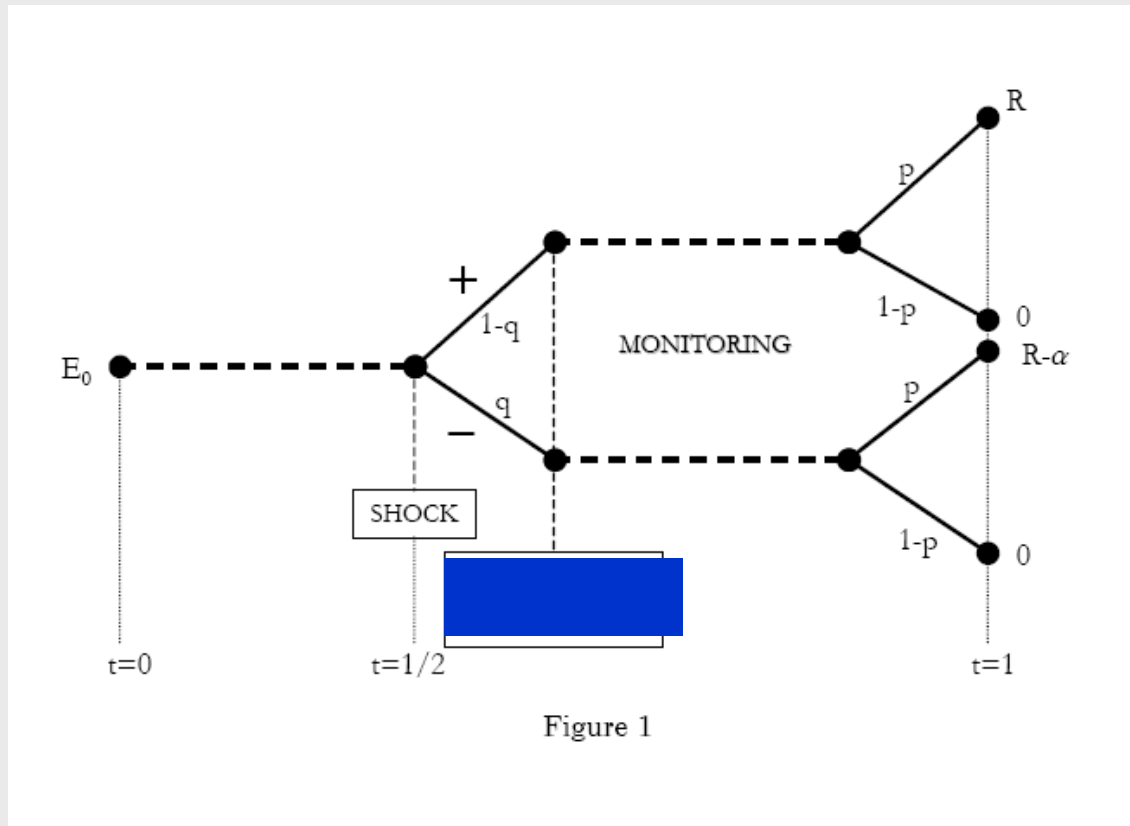
$$D_0 = (R - B/\Delta p) L_0$$

Maximum pledgeable income to deposits

$$E_0 = k_s L_0$$



# Dynamic model with loan return shock only



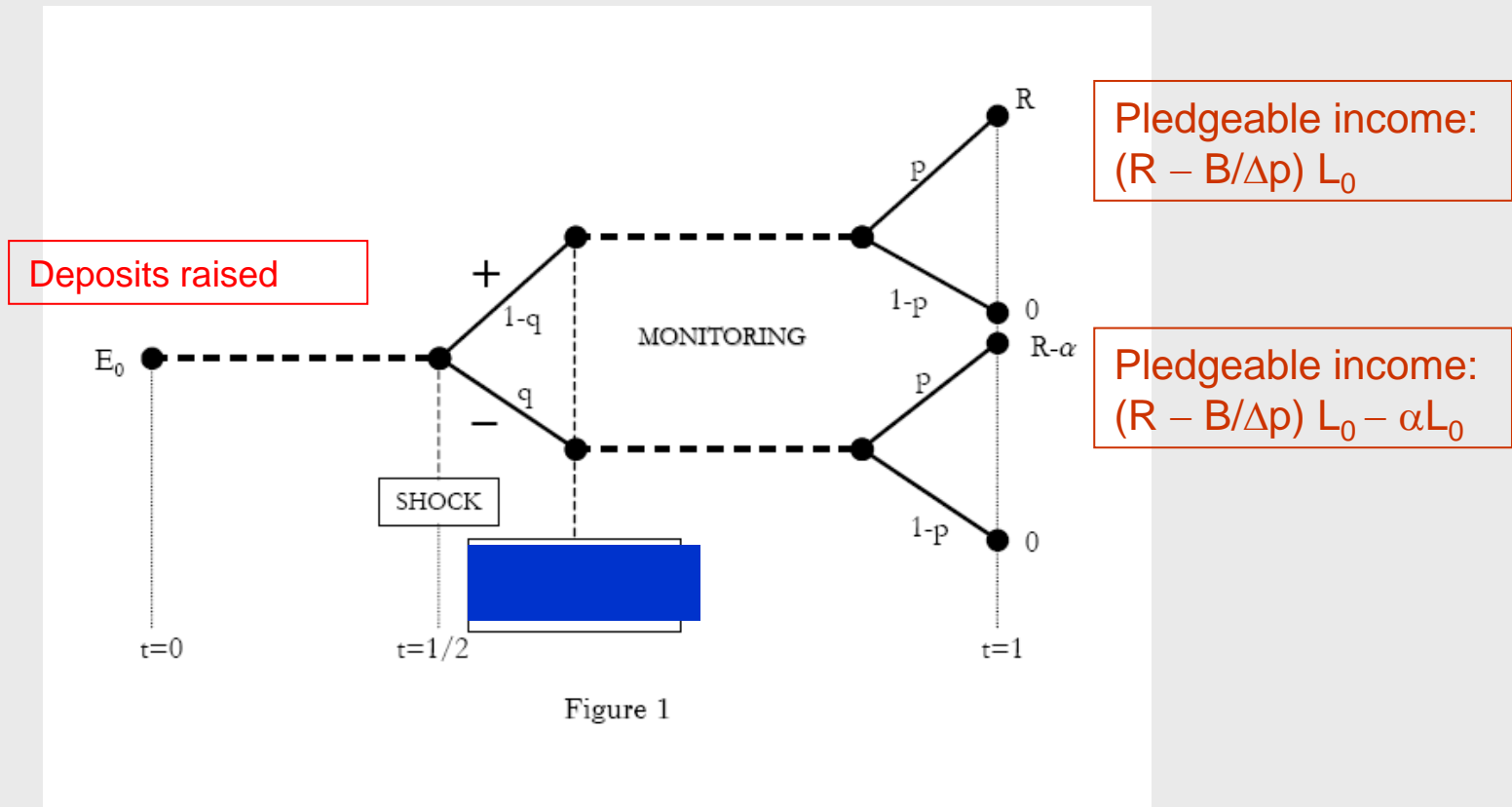
More motivation needed for nature of shock

No change in loan PDs

All loan returns reduced by fixed amount in State –



# Dynamic model with loan return shock only



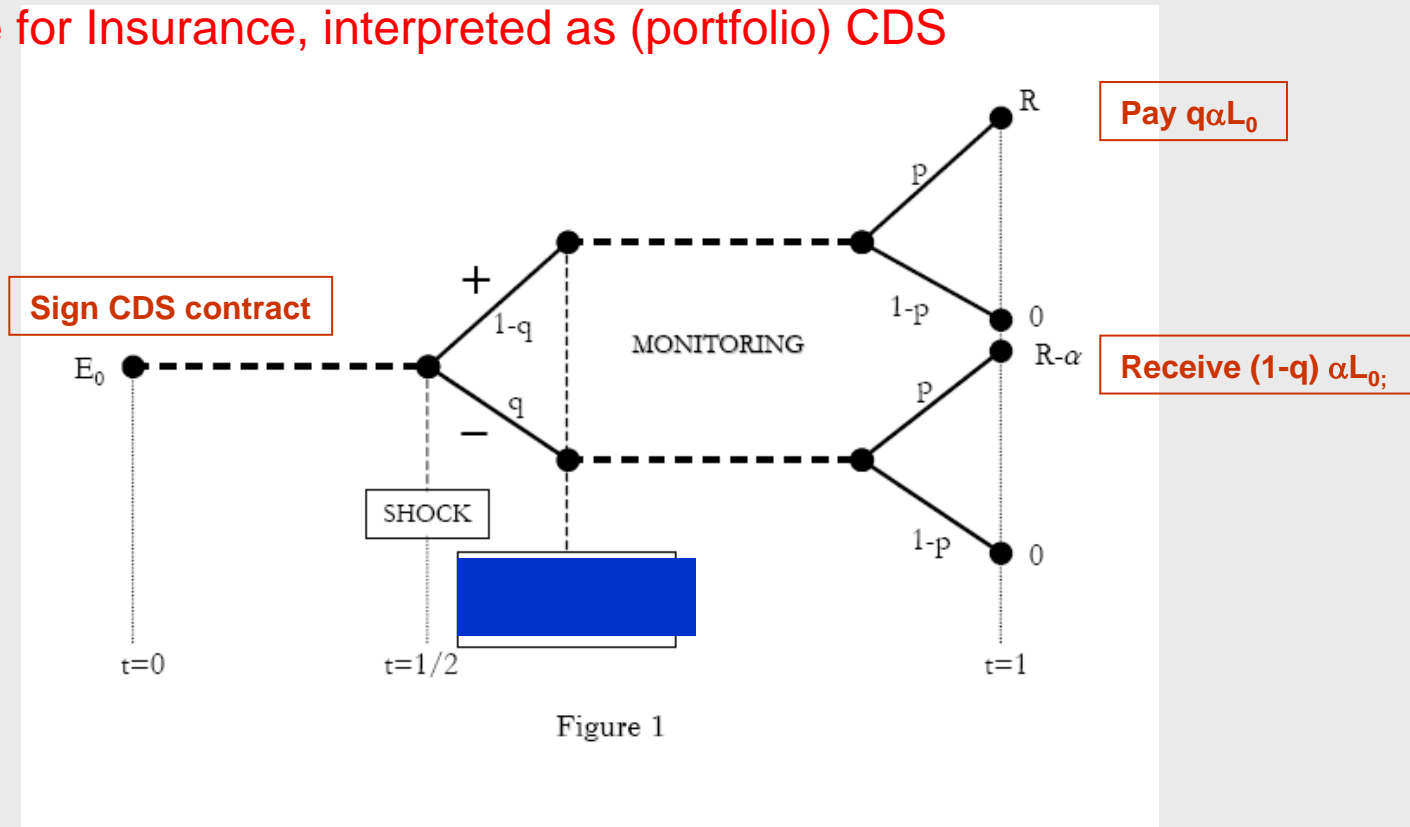
$$D_0 = \min \{ (R - B/\Delta p) L_0; (R - B/\Delta p) L_0 - \alpha L_0 \};$$

$$k = k_s + p\alpha$$



# Dynamic model with loan return shock only

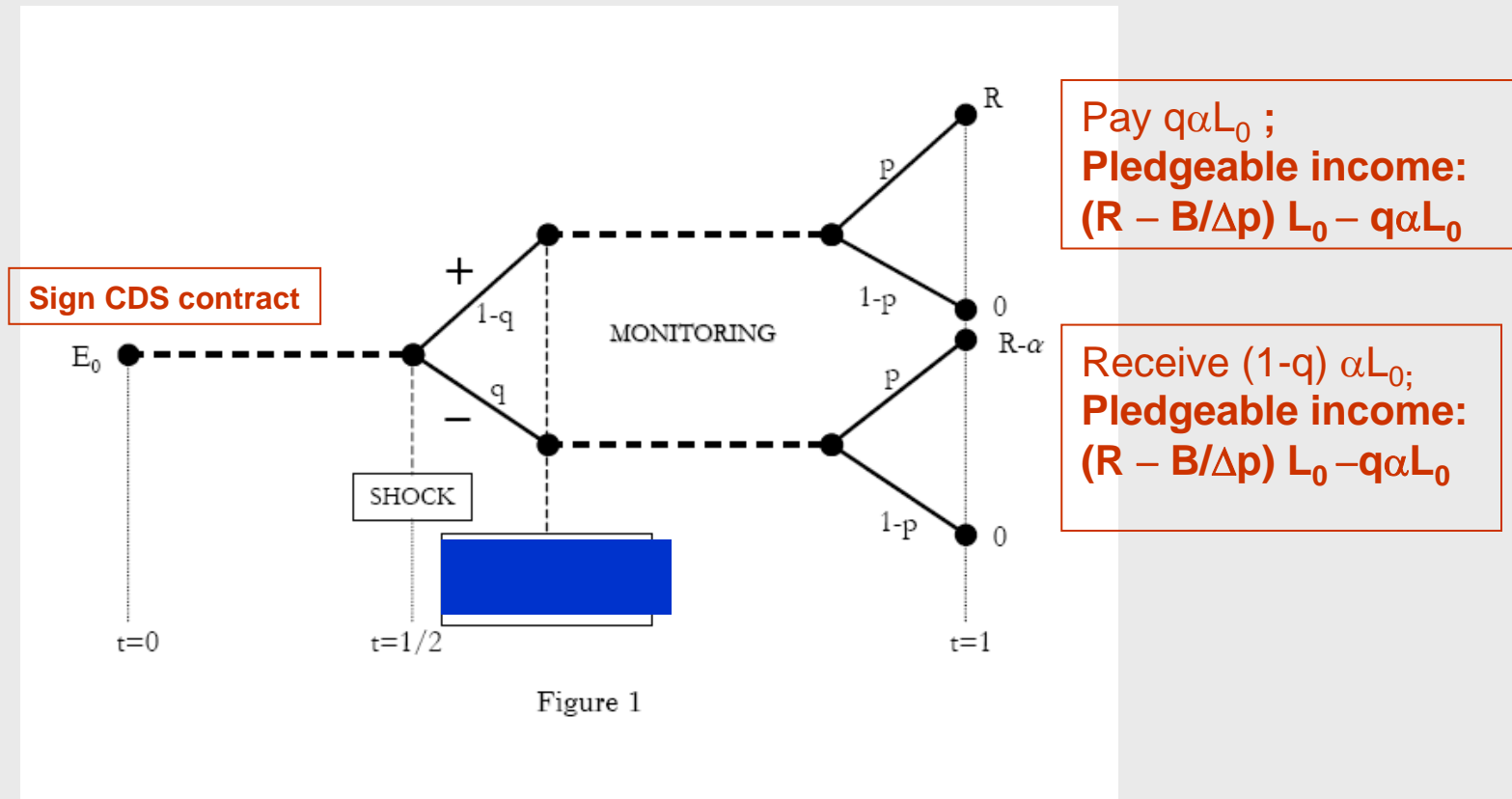
Scope for Insurance, interpreted as (portfolio) CDS



Not a traditional CDS; payment not conditioned on default



# Dynamic model with loan return shock only



$$D_0 = (R - B/\Delta p) L_0 - q\alpha L_0 ; \quad \Rightarrow k = k_s + qp\alpha$$





# Dynamic model with loan return shock only

Could change timing of CDS payments

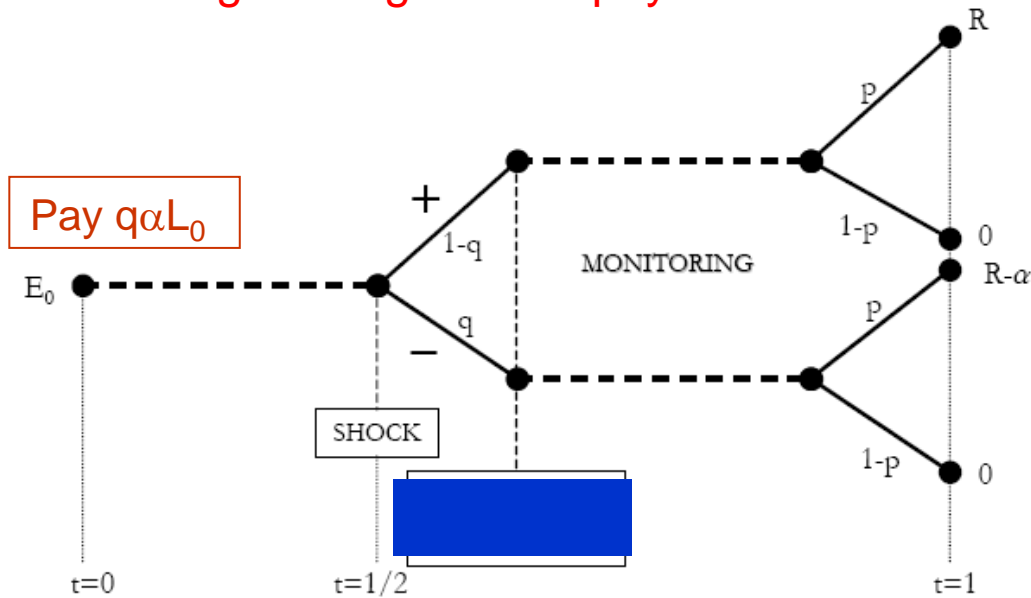


Figure 1



# Dynamic model with no loan shock but new lending opportunity

- ▶ Suppose at period  $\frac{1}{2}$  new lending opportunity arises: bank can extend new loans up to  $\beta L_0$
- ▶ Suppose bank issues bond to raise the funds. Will need to promise bondholders  $(\beta/p)L_0$  in order for them to be willing to supply finance
- ▶ Pledgeable income to deposits:

$$D_0 = (R - B/\Delta p)(1 + \beta) L_0 - (\beta/p)L_0$$

$$k = k_s(1 + \beta)$$



# Dynamic model with loan return shock and new lending opportunity

Optimal policy  $\Rightarrow$  New lending only in State +

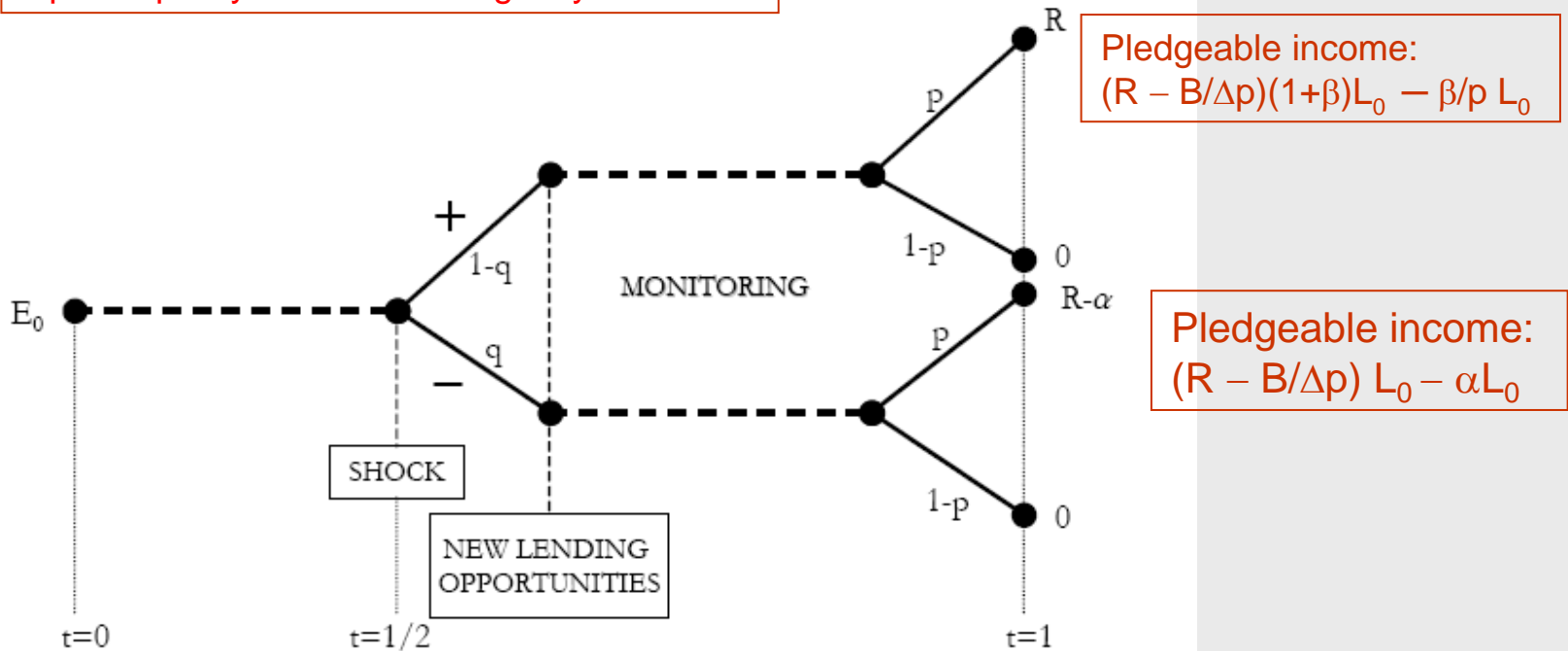


Figure 1

Scope for insurance: Pay  $q \cdot$  (Difference in pledgeable income in States + and -)  
 Receive  $(1-q) \cdot$  (Difference in pledgeable income in States + and -)



# Dynamic model with loan return shock and new lending opportunity

Optimal policy  $\Rightarrow$  New lending only in State +

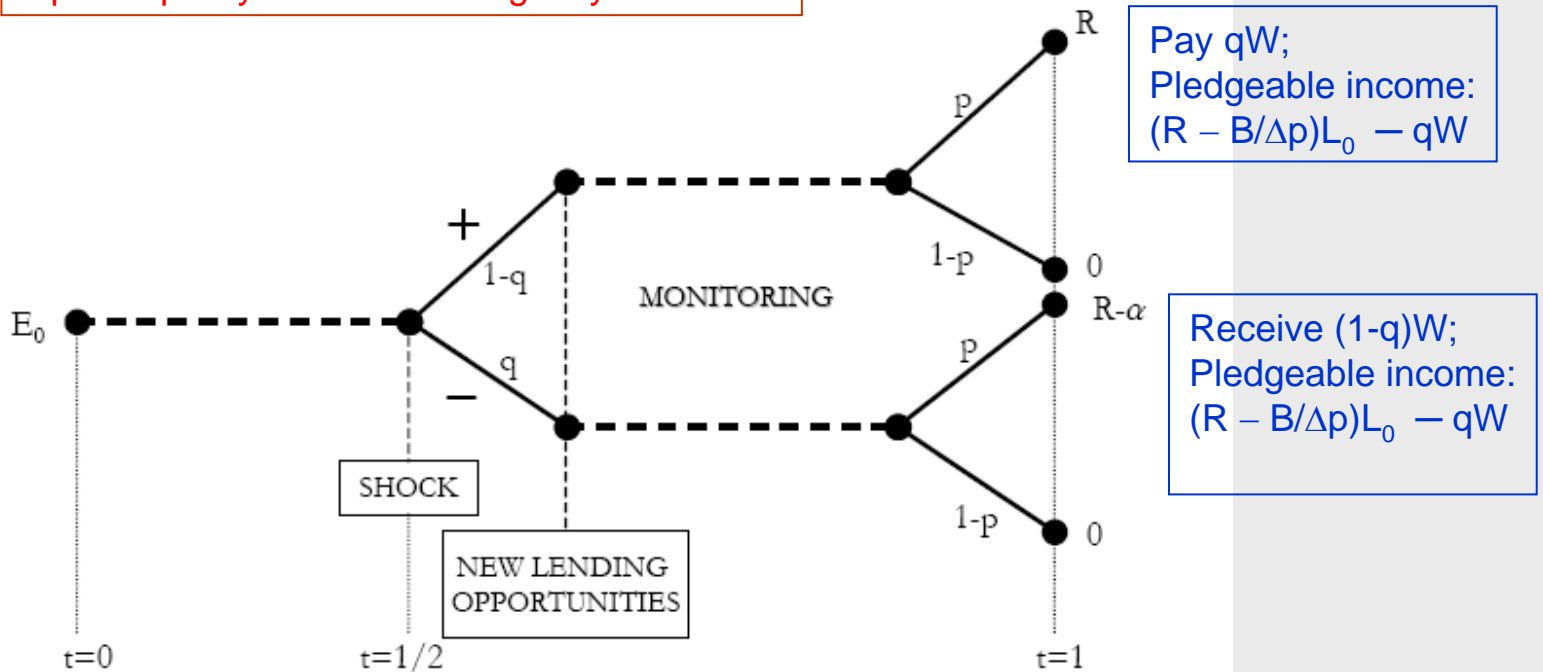


Figure 1

## Implementation of optimal policy (Prop. 3)

▶  $k = k_s (1 + \beta) + pqW,$

where  $W = \text{Pledgeable income in State+} - \text{Pledgeable income in State-}$

- ▶ CDSs used to transfer income across states + and –
- Bank may buy or sell protection against shock
  - CDSs provide state-contingent adjustments to regulatory K

- ▶ In order to induce bank only to extend new loans in State +, need state-contingent capital requirements:

State +:  $k = k_s (1 + \beta)$

State – :  $k = k_s + p\alpha$

- ▶ New lending assumed to be via loan sales of a fraction  $y$  of original portfolio  $L_0$ , where  $yL_0 > \beta L_0$
- Price paid for an existing loan is less than 1



# Loan sales

- ▶ Are effectively asset-backed securities. Represent a securitization of the original portfolio where outside investors own a fraction of the portfolio
  - Amount of money raised from investors equals  $\beta L_0$
  - Securitization of new loans ( $\beta L_0$ ) would also work
- ▶ The terms of the securitization are not clear. What stays on bank's balance sheet? What is the impact on capital requirements?
  - Potential inconsistency in interpreting  $y$  as fraction of loans to outside investors when their payment is less than  $Ry$ ?
  - Unless bank is considered to be the servicer of the loans, with fee equal to  $(B/\Delta p) \cdot L_0$
- ▶ Wouldn't having bank issue debt in amount of  $\beta L_0$  give same results?



# Conclusion

- ▶ A paper with interesting ideas
- ▶ Exposition could be improved
- ▶ I look forward to seeing the next version!

