

# PRECEDENT TERMS

BY BOCCOLA AND HOFFMAN

Giorgia Piacentino  
USC & CEPR & ECGI & NBER

# MOTIVATION

Some contract terms puzzling because:

- Do not seem to affect prices

- Vary across otherwise similar contracts

- Are negotiated intensely

These terms don't seem to fit into existing categories:

- “Best possible” (priced efficiently)

- Boilerplate (fixed)

# THIS PAPER

Define category between “best possible” & boilerplate: precedent terms

Argue why they arise

Bring survey evidence to bear on the category

Argue cannot be explained by existing theories

## MODEL À LA HART-MOORE 04

# MODEL À LA HART–MOORE 04

Two parties: Seller (S) and Buyer (B)

Think: S is issuer of loan and B is lender

B chooses investment  $i$  at cost  $\frac{ki^2}{2}$

Outcome is a pair  $(p_i, \tau_i)$ ,  $p_i$  is transfer and  $\tau_i \in [0, 1]$  a contractual term

Think:  $p_i$  is loan price and  $\tau_i$  is tightness of covenant

Parties bargain over outcomes on list  $\mathcal{L} = \{(p_i, \tau_i)\}_i$  but nothing off it

State  $s \in \{0, 1\}$ ;  $\mathcal{L}$  cannot depend on  $s$

# MODEL: PAYOFFS

Payoffs if trade (net of investment):

$$u_B = i + s\tau - p$$

$$u_S = p - c\tau$$

$\uparrow \tau$  hurts S, benefits B; degree depends on  $s$ ;  $c < 1$

Payoffs if no trade (net of investment): Both get zero

# MODEL: TIMING

$t = 0$ : Parties agree on a list of  $\mathcal{L} = \{(p_i, \tau_i)\}_i$

$t = 1$ : B chooses  $i$

$t = 2$ : State  $s$  realized; 50-50 Nash bargain over outcomes on list

BENCHMARK: FIRST BEST



## BENCHMARK: FIRST BEST

$$i \text{ and } \tau \max \mathbb{E}[u_B + u_S] - \frac{1}{2}ki^2 = \mathbb{E}[(s - c)\tau(s)] + i - \frac{1}{2}ki^2$$

## BENCHMARK: FIRST BEST

$$i \text{ and } \tau \max \mathbb{E}[u_B + u_S] - \frac{1}{2}ki^2 = \mathbb{E}[(s - c)\tau(s)] + i - \frac{1}{2}ki^2$$

Term  $\tau$ :  $\tau_{fb} = 0$  if  $s = 0$  and  $\tau_{fb} = 1$  if  $s = 1$ : State dependent

# BENCHMARK: FIRST BEST

$$i \text{ and } \tau \max \mathbb{E}[u_B + u_S] - \frac{1}{2}ki^2 = \mathbb{E}[(s - c)\tau(s)] + i - \frac{1}{2}ki^2$$

Term  $\tau$ :  $\tau_{fb} = 0$  if  $s = 0$  and  $\tau_{fb} = 1$  if  $s = 1$ : State dependent

Investment  $i$ :  $i_{fb} = \frac{1}{k}$

# THREE TYPES OF LISTS

# THREE TYPES OF LISTS

Long list: All  $(p_i, \tau_i)$  on list

“Best possible” terms: Price & terms chosen ex post, after  $s$  realized

# THREE TYPES OF LISTS

Long list: All  $(p_i, \tau_i)$  on list

“Best possible” terms: Price & terms chosen ex post, after  $s$  realized

Short list: One pair fixed

“Boilerplate” terms: Price & terms fixed ex ante, before  $s$  realized

# THREE TYPES OF LISTS

Long list: All  $(p_i, \tau_i)$  on list

“Best possible” terms: Price & terms chosen ex post, after  $s$  realized

Short list: One pair fixed

“Boilerplate” terms: Price & terms fixed ex ante, before  $s$  realized

Fixed price: Price fixed, all  $\tau_i$  on list

“Precedent” terms: Price fixed ex ante but terms chosen ex post

“BEST POSSIBLE” TERMS: NOTHING FIXED



“BEST POSSIBLE” TERMS: NOTHING FIXED

$t = 2$ :  $\tau$  efficient;  $p$  splits surplus

# “BEST POSSIBLE” TERMS: NOTHING FIXED

$t = 2$ :  $\tau$  efficient;  $p$  splits surplus

$t = 1$ : B chooses  $i$  before bargaining

$\implies$  Underinvestment: B pays full cost to get only  $\frac{1}{2}$  surplus

Any investment benefit is partially expropriated by  $p$  negotiation

# “BEST POSSIBLE” TERMS: NOTHING FIXED

$t = 2$ :  $\tau$  efficient;  $p$  splits surplus

$t = 1$ : B chooses  $i$  before bargaining

$\implies$  Underinvestment: B pays full cost to get only  $\frac{1}{2}$  surplus

Any investment benefit is partially expropriated by  $p$  negotiation

$t = 0$ :  $\mathcal{L}$  long

# “BEST POSSIBLE” TERMS: NOTHING FIXED

$t = 2$ :  $\tau$  efficient;  $p$  splits surplus

$t = 1$ : B chooses  $i$  before bargaining

$\implies$  Underinvestment: B pays full cost to get only  $\frac{1}{2}$  surplus

Any investment benefit is partially expropriated by  $p$  negotiation

$t = 0$ :  $\mathcal{L}$  long

$\implies$  Best possible: Preserve flexibility but sacrifice investment incentives

# “BEST POSSIBLE” TERMS: NOTHING FIXED

$t = 2$ :  $\tau$  efficient;  $p$  splits surplus

$t = 1$ : B chooses  $i$  before bargaining

$\implies$  Underinvestment: B pays full cost to get only  $\frac{1}{2}$  surplus

Any investment benefit is partially expropriated by  $p$  negotiation

$t = 0$ :  $\mathcal{L}$  long

$\implies$  Best possible: Preserve flexibility but sacrifice investment incentives

Solution: Fix everything ex ante: Boilerplate terms!

BOILERPLATE:  $(p, \tau)$  FIXED

BOILERPLATE:  $(p, \tau)$  FIXED

$t = 2$ :  $\mathcal{L}$  is singleton  $\implies (p, \tau)$  fixed

# BOILERPLATE: $(p, \tau)$ FIXED

$t = 2$ :  $\mathcal{L}$  is singleton  $\implies (p, \tau)$  fixed

$t = 1$ :  $i = i_{fb}$ : Given  $p$  fixed, B captures full benefit of  $i$



# BOILERPLATE: $(p, \tau)$ FIXED

$t = 2$ :  $\mathcal{L}$  is singleton  $\implies (p, \tau)$  fixed

$t = 1$ :  $i = i_{fb}$ : Given  $p$  fixed, B captures full benefit of  $i$

$t = 0$ :  $\tau$  doesn't depend on  $s$ : So inefficient in at least one state

# BOILERPLATE: $(p, \tau)$ FIXED

$t = 2$ :  $\mathcal{L}$  is singleton  $\implies (p, \tau)$  fixed

$t = 1$ :  $i = i_{fb}$ : Given  $p$  fixed, B captures full benefit of  $i$

$t = 0$ :  $\tau$  doesn't depend on  $s$ : So inefficient in at least one state

$\implies$  Boilerplate: Protects investment incentives but sacrifices flexibility

# BOILERPLATE: $(p, \tau)$ FIXED

$t = 2$ :  $\mathcal{L}$  is singleton  $\implies (p, \tau)$  fixed

$t = 1$ :  $i = i_{fb}$ : Given  $p$  fixed, B captures full benefit of  $i$

$t = 0$ :  $\tau$  doesn't depend on  $s$ : So inefficient in at least one state

$\implies$  Boilerplate: Protects investment incentives but sacrifices flexibility

Solution: Precedent terms! Fix  $p$  ex ante and let  $\tau$  adjust

PRECEDENT TERMS: FIX  $p$  NOT  $\tau$

## PRECEDENT TERMS: FIX $p$ NOT $\tau$

$t = 2$ : Bargain over  $\tau$  to max  $u_B u_S = (i + s\tau - p)(p - c\tau)$  ( $p$  fixed!)

If  $s = 0$ ,  $\tau = 0$  and if  $s = 1$ ,  $\tau = \frac{(1 + c)p - ci}{2c}$

$\tau$  adjusts imperfectly because price cannot adjust

## PRECEDENT TERMS: FIX $p$ NOT $\tau$

$t = 2$ : Bargain over  $\tau$  to max  $u_B u_S = (i + s\tau - p)(p - c\tau)$  ( $p$  fixed!)

$$\text{If } s = 0, \tau = 0 \text{ and if } s = 1, \tau = \frac{(1 + c)p - ci}{2c}$$

$\tau$  adjusts imperfectly because price cannot adjust

$t = 1$ :  $i = i_{fb}$ : Given  $p$  fixed, B captures full benefit of  $i$

# PRECEDENT TERMS: FIX $p$ NOT $\tau$

$t = 2$ : Bargain over  $\tau$  to  $\max u_B u_S = (i + s\tau - p)(p - c\tau)$  ( $p$  fixed!)

$$\text{If } s = 0, \tau = 0 \text{ and if } s = 1, \tau = \frac{(1 + c)p - ci}{2c}$$

$\tau$  adjusts imperfectly because price cannot adjust

$t = 1$ :  $i = i_{fb}$ : Given  $p$  fixed, B captures full benefit of  $i$

$t = 0$ : Determine  $p$

# PRECEDENT TERMS: FIX $p$ NOT $\tau$

$t = 2$ : Bargain over  $\tau$  to max  $u_B u_S = (i + s\tau - p)(p - c\tau)$  ( $p$  fixed!)

If  $s = 0$ ,  $\tau = 0$  and if  $s = 1$ ,  $\tau = \frac{(1 + c)p - ci}{2c}$

$\tau$  adjusts imperfectly because price cannot adjust

$t = 1$ :  $i = i_{fb}$ : Given  $p$  fixed, B captures full benefit of  $i$

$t = 0$ : Determine  $p$

$\implies$  Precedent: Protect investment incentives & preserve some flexibility



# DISTORTIONS AND PREDICTIONS

Best possible distorts ex ante incentives: Underinvestment

Prediction: Arise when value of investment low ( $k$  high)

Boilerplate distorts ex post allocation: Doesn't respond to state

Prediction: Arise when value of flexibility low ( $\mathbb{P}[s = 1]$  near 0 or 1)

Precedent distort ex post too: Responds imperfectly to state

Prediction: Arise otherwise: Value investment and flexibility

# EXPLAINING PAPER W/ HART-MOORE

Shows precedent, boilerplate, best possible terms arise optimally and why

Tradeoff between incentives and flexibility

# EXPLAINING PAPER W/ HART-MOORE

Shows precedent, boilerplate, best possible terms arise optimally and why

Tradeoff between incentives and flexibility

Explains why bargaining may persist even in optimal contracts

# EXPLAINING PAPER W/ HART-MOORE

Shows precedent, boilerplate, best possible terms arise optimally and why

Tradeoff between incentives and flexibility

Explains why bargaining may persist even in optimal contracts

Explain cross-sectional variation in terms even with fixed price

## COMMENTS

# COMMENT 1: THEORY

Authors suggest that model inconsistent with theory

But Hart–Moore 04 seems like good start

Question: Model explain facts?

Matters: Explains why precedent arise

They are not about valuation difficulty but about tradeoff

Suggestion: Develop predictions and test them

## COMMENT 2: OTHER THEORIES

Authors might reject Hart–Moore but other theories come to mind:

E.g. could signal at initial negotiation anticipating renegotiation

E.g. could have strong tastes for goods with same production cost

E.g. Higbee, Jennejohn, Jones, and Tally 26

Question: Can you rule out these theories?

Matters: Determines what we learn (about)

Suggestion: Consider broader set of theories and try to falsify them

# COMMENT 3: FALSIFIABILITY

Authors suggest anything goes

parties cannot form...estimates of...value.... A reader who believes...better...empirical strategies will reveal price sensitivity...will not share this premise. But this is a difference in judgment about markets...

A critic might imagine that the terms we highlight are simply gestating boilerplate.... Whether that domain [of precedent terms] is narrow or wide is a question on which readers can and should differ

Question: Prec. terms unmeasured best possible or approx. boilerplate?

Matters: Set of actual precedent terms could be empty

Suggestion: Take clearer stand with falsifiable statement



## CONCLUSIONS

# CONCLUSIONS

Super interesting paper on super interesting phenomenon

Relevant for new and existing theory and for empirical work