

Delegated Cheap Talk: A Theory of Investment Banking

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What we do

Question

“Why are investment banks (IBs) valuable?”

Literature says

“They are reputable experts!”

We say

“They may also be delegated cheap talkers, but still in an informative way.”



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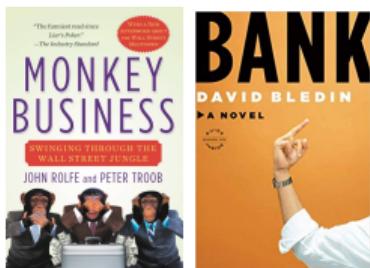
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Motivation

Popular view about investment banks (IBs)



The existing academic view ([expertise](#) or [reputation](#)) seems at odds with what the [general public](#) thinks, what the [popular media](#) portray, and what the [investment bankers](#) themselves say.

... [Investment bankers] only want to say good things. The better they can make the company sound, the easier it will be for them to sell the securities. The easier it is for them to sell the securities, the more certain they'll be that the clients will be happy. That means fees. Fees are important.

— Rolfe and Troob (2009)
Monkey Business: Swinging through the Wall Street jungle

⇒ How can we capture this view of IBs as [cheap-talking salesmen](#)

Main results

Focusing on conventional Initial Public Offerings (IPOs)

Successful IPO

Successful IPOs require the **retail participation rate** to be at least as high as the investment banking **success fee**

Seller-optimal IPO

Optimal IPO design **maximizes** the **success fee** while giving the IB **minimal sufficient credibility**

Value of IBs

Optimal Bank-led IPOs provide **higher expected payoffs** for the seller than optimal **Seller-led** and **Buyer-led** IPOs

Related literature

Investment banking

- **Expertise:** Baron and Holmström (1980); Baron (1982); Ramakrishnan and Thakor (1984); Benveniste and Spindt (1989); Biais et al. (2002)
- **Reputation:** Beatty and Ritter (1986); Booth and Smith II (1986); Carter and Manaster (1990); Chemmanur and Fulghieri (1994)
- These models have mixed empirical support (e.g. Ritter and Welch, 2002)

Strategic communication

- Several papers endogenize how Sender acquires information before cheap talk.
Austen-Smith (1994); Pei (2015); Argenziano et al. (2016); Kreutzkamp (2022); Lou (2022); Lyu and Suen (2022)
- Our paper further endogenizes the conflict of interest. A separate designer (seller) offers a contract; Sender's (IB's) credibility arises through the contract

Model

Model

Agents

Seller (entrepreneur), Intermediary (investment bank), and Buyer (representative institutional investor)

States

“Opening price” $\omega \in \Omega = \{0, 1\}$, the market value of Seller’s firm when its shares start trading. Prior probability is $p = \Pr(\omega = 1)$

Actions

$a \in A = \{0, 1\}$, indicating the buyer not investing (0; IPO is withdrawn) and investing (1; IPO is completed).

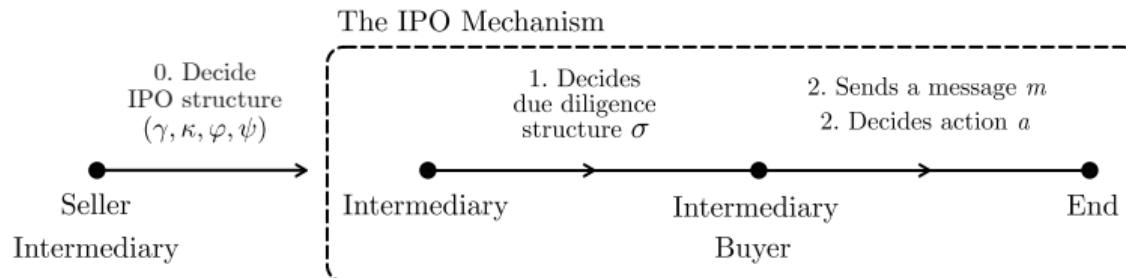
“IPO structure” or “contract”

In Stage 0 (“deal structuring stage”), Seller and Intermediary agree on

- $\gamma \in [\underline{\gamma}, \bar{\gamma}]$: the retail participation rate,
- $\kappa \geq 0$: the offer price,
- $\varphi \in [0, 1]$: the success fee (rate), and
- $\psi \in \mathbb{R}$: the retainer fee (lump sum).

IPO Mechanism

- Information structure** In **Stage 1** ("due diligence stage"), Intermediary publicly chooses a due diligence structure $\sigma : \Omega \longrightarrow \Delta(\mathcal{S})$. It privately observes a realized signal $s \in \mathcal{S}$
- Cheap talk** In **Stage 2** ("roadshow stage"), Intermediary sends a message $m \in \mathcal{M}$ to Buyer. The message is cheap: (a) costless, (b) non-verifiable, and (c) nonbinding. Buyer chooses $a \in A = \{0, 1\}$.



Payoffs

Payoffs

Seller gets	$u_S = -\psi + a \cdot (1 - \varphi)\kappa + (1 - a) \cdot p,$
Intermediary gets	$u_I = \psi - C(\sigma) + a \cdot [\varphi\kappa - (1 - \omega)\gamma\kappa],$
Buyer gets	$u_B = a \cdot (-\kappa + \omega).$

- **Interpretation:** Unlike institutional investors, retail investors make non-binding orders and withdraw their bids in the bad state

Cost of due diligence

$C(\sigma) = \lambda \sum_q P_\sigma(q)c(q)$, a **posterior-separable** cost function where

- q are posteriors induced by σ with probabilities $P_\sigma(q)$
- $c(\cdot)$ is smooth, strictly convex, and has steep boundaries

Equilibrium and Optimal IPO Structures

Strategies

Intermediary's strategy is (σ, μ) where $\mu = \{\mu_\sigma : \mathcal{S} \rightarrow \Delta(\mathcal{M})\}_{\sigma \in \Sigma}$ is a collection of **message rules**. **Buyer's strategy** is $\alpha = \{\alpha_\sigma : \mathcal{M} \rightarrow A\}_{\sigma \in \Sigma}$, a collection of **action rules**.

Equilibrium

A strategy profile (σ, μ, α) is an **equilibrium** if **(a)** μ and α are mutual best responses and **(b)** σ is a best response to the most informative (μ, α)

Optimal IPO

Let $\mathcal{E}(t)$ denote the set of equilibria of the IPO mechanism under an IPO structure $t = (\gamma, \kappa, \varphi, \psi)$. A t^* is **seller-optimal** (or **optimal**) if

$$t^* \in \operatorname{argmax}_t \left[\sup_{(\sigma, \mu, \alpha) \in \mathcal{E}(t)} U_t^S(\sigma, \mu_\sigma, \alpha_\sigma) \right].$$

Results

Successful IPOs

Definition An IPO structure is *successful* if it admits an equilibrium with seller's expected payoff strictly greater than p

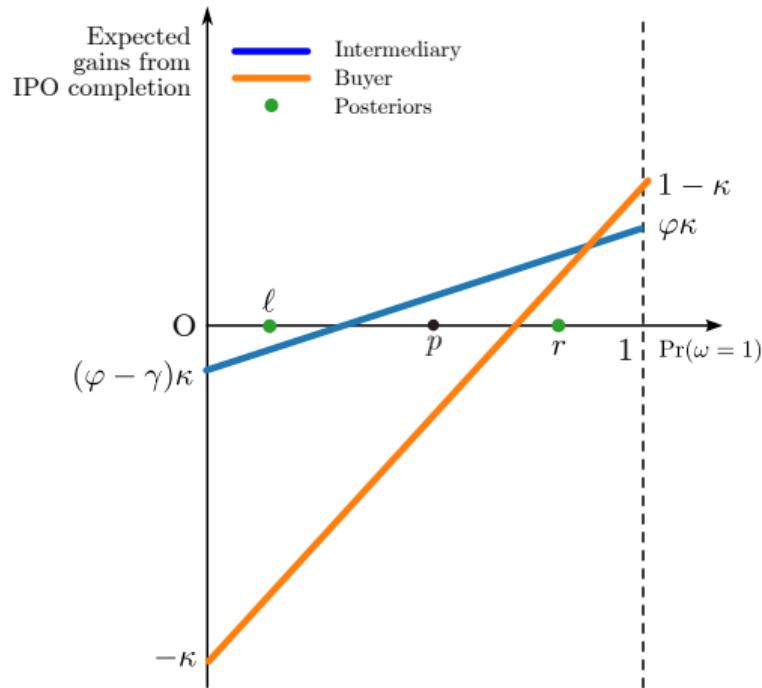
Theorem

In every successful IPO structure, the retail participation rate γ weakly exceeds the success fee φ .

Intuition

- Intermediary needs to take sufficient downside risk (γ) for its message to be believable
- Consistent with US IPOs ($\sim 10\%$ retail participation and $\sim 7\%$ success fees). Explains “firm-commitment” contracts

Illustration of successful IPOs



Lesson At posteriors (ℓ, r) , the gains from investment have the same signs

Key proof step: Properties of successful equilibria

Lemma

On the path of any successful equilibrium:

- ① The intermediary chooses a **binary due diligence structure**;
- ② The intermediary **fully reveals his private information**; and
- ③ The buyer takes an **action weakly preferred** by the intermediary.

Intuition

- **(Obvious)** There are only two actions, so collecting more information than two signals is wasteful
- **(More subtle)** To be credible, intermediary collects and reveals information such that both want the same action in the interim

Characterization of Optimal IPOs

Theorem

A successful IPO structure $(\gamma, \kappa, \varphi, \psi)$ is optimal if and only if

$$\gamma = \underline{\gamma},$$

$$\kappa = \hat{r},$$

$$\varphi = (1 - \hat{\ell})\underline{\gamma}, \text{ and}$$

$$\psi = \frac{\hat{r} - p}{\hat{r} - \hat{\ell}} \cdot \lambda c(\hat{\ell}) + \frac{p - \hat{\ell}}{\hat{r} - \hat{\ell}} \cdot [\lambda c(\hat{r}) - \underline{\gamma}(\hat{r} - \hat{\ell})\hat{r}].$$

where $(\hat{\ell}, \hat{r})$ maximizes the virtual value function

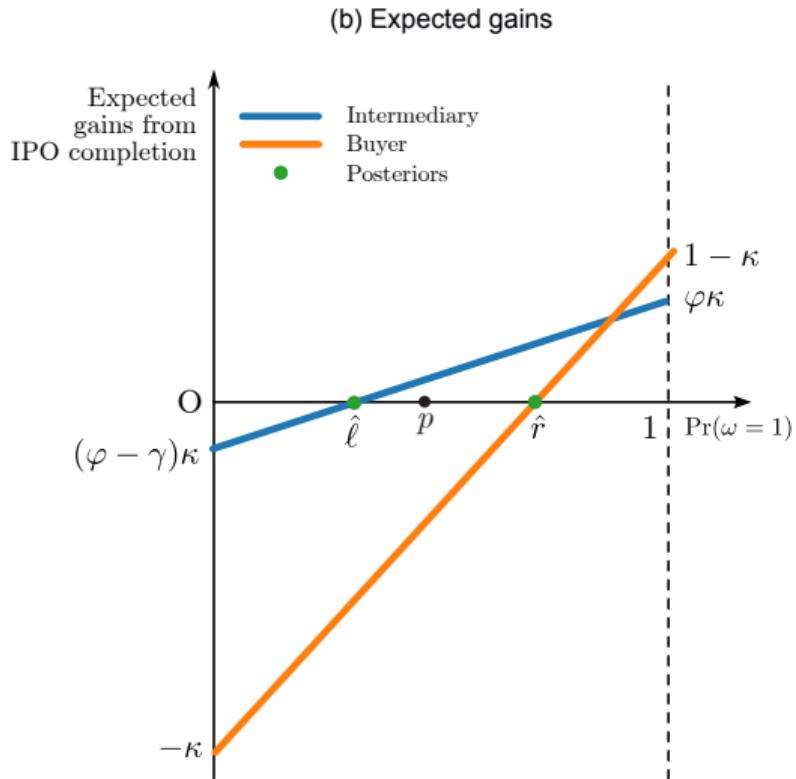
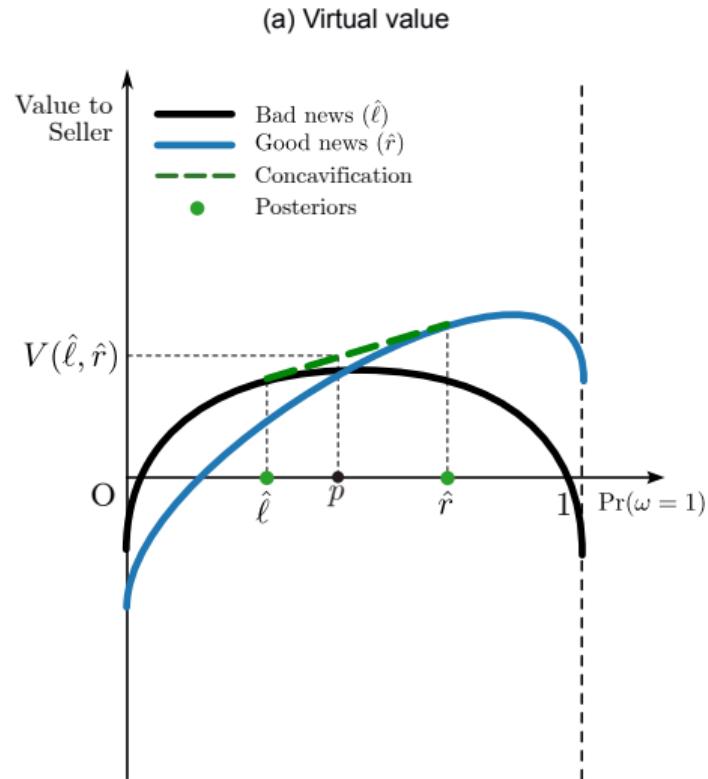
$$V(\ell, r) = \frac{r - p}{r - \ell} \cdot [p - \lambda c(\ell)] + \frac{p - \ell}{r - \ell} \cdot [\underline{\gamma}r^2 + (1 - \underline{\gamma})r - \lambda c(r)].$$

Meaning Optimal IPOs take

- minimum retail participation rates,
- maximum offer prices, making buyers indifferent at interim,
- maximum success fees while maintaining IB's credibility.
- maximum retainer fee while maintaining IB's participation

Proof idea If the above doesn't hold, decreasing γ , increasing κ , increasing φ , or decreasing ψ makes the seller better off.

Illustration of Optimal IPOs



Comparative statics

Notation (reminder)

- p is the ex-ante firm value; $\underline{\gamma}$ is the minimum retail participation rate
- λ is the scaling constant on due diligence cost

Corollary

Suppose $(\gamma, \kappa, \varphi, \psi)$ is a unique optimal IPO structure

- ① As p increases, the offer price κ increases and the success fee φ decreases.
- ② As $\underline{\gamma}$ increases, the offer price κ increases.
- ③ As λ increases, both κ and φ decrease.

Intuition for $\underline{\gamma}$ As $\underline{\gamma}$ increases, IBs face greater downside risk and conduct due diligence more aggressively

Effects on seller payoffs

Notation (reminder)

- $\underline{\gamma}$ is the minimum retail participation rate
- λ is the scaling constant on due diligence cost

Corollary

The seller's expected payoff under the optimal IPO structure is decreasing in $\underline{\gamma}$ and λ .

Policy implication for $\underline{\gamma}$

- Countries with statutory $\underline{\gamma}$: India (35%), South Korea (20%), Hong Kong (10%), Belgium (10%), Turkey (10%), France (until recently, 10%)
- Higher $\underline{\gamma}$ expands retail access to IPOs at the expense of IPO issuers

What is the value of IBs?

Comparison with Seller-led and Buyer-led IPOs

Seller-led IPO

Seller decides the IPO structure (γ, κ) , conducts due diligence, and runs the roadshow. The ex-post payoffs are

$$u_S = -C(\sigma) + a \cdot [\kappa - (1 - \omega)\gamma\kappa] + (1 - a) \cdot p, \text{ and}$$

$$u_B = a \cdot (-\kappa + \omega).$$

Buyer-led IPO

Seller decides the IPO structure (γ, κ, ψ) . Buyer conducts due diligence and makes the investment decision. The ex-post payoffs are

$$u_S = a \cdot [\kappa - (1 - \omega)\gamma\kappa] + (1 - a) \cdot p, \text{ and}$$

$$u_B = -C(\sigma) + a \cdot (-\kappa + \omega).$$

Bank-led IPOs make the seller better off

Theorem

Optimal seller-led IPOs and optimal buyer-led IPOs are weakly worse for the seller than an optimal bank-led IPO.

Intuition

- **(Seller-led case)** Because of the large gains from IPO completion, Seller needs to set **higher retail participation rate (γ)** to make himself credible
- **(Buyer-led case)** Because buyer chooses the due diligence structure, she does **collects information more fairly** than in the Bank-led case

Takeaway

Why do IBs earn large fees?

- Seller maximizes its own payoff by paying a fat fee that biases the bank's incentives toward speaking favorably about the firm.
- This fee cannot be too high, or it would undermine the bank's credibility.
- This arrangement yields a higher payoff than the seller running the IPO.

⇒ The conflict of interest between IB and investors is a design feature that mitigates the larger conflict of interest between seller and investors



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Thank you!

Appendix

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