Delegated Cheap Talk: a Theory of Investment Banking

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Extended Abstract

When Mark Zuckerberg announced his plan to sell the shares of Facebook to the public in 2012, he chose Morgan Stanley as the company's investment bank. That is, he chose the bank as the lead underwriter that would help manage Facebook's initial public offering (IPO). Among the underwriter's most crucial responsibilities were (a) *due diligence*—inspecting the company's business and finances, and (b) *roadshow*—meeting large institutional investors to convince them to buy the shares. For these services, Morgan Stanley earned 1.1 percent of the total 16 billion US dollars raised. More typical, moderate-sized IPOs in the United States usually pay investment banks even more hefty fraction, of 7 percent (Chen and Ritter, 2000; Ritter, 2023). The standard explanation behind such large compensation is that investment banks reduce the information asymmetry between the seller and the buyer through expertise (Baron and Holmström, 1980; Baron, 1982; Ramakrishnan and Thakor, 1984; Biais, Bossaerts, and Rochet, 2002) or reputation (Beaty and Ritter, 1986; Booth and Smith II, 1986; Carter and Manaster, 1990; Chemmanur and Fulghieri, 1994).

Yet this view of investment banks as reputable experts seem largely at odds with what the general public thinks, what the popular media portray, and even what the investment bankers say about themselves. For example, the protesters of the left-wing populist movement in 2011, Occupy Wall Street, cried "We are the 99%," referring to investment banks as the undeservingly rich one percent that caused the 2008 financial crisis. Although with much exaggeration, movies such as *Wall Street* (1987), *Margin Call* (2011), and *The Wolf of Wall Street* (2013) depict investment bankers as sleazy, smooth-talking salesmen of financial assets. In his memoir *Monkey Business: Swinging through the Wall Street jungle*, the former investment banker Rolfe and Troob (2009) writes:

> . . . [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.

Motivated by this stark contrast between the academic and popular views, this paper studies whether investment banks can be valuable even when they have neither expertise nor reputation, by being *delegated talkers*. Our model has three players: a seller (entrepreneur) owning a company with an uncertain future value, an intermediary (investment bank), and a buyer (investor). It proceeds in three stages that closely resemble the real-world IPO

procedures. First, in the *contracting stage*, the seller designs a contract that specifies state-contingent transfers to the intermediary. Second, in the *due diligence stage*, the intermediary publicly announces its due diligence method, namely, the structure of its costly information acquisition on the company's uncertain state. It then observes a private signal generated from that information structure. Third, in the *roadshow stage*, the intermediary talks to the buyer who then decides whether to invest in the company or not. Importantly, the talk is *cheap*; that is, the intermediary's message is costless, non-binding, and unverifiable. The players' preferences are such that the seller simply wants to sell his firm, the intermediary wants to maximize its profit under its contract, and the buyer wants to invest only if her expected return is large enough.

In this setting, we show that having the intermediary as the investment bank strictly improves the seller's expected payoff relative to two benchmarks: (1) when the seller himself takes the investment bank's role and (2) when the buyer assumes that role. First, when the seller serves as his own investment bank, his incentives are to recommend the buyer to invest regardless of his private information. Consequently, even if the seller has greater expertise about his own firm than anyone else, his talk cannot influence the seller. Second, when the buyer serves as the investment bank, she acquires information about the firm too fairly, resulting in a suboptimal rate of success for the seller. In contrast to these benchmarks, using the intermediary allows the seller to design the intermediary's incentives to maximize the success rate while keeping the intermediary's talk informative.

Building on these observations, we characterize the unique efficient seller-optimal contract (Theorem 1). An investment banking contract is Pareto-efficient and seller-optimal if and only if there exists an information structure that maximizes the success rate subject to binding *incentive compatibility* (IC) and *incentive alignment* (IA) constraints. On the one hand, incentive compatibility requires that the seller respects the intermediary's incentives to choose the information structure to maximize its expected profit. On the other hand, incentive alignment requires that it is rational for the intermediary to reveal its private information truthfully. Taken together, the result means that the seller designs the contract to distort the intermediary's incentives as close to his own as possible, while not pushing it to such an extreme that would make intermediary unbelievable. Intuitively, if the intermediary's incentives are too distorted in favor of the seller, the buyer would stop believing the intermediary's talk.

Our characterization of the optimal contract places a sharp restriction on the risk-return patterns faced by the intermediary and the buyer (Corollary 3). First, the optimal contract makes the intermediary share the investment risk with the buyer. That is, the intermediary shares the losses with the buyer in a bad state as well as sharing the returns in a good state.

Second, the optimal contract gives the intermediary a higher rate of return than the buyer. In other words, the intermediary's gain in the good state per unit loss in the bad state is larger than the buyer's. The intuition behind this result is that the seller promises a high return to the intermediary to make due diligence method as favorable to him as possible.

Related literature

Our paper bridges two distant branches of existing literature: those on financial intermediation and on strategic communication. First, our results contribute to the theory of financial intermediation by isolating the value of investment banks as delegated talkers. Second, we extend the theory of strategic communication by endogenizing the talker's incentives.

Investment banking and financial intermediation

Our paper revisits the mature literature on the role of investment banks as information producers that reduce the information asymmetry between the seller and the buyer. A common assumption in the literature is that investment banks have *expertise*, acquiring information more easily than others. For example, in Baron (1982) and Biais, Bossaerts, and Rochet (2002), the investment bank is *ex ante* better informed about the firm's market value than the seller. In Baron and Holmström (1980), the seller and the intermediary have the same prior information about the firm but only the latter observes an additional signal. In Ramakrishnan and Thakor (1984), the intermediary collects information at a lower cost than the buyer by forming a coalition.

Another frequent assumption in the literature is that investment banks have *reputation*—loosely defined—which makes them credible sources of information. For example, Beaty and Ritter (1986) and Booth and Smith II (1986) argue that the intermediary facing a repeated game maintains its reputation of being truthful and thus can influence the buyer. Carter and Manaster (1990) directly assume that more reputable intermediary is better able to assess the seller's firm. In Chemmanur and Fulghieri (1994), the intermediary has private information on its cost of information acquisition, inducing it to evaluate the seller's firm sufficiently accurately to gain the reputation of credibility. Empirically, in their survey on the IPO literature, Ritter and Welch (2002) argue that neither expertise nor reputation of investment banks are primary driver of their observed phenomena, although Fang (2005) and Brau and Fawcett (2006) argue otherwise. More recent works continue to broadly conform to either views (Eckbo, Masulis, and Norli, 2007; Ljungqvist, 2007; Ragupathy, 2011; Lee and Masulis, 2011; Katti and Phani, 2016; Lowry et al., 2017). In response to this literature, our work appeals neither aspects yet show that the intermediary can emerge as an information

producer through an optimal contract.

More broadly, our paper contributes to the theory of financial intermediation, on the principal-agent relationship between financial intermediaries (agents) and their clients (principals). A canonical view in the literature[1] is that of Diamond (1984). He argues that financial intermediaries serve as *delegated monitors*, pooling deposits from many customers and making loans to entrepreneurs as it is too costly for individual depositors to monitor the loans. This view thus focuses on the relationship between the intermediary and the investor (depositor). In contrast, we focus on the relationship between the intermediary and the seller (entrepreneur), and argue that, to entrepreneurs, intermediaries serve as *delegated talkers*.

Strategic communication

Our paper augments the existing theories of strategic communication in Sender-Receiver games by endogenizing both the information acquisition and the bias of the sender. In the classic paper by Crawford and Sobel (1982), the sender and the receiver have partially aligned preferences over the receiver's action, which enables the sender's cheap talk to be informative. In their work, however, the sender's incentives and information are exogenously given.

Many subsequent studies thus add endogenous information acquisition to the classic cheap talk game. For example, in Austen-Smith (1994), the receiver knows neither the sender's cost of information nor his binary decision of acquiring information. The paper shows that this uncertainty improves the seller's credibility. Pei (2015) is another example. Using a more general set of information structures and a monotonic information cost function, he finds that the sender always fully reveals the acquired information. In Argenziano, Severinov, and Squintani (2016), the sender collects costly information through multiple Bernoulli trials before sending a cheap message to the receiver. They find that the sender collects more information than the receiver would himself due to a threat of being ignored. In Deimen and Szalay (2019), the sender collects information about the ideal actions of both the sender and the receiver before communicating with the receiver. They show that the sender chooses to collect less information about his own state to make his talk more credible to the receiver. Most recently, Lyu and Suen (2022) and Kreutzkamp (2022) let the sender collects information before talking to the receiver, and study the seller's optimal experiment among those with general information structures.

In our knowledge, only one existing paper go a step further and let both the sender's

[1]Bhattacharya and Thakor (1993) and Thakor (2020) provide comprehensive surveys of the existing theories.

information acquisition and his bias be determined in the model.[2] In Ivanov (2010), there are (a) a privately informed, biased expert, (b) an intermediary (sender), and (c) an unbiased principal (receiver). The principal first decides the bias of the intermediary. Next, the expert talks to the intermediary, who then talks to the principal. The paper shows that the principal should set the intermediary's bias in the opposite direction of the expert's, so that, roughly speaking, the biases offset each other. In comparison, whereas Ivanov (2010) lets the receiver determine the intermediary's bias, we let the seller make the decision. The result is that the seller-optimal contract makes the intermediary as biased as possible in favor of the seller while maintaining its talk credible.

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[2]Notably, Antic and Persico (2020) allows endogenous bias but not endogenous information acquisition.

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