THE PRICE OF AUCTION-BASED IPOS

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ABSTRACT

The initial public offering process is under assault. Critics of this process have woven a complex set of interconnected objections to the orthodox method for conducting IPOs, pricing of shares, and allocating them to preferred investors. These critics instead point to online auctions as an alternative IPO method that can provide more equitable access, efficient prices, and egalitarian allocations. These claims rest on Google's recent IPO and W.R. Hambrecht + Co.'s OpenIPO mechanism, conventionally regarded as impure variants of what is known as a descending-bid or Dutch auction (Dutch IPO).

This article assesses the empirical and theoretical case for Dutch IPOs. Google's IPO featured peculiarities that delimit its utility as a case study. Instead this article novelly presents underpricing data on all OpenIPOs, as well as data about a French variant known as the Mise en Vente. The results fail to vindicate Dutch IPO supporters' primary claims, which perilously rely upon observations from the anomalous two-year internet bubble period. Moreover, economic and financial analyses of Dutch IPOs reveal ways in which they may be susceptible to fraud that bookbuilding is not. Ultimately, claims of the Dutch IPO's superiority over bookbuilding at best are unproven and at worst fail to appreciate certain risks.

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INTRODUCTION

The initial public offering (IPO) process is under assault. Since the 1970s the number of IPOs has increased each and every decade,[1] averaging more than one each business day and raising approximately $523 billion over the past quarter-century.[2] During this period underpricing, or the spread between a stock's initial offering price and its closing price after the first day of trading,[3] has averaged 17.4 percent,[4] and issuers have left approximately $120 billion on the table.[5] Underpricing is thus commonplace, which perhaps has contributed to it being accepted as a rational practice.[6] This acceptance, however, turned into apprehension during the internet bubble period; from 1999 to 2000 IPOs were underpriced on average by a dizzying 63.3 percent,[7] leaving a staggering total of $62.4 billion on the table,[8] or over half of the amount left during past quarter-century.[9]

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[1] *See infra* notes 69-74 and accompanying text (Table 1, U.S. IPO Returns, 1980-2005). This article uses data over a twenty-six year span beginning in 1980, an admittedly arbitrary starting point. The more logical time to begin is September, 1978, when Regulation A was amended to increase the registration requirement for IPOs from $500,000 to $1.5 million, but most analyses and data sets are limited to post-1980 IPOs.

[2] Jay R. Ritter, *Some Factoids About the 2005 IPO Market* 2, 9 (Jan. 27, 2006) tbls. 1 & 7, http://bear.cba.ufl.edu/ritter/work_papers/Some%20Factoids%20about%20the%202004%20IPO%20Market.pdf.

[3] Catherine M. Daily et al., *IPO Underpricing: A Meta-Analysis and Research Synthesis*, 27 ENTREPRENEURSHIP: THEORY & PRACTICE 271, 272 (2003) ("Underpricing is used synonymously in the literature with initial returns; the greater the underpricing the higher the initial returns."); *see also infra* note 76. Underpricing precisely refers to a positive difference between a stock's closing and offering prices, whereas overpricing refers to the inverse. Imprecise usage of underpricing is tolerated, presumably because, "[w]hile instances of overpricing are common, studies of new issue pricing conclude that, on average, underwriters underprice new issues." Lynn A Stout, *The Unimportance of Being Efficient: An Economic Analysis of Stock Market Pricing and Securities Regulation*, 87 MICH. L. REV. 613, 659 (1988).

[4] *See infra* notes 69-74 and accompanying text (Table 1, U.S. IPO Returns, 1980-2005). *See also* Alexander Ljungqvist, *IPO Underpricing*, *in* HANDBOOKS IN FINANCE: EMPIRICAL CORPORATE FINANCE 1, 1 (2004) ("Underpricing has tended to fluctuate a great deal, averaging 21% in the 1960s, 12% in the 1970s, 16% in the 1980s, 21% in the 1990s, and 40% in the four years since 2000 (reflecting mostly the tail-end of the late 1990s internet boom).").

[5] Ritter, *supra* note 2, at 9. Underpricing is distinct from "money left on the table," which is the aggregate amount of underpricing. *See, e.g.*, Jay R. Ritter, *Money Left on the Table in IPOs by Firm* 1 (Jan. 26, 2006) ("The amount of money left on the table is defined as the difference between the closing price on the first day and the offer price, multiplied by the number of shares sold."), http://bear.cba.ufl.edu/ritter/work_papers/monew.pdf [hereinafter Ritter, *Money Left by Firm*].

[6] *See infra* Part I.A. *But cf., e.g.*, Janet Cooper Alexander, *The Lawsuit Avoidance Theory of Why Initial Public Offerings Are Underpriced*, 41 UCLA L. REV. 17, 23 (1993) ("When initial offering prices are compared with market prices over a longer time, it turns out that IPOs significantly underperform the market.").

[7] *See infra* notes 149-150 and accompanying text (Table 2, Internet Bubble IPO Returns, 1998-2001). *See also infra* notes 151-159 and accompanying text.

[8] Ritter, *supra* note 2, at 2.

[9] *See supra* note 5.

When the bubble burst in 2001 that apprehension turned into anger.[10] Individual investors sustained estimated losses exceeding 90 percent of their IPO investments' value.[11] New York State Attorney General Eliot Spitzer proceeded to call out underwriters as running a sophisticated "con game" with issuers:

> When the analysts and investment bankers went to the CEOs [of issuers] they said . . . "you bring your underwriting to us, but we will give you, not the company, but individually IPO allocations to the tune of a few million bucks." . . . . [T]he point is you had this incestuous ring from analyst to investment banker to CEO. Now who is left out in this? Who's left out is the shareholder–folks like you and I who go out there and buy shares because the analyst says buy the stock. . . . They used to have a name for that, a Ponzi Scheme, right? Isn't that what it was?[12]

The "hyperbolic rate" at which IPO underpricing had increased prompted John Coffee to assert that, "[w]hatever the traditional rationale for underpricing, that rationale no longer applies to current practices."[13]

The bubble's aftermath prompted the SEC to commission a closer examination of the IPO process.[14] Noting that "public confidence in the integrity of the IPO process had eroded significantly,"[15] a blue-ribbon

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[10] Certainly a compounding factor was the medley of financial scandals that began with Enron's disclosure of accounting irregularities, which intensified public scrutiny of customary business practices. *See generally* Symposium, *Enron and the Future of U.S. Corporate Law and Policy*, 88 CORNELL L. REV. 269 (2004).

[11] *See, e.g.*, William Hambrecht, *Fixing the IPO Process* 3 (Sept. 2002), http://www.wrhambrecht.com/ind/strategy/bill_pov/200209/report.pdf.

[12] Eliot Spitzer, *Keynote Address*, 76 ST. JOHN'S L. REV. 801, 811-12 (2002) (Symposium: Enron and Its Aftermath). *But see* Douglas Cumming & Jeffrey MacIntosh, *Boom, Bust, and Litigation in Venture Capital Finance*, 40 WILLAMETTE L. REV. 867, 868 (2004) (pointing alternatively to a perfect storm in which "the changing availability of IPOs and greatly enhanced IPO valuations combined to produce widespread and systematic pathologies in IPO exits . . . that led investment bankers and VCs to change their behavior in value-destructive ways"). Ever politic, Spitzer did proceed to scale his statement back slightly by adding: "It may be a little more subtle than that in terms of what was going on, but that is the essence of this dynamic and, it's not right." Spitzer, *supra*, at 812.

[13] John C. Coffee, Jr., *IPO Underpricing and Dutch Auctions*, N.Y.L.J., Sept. 16, 1999, at 5. As evidence Coffee cites the "staggering" amount of money left on the table against the amount of equity raised in the early part of the internet bubble. *Id.* at 5-6. *But see infra* notes 151-159 and accompanying text.

[14] *See* NYSE/NASD IPO ADVISORY COMM., REPORT AND RECOMMENDATIONS OF A COMM. CONVENED BY THE NEW YORK STOCK EXCHANGE, INC. AND NASD AT THE REQUEST OF THE U.S. SECURITIES AND EXCHANGE COMMISSION A-1 (May 2003) (Appendix A, Letter from Harvey L. Pitt, Chairman of Securities and Exchange Commission, to Richard Grass, Chairman and Chief Executive Officer of The New York Stock Exchange, Inc., and Robert R. Glauber, Chairman and Chief Executive Officer of NASD, dated Aug. 22, 2002) http://www.nasd.com/web/groups/rules_regs/documents/rules_regs/nasdw_010373.pdf [hereinafter IPO ADVISORY COMM., REPORT].

[15] *Id.* at 1-2. The committee was composed of prominent representatives from the academic, financial, legal, and securities exchange sectors. *Id.* at *i*.

committee determined that a contributing factor to this erosion was "the widespread perception that IPOs are parceled out disproportionately to a few, favored investors, be they large institutions, powerful individuals or 'friends and family' of the issuer,"[16] a practice commonly called spinning.[17]

Among the committee's resultant recommendations was for the securities industry to develop alternatives to the orthodox bookbuilding method.[18] Through face-to-face meetings and road show presentations,[19] underwriters conduct price discovery with prospective investors about an issuer's offering. Based on these investors' level of interest, underwriters "build a book" of orders for stock and price it.

Instead the committee endorsed further exploration of what is conventionally referred to as the Dutch auction IPO method (Dutch IPO).[20] In lieu of the role underwriters play in bookbuilding a Dutch IPO utilizes an auction to conduct price discovery. Prospective investors communicate via bids the number and price of shares demanded. Successful bids are determined by starting with the highest price and then moving downward until investor demand equals the total amount of securities offered, or the clearing price.[21] All shares are awarded at the same price, which is based on the lowest successful bid;[22] and excess demand for shares results in a pro rata distribution. Accordingly, the Dutch IPO represents an alternate mechanism by which "pricing and

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[16] *Id.* at 2.

[17] *See, e.g.*, Sean J. Griffith, *Spinning and Underpricing: A Legal and Economic Analysis of the Preferential Allocation of Shares in Initial Public Offerings*, 69 BROOK. L. REV. 583, 586 (2004) ("'[S]pinning' refers to the preferential allocation of the right to buy in an IPO."). Griffith's argument, *see infra* Part I.B, utilizes a narrow conception of spinning that is restricted to only preferential "allocation decisions made by the managing underwriters and other members of the underwriting syndicate" since "the issuer's allocation decision influence a miniscule proportion of the total offering," Griffith, *supra*, at 586 & n.7. Spinning, however, also can include preferential allocations to institutional investors, which is the broader conception used here.

[18] For an overview of the bookbuilding process, see generally Katrina Ellis et al., *A Guide to the Initial Public Offering Process*, 3 CORP. FIN. REV. 14 (1999). *See also infra* notes 63-68 and accompanying text.

[19] *See infra* note 65.

[20] *See, e.g.*, NASD, *NASD Approves Rules to Reform IPO Process* (Nov. 24, 2003) (indicating the NASD's encouraged "use of auction systems, such as the Dutch auction system or a similar system to collect indications of interest to help establish the final IPO price"), *available at* http://www.nasd.com/web/idcplg?IdcService=SS_GET_PAGE&ssDocName=NASDW_002817 (last visited Feb. 1, 2006).

[21] *See, e.g.*, Lucas C. Townsend, Comment, *Can Wall Street's "Global Resolution" Prevent Spinning? A Critical Evaluation of Current Alternatives*, 34 SETON HALL L. REV. 1121, 1163-64 (2004) ("Eventually, the issuer will arrive at the bid that depletes the shares in the offering. This bid determines the 'clearing price,' which is the price that the accepted bidders will pay for their shares."). *See also infra* note 262 and accompanying text.

[22] Unsuccessful bidders receive nothing. In theory a pure Dutch IPO would set the final offering price equal to the clearing price. In practice issuers conduct a modified Dutch auction in which they have discretion to set the clearing price, which may or may not be equal to the lowest bid as well as the final offering price. *See infra* notes 260-267, 274-276, and accompanying text.

allocation are removed from the realm of issuer and underwriter discretion. . . . IPOs conducted through a true auction model should not experience the enormous aftermarket price spikes that fueled the abuses of the bubble period."[23] While refusing to endorse the Dutch IPO as a replacement for the bookbuilding method,[24] the committee concluded that auctions might be an intriguing way to promote more accurate and transparent IPO pricing.[25]

That intrigue found its way to Sergey Brin and Larry Page, the iconoclastic co-founders of Google, Inc. (Google).[26] In August, 2004 the company ruffled Wall Street's feathers by announcing that its widely-anticipated offering would be a Dutch IPO.[27] Brin and Page justified their decision to utilize this unorthodox method by stating:

> It is important to us to have a fair process for our IPO that is inclusive of both small and large investors. It is also crucial that we achieve a good outcome for Google and its current shareholders. This has led us to pursue an auction-based IPO for our entire offering. Our goal is to have a share price that reflects an efficient market valuation of Google that moves rationally based on changes in our business and the stock market.[28]

The co-owners thus believed that a Dutch IPO would be a more efficient and fair way to go public than bookbuilding.

That belief never materialized for Google. Just days before going public, the company lowered the final offering price by exercising a largely unnoticed right to value the stock as Google and its underwriters saw fit.[29] By most accounts this was a shrewdly calculated move to generate market enthusiasm for an otherwise sloppily executed IPO.[30]

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[23] IPO ADVISORY COMM., REPORT, *supra* note 14, at 9; *see also* Coffee, *supra* note 13, at 5 (opining that an auction represents the "logical counter-reaction" to underpricing and spinning). *But see generally* Alexander P. Ljungqvist & William J. Wilhelm, Jr., *IPO Allocations: Discriminatory or Discretionary?*, 65 J. FIN. ECON. 167 (2002) (finding that discretionary IPO allocation policies are generally beneficial for issuers, institutional investors, and investment bankers).

[24] *See* IPO ADVISORY COMM., REPORT, *supra* note 14, at 9 ("The market, and not regulators, should determine whether a Dutch auction or another method is desirable for a particular IPO.").

[25] Notably, the committee did not regard the Dutch IPO method as a way to eliminate abusive allocation practices. *See id.* at 3, 10-13.

[26] *See infra* note 240 and accompanying text.

[27] Google, however, was not the first firm to conduct a Dutch IPO. *See infra* note 296 and accompanying text.

[28] Google, Inc., *Amendment No. 9 to Form S-1 Registration Statement* 31 (filed with SEC on Aug. 18, 2004) (Letter from the Founders: "An Owner's Manual" for Google's Shareholders) [hereinafter Google, *Amended Form S-1*], *available at* http://www.sec.gov/Archives/edgar/data/1288776/000119312504142742/ds1a.htm.

[29] *See id.* at 34 ("Understand that we may modify the price range and the size of our offering multiple times in response to investor demand.").

[30] Kevin J. Delaney, *Google IPO Revisited: Insiders Got Choice Other Sellers Didn't*, WALL ST. J., Aug. 16, 2005, at A11 (referencing "a string of events in the spring and summer of 2004, including Google missteps, [that] cooled some investors' thirst for its shares"); *see also infra* notes 270-271 and accompanying text.

The move worked. During the first day of public trading Google's shares changed hands 22 million times and appreciated in value 18.1 percent,[31] exceeding the average for traditional IPOs during that year as well as during the past twenty-five years.[32] Moreover, the auction left many bidders frustrated with mysteriously low allocations.[33] By most accounts Google's IPO largely failed to deliver on the efficient and egalitarian objectives that initially had made it the darling of the investing public.[34] Google's experience may be, at best, a cautionary tale of how *not* to conduct a Dutch IPO,[35] and, at worst, an incomplete catalog of problems that can plague this alternative IPO method.

None of this, however, has deterred support for Dutch IPOs. Commentators instead have stylized Google as a negative case study:

> Had the Google IPO been viewed as an unambiguous success, there is no doubt that it would have been followed by a flood of additional Dutch auction IPOs. . . . I expect to see noteworthy Dutch auction IPOs executed in the future, though at a slower rate of adoption than if the outcome had been an indisputable triumph. In my opinion, the future use of the Dutch auction for IPOs was never predicated on the success of this particular deal.[36]

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[31] *See infra* notes 278-279 and accompanying text (Table 3, Google IPO Returns, 2004-2005).

[32] *See infra* notes 69-74 and accompanying text (Table 1, IPO Returns, 1980-2005).

[33] *See, e.g.*, Tom Petruno, *Some Investors Feel Shorted by Google*, L.A. TIMES, Aug. 25, 2005, at C1 ("'We were frustrated about our allocation of shares,' which amounted to about 25% fewer shares than the firm hoped its winning bid would have brought it . . . .") (quoting Connor Browne, portfolio manager at Thornburg Investment Management).

[34] *See, e.g.*, Andrew Wahl, *'To Google' Has New Meaning*, 77 CAN. BUS. 21, 21 (2004) ("Rather than being a catalyst for other dot-com IPOs and the tech market in general, though, Google over-promised, underperformed, and taught everyone, including themselves, some good lessons."). Not everyone, however, believes Google's IPO was a failure. William R. Hambrecht, established advocate of the Dutch IPO, has opined that: "'I think it worked,' he said. 'Think about Google's objectives. It wanted its 100 million user base to have access to its IPO and it did that. It wanted to get rational price discovery, and it did that too.'" Joseph Nocera, *Two Cheers for the Google IPO*, 150 FORTUNE 42, 42 (Sept. 6, 2004) (quoting William R. Hambrecht); *cf.* Victor Fleischer, *Brand New Deal: The Google IPO and the Branding Effect of Corporate Deal Structures*, 103 MICH. L. REV. (forthcoming 2006) (manuscript at 20) ("Despite [ ] apparent inefficiencies, the Google IPO was a success on its own terms. The IPO became a branding moment for Google. . . . From a corporate finance perspective, the deal was at best mediocre. From a marketing perspective, it was simply brilliant."), *available at* http://ssrn.com/abstract=790928.

[35] *See infra* Part III.A.

[36] Laurie Simon Hodrick, *Google's IPO: A Dutch Auction Works, If You Let It*, HERMES 1 (Fall 2004); *see also Lessons of Google's Dutch Auction*, http://www.alwayson-network.com/comments.php?id=P5476_0_6_0_C (Aug. 20, 2004) (quoting Jay R. Ritter, a finance professor who recommended the Dutch IPO method to Google and advised it) ("Is the world any different because Google chose to use a Dutch auction instead of relying on the more traditional approach through investment banks? Believe it or not, Ritter doesn't think so. . . . A difference that makes no difference is not a difference. . . . Ritter believes the Dutch auction was a success in that it was not a

Similarly, while conceding that Google "did not unleash the power of a true Dutch auction to create market pricing for the original IPO shares,"[37] some have maintained that "[w]ithout having Google go public in an alternative universe, critics cannot say decisively that the auction mechanism failed because it underpriced the offering."[38] The hope, according to these Dutch IPO proponents, is that "powerful issuers such as Google can help force the market for underwriting IPOs adapt to a more issuer-friendly system," a "new paradigm" of online IPO auctions to replace the traditional bookbuilding method.[39]

The case for shifting to this alternate IPO method rests on three tenets. First, a Dutch IPO represents a more democratic process by providing all investors, individual or institutional, with an opportunity to purchase shares before they debut on the market.[40] Second, a Dutch IPO

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failure."); *infra* Part III.B. A few months earlier, however, Hodrick evidently saw Google's IPO quite differently: "Potentially this IPO is incredibly important. . . . If it is deemed a success, it really opens a new avenue for issuing equity." *European Investors Shut Out of Google IPO*, http://www.dw-world.de/dw/article/0,,1284420,00.html (Mar. 8, 2004).

[37] Christine Hurt, *Moral Hazard and the Initial Public Offering*, 26 CARDOZO L. REV. 711, 768-69 (2005) [hereinafter Hurt, *Moral Hazard*]. In a subsequent article Hurt seemingly distances herself from this position, obliquely referencing "[m]any detractors of the traditional bookbuilding mechanism [that] declared that the Google auction foreshadowed an upheaval in the cliquish investment bank industry." Christine Hurt, *What Google Can't Tell Us About Internet Auctions (And What It Can)*, 37 TOLEDO L. REV. (forthcoming 2005) (manuscript at 1), *available at* http://ssrn.com/abstract=753625 [hereinafter Hurt, *What Google Can't Tell Us*]. Hurt likens Google's auction to "Harry Potter's mirror at Hogwarts that shows the observer what the observer wants to see." *Id.* (manuscript at 36). The problem, as Hurt acknowledges, is that "in the year since the Google auction, only two other issuers have launched an online IPO." *Id.*; *see also infra* notes 308-310 and accompanying text (Table 4, OpenIPO Returns, 1999-2005). With the benefit of this hindsight, Hurt perforce concedes that Google's auction "cannot be used to herald an immediate sea change in the bookbuilding IPO market." Hurt, *What Google Can't Tell Us*, *supra* (manuscript at 1). Nevertheless, like Hodrick, Hurt believes a silver auction lining exists within Google's dark IPO cloud, suggesting that it "will only assist other issuers in negotiating with underwriters for alternative offering mechanisms." *Id.*

[38] *Id.* (manuscript at 28). *But see generally* Gregory Mitchell, *Case Studies, Counterfactuals, and Causal Explanations*, 152 U. PA. L. REV. 1517 (2004) (cautioning against casual use of counterfactual thought experiments as causal hypotheses). Commentators are divided about whether the bookbuilding method would have generated a different result for Google. *Compare, e.g.*, Fleischer, *supra* note 34 (manuscript at 19) ("If Google had done a traditional IPO, the offering price would likely have been higher."), *with* Hodrick, *supra* note 36, at 1 ("It is important to note that many of the hurdles faced in the Google IPO would still have been problematic had Google instead chosen to use a standard firm commitment underwriting. . . . These challenges, and not the Dutch auction, were sources of downward pressure on the offer's demand.").

[39] Hurt, *Moral Hazard*, *supra* note 37, at 789; *see also id.* at 765 n.300 (citing approvingly Carolyn Said, *Quattrone's Trial: A Catalyst for Change*, S.F. CHRON., Oct. 26, 2003, at I1 (describing Google's Dutch auction IPO as reflective of the shift in Silicon Valley to "a new world order" and not the "favoritism and cronyism" of 1999)).

[40] *See, e.g.*, Coffee, *supra* note 13, at 5 (arguing that "individual investors should prefer Dutch Auctions, and a significant 'democratization' of the IPO process can be envisioned"); Hambrecht, *supra* note 11, at 2 (advocating greater access to all institutional and retail investors through IPOs that "would provide a broader universe of potential buyers" and "create a level playing field to match supply and demand").

is a more equitable method by eliminating preferential allocations and awarding one offering price to all successful bidders.[41] And, finally, a Dutch IPO produces a more accurate price by utilizing bids to obtain actual investor valuations efficiently.[42] These rationales sustain a belief that an auction-based IPO is the "logical offering procedure for issuers who are pursuing the twin goals of minimizing their cost of capital and obtaining a shareholder base."[43] Specifically, Dutch IPOs are believed to provide "a more transparent IPO process" and "a more efficient market for IPOs," which will "transform the IPO process" and ultimately lead to "elimination of the bookbuilding method."[44]

This article cautions against such belief. Part I scrutinizes criticisms of bookbuilding that revolve around the dual phenomena of underpricing and spinning. Critics regard underpricing as a form of inefficiency that flows from an agency problem.[45] This account, however, sidesteps the more dominant account of underpricing as compensation that flows from asymmetrical information. Critics also have asserted a link between underpricing and spinning, in which the former phenomenon feeds into the latter.[46] This link, however, relies on limited data and largely dissolves in the face of new and proposed regulations. Additionally, both sets of criticisms perilously fashion policy prescriptions from anecdotal and statistical evidence based on the brief internet bubble period, which involved anomalous dynamics that do not apply to the current market.

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[41] *See, e.g.*, Hurt, *Moral Hazard*, *supra* note 37, at 769; Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 8) (same). *See also* W.R. Hambrecht + Co., *OpenIPO: How It Works*, http://www.wrhambrecht.com/ind/auctions/openipo/index.html# (last visited Feb. 1, 2006) ("Shares are allocated in an equal and impartial way by the auction process. There is no preferential allocation. . . . All individual and institutional investors pay the same price per share.").

[42] *See, e.g.*, Shane Kite, *Google Goes Dutch, Rocking IPO Sector*, 17 BANK TECH. NEWS 27, 27 (Aug. 2004) ("Dutch auctions, say supporters, offer a truer price based on more accurate demand of a wider market, because the issuance is open to any potential shareholder with an Internet connection, instead of select institutional accounts favored by individual underwriters."). *See also* Google, *Amended Form S-1*, *supra* note 28, at 31 (justifying decision to go public with an auction-based IPO because it would generate "a share price that reflects an efficient market valuation of Google").

[43] Coffee, *supra* note 13, at 5.

[44] Hurt, *Moral Hazard*, *supra* note 37, at 714, 769. Hurt argues that the root of these evils is the bookbuilding method: "If the bookbuilding approach is eliminated, all of the abuses of that system will be eliminated as well. The underwriter would have no ability to underprice and no ability to handpick beneficiaries of built-in profit." *Id.*; *see also infra* Part I.A. To be sure, commentators have been attacking bookbuilding and underpricing for some time. *See, e.g.*, Jonathan A. Shayne & Larry D. Soderquist, *Inefficiency in the Market for Initial Public Offerings*, 48 VAND. L. REV. 965, 976-77 (1995) (contending IPO pricing practices have "a serious negative impact on privately-held companies that may wish to go public, as well as on securities firms that do underwritings"). Since the internet bubble burst, however, dissatisfaction with the existing system has intensified and gained a larger audience.

[45] *See infra* Part I.A.

[46] *See infra* Part I.B.

Part II delineates a well-known mechanism for bridging asymmetrical information problems, auctions. A review of voluminous economic and financial literature reveals differences between the familiar English, or ascending-bid, and Dutch, or descending-bid, auctions.[47] Specifically, as compared to their English counterparts, Dutch auctions permit only a less dominant Nash strategy[48] and may generate inferior revenue. Additionally, a problem inherent in any auction is its susceptibility to fraud in the form of bidding rings.[49] Although difficult to detect and undermine,[50] such rings are remarkably effective in enforcing themselves.

Part III evaluates the case for auction-based IPOs. First, three data sets are presented to determine whether this alternative method is a superior way to eliminate or mitigate underpricing.[51] The first data set is Google's IPO, whose first-day and one-year returns far exceed that of all other IPOs over the same time period; various peculiarities about Google's offering, however, make it a limited case study. A far more comprehensive and instructive data set comes from a lesser known variant of descending-bid auctions known as the *Mise en Vente*, or French auction; like Google's IPO, French auctions experience underpricing levels that on average compare unfavorably to bookbuilding in France and the U.S. The final data set concerns OpenIPO, a patented online auction format by W.R. Hambrecht + Co. (Hambrecht);[52] while generally outperforming traditional IPOs over the same timeframe, OpenIPOs tend to price shares less accurately in larger offerings and suffer from dramatic price changes over time. Second, models and evidence are presented to demonstrate how auction-based IPOs are uniquely vulnerable to various manipulative strategies and bidding rings.[53] Collectively, these empirical and theoretical analyses reveal the claims cited in support of the auction-based IPO to be more mythical than manifest.

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[47] *See infra* Part II.A.

[48] *See, e.g.*, Francesco Parisi & Catherine Sevcenko, *Treaty Reservations and the Economics of Article 21(1) of the Vienna Convention*, 21 BERK. J. INT'L L. 1, 12 n.60 ("A party's Nash strategy is the conditional best response to the opponent's choice of strategy (i.e., it is the strategy that will make the player better off than all other courses of action, given the opponent's move).").

[49] *See infra* Part II.B.

[50] *Cf.* ROUNDERS (Miramax 1998) ("Listen, here's the thing. If you can't spot the sucker in the first half hour at the table, then you *are* the sucker.") (emphasis in original) (Matt Damon aka Mike McDermott).

[51] *See infra* Part III.A.

[52] *See, e.g.*, Lisa Branstein & Nick Wingfield, *New Company Aims to Shift IPO Playing Field*, WALL ST. J., Feb. 8, 1999, at C1. *See also infra* note 296.

[53] *See infra* Part III.B.

I. INITIAL PUBLIC OFFERINGS

Issuers overwhelmingly use the bookbuilding method to go public. Through road shows and meetings underwriters collect information from prospective investors to determine an offering price. Correspondingly, the dominant metric for IPO performance is pricing. Over the past twenty-five years the IPO shares were underpriced on average by 17.4 percent.[54] During the 1999-2000 internet bubble period, however, underpricing averaged 63.3 percent.[55]

Since that bubble burst commentators have advanced complex criticisms of bookbuilding. One strand charges underwriters as agents that underprice shares as part of a larger "pump-and-dump" scheme to benefit themselves and managers. Another strand charges underpricing as part of a self-perpetuating cycle that involves spinning shares to certain investors. This Part assesses these criticisms in light of empirical data, finance theory, and legal regulations.

A. *Underpricing Underwriters*

An IPO is a complex process. Issuers go public predominantly to raise working capital as well as to generate prestige and publicity.[56] Going public also can appreciate a company's net worth, permit expansion through acquisition of other businesses, and stimulate future financing opportunities.[57] And raising public equity can be more attractive than leveraging the firm for loans, which may restrict its capacity to pursue high-risk and high-yield opportunities.[58]

Though these objectives may vary, an IPO serves two primary constituencies. An IPO facilitates the ability of an issuer's shareholders to diversify their holdings and exit.[59] And an IPO facilitates the ability

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[54] *See infra* notes 69-74 and accompanying text (Table 1, IPO Returns, 1980-2005).

[55] *See infra* notes 149-150 and accompanying text (Table 2, Internet Bubble IPO Returns, 1998-2001).

[56] *See, e.g.*, JAMES B. ARKEBAUER WITH RON SCHULTZ, CASHING OUT: THE ENTREPRENEUR'S GUIDE TO GOING PUBLIC 4 (1991) (citing a 1985 study by John E. Young of 562 companies that went public, in which "the majority of CEOs cited [these] two fundamental reasons for going public"). *But see, e.g.*, Jay R. Ritter & Ivo Welch, *A Review of IPO Activity, Pricing, and Allocations*, 57 J. FIN. 1795, 1796 (2002) ("Nonfinancial reasons, such as increased publicity, play only a minor role for most firms" in their decision to go public.).

[57] *See, e.g.*, THOMAS LEE HAZEN, THE LAW OF SECURITIES REGULATION § 3.12[2], at 104-05 (5th ed. 2005) ("Advantages of Going Public").

[58] *See, e.g.*, Marco Pagano et al., *Why Do Companies Go Public? An Empirical Analysis*, 53 J. FIN. 27, 39 (1998) ("By gaining access to the stock market and disseminating information to the generality of investors, a company elicits outside competition to its lender and ensure a lower cost of credit, a larger supply of external finance, or both . . . .").

[59] *See, e.g.*, DAVID P. SUTTON & M. WILLIAM BENEDETTO, INITIAL PUBLIC OFFERINGS: A STRATEGIC PLANNER FOR RAISING EQUITY CAPITAL 15 (1988) ("Added financial stability from the raising of needed capital, is by far the most important reason

of an issuer's managers to raise funds for new projects.[60] These rationales are not mutually exclusive,[61] but when they conflict, managerial pursuit of new projects dominates diversification of shareholder portfolios.[62]

And managers clearly prefer the bookbuilding method for IPOs. The vast majority of IPOs utilize underwritten financing,[63] and overwhelmingly on a firm-commitment basis,[64] whereby underwriters assume the risk of distribution. During the registration waiting period underwriters conduct face-to-face meetings and road shows with prospective investors.[65] Within these meetings and shows underwriters offer investors valuable information about the issuer in exchange for their superior information about private valuations, the issuer's competition, and the market in general.[66] This is because "investors have no incentive to reveal positive information before the stock is sold."[67]

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for going public. . . . By going public, officers, directors, and early shareholders have a way of exiting from the company and knowing approximately what they will get.").

[60] *See, e.g.*, HAZEN, *supra* note 57, § 3.12[2], at 105.

[61] Indeed, long-term shareholders may prefer reinvestment of an IPO's proceeds over dividends, while managers conversely may prefer going public to divest themselves of some ownership in the firm. *See, e.g.*, Kevin Rock, *Why New Issues Are Underpriced*, 15 J. FIN. ECON. 187, 195 (1986). *But see, e.g.*, Hurt, *Moral Hazard*, *supra* note 37, at 721 ("[T]raditional IPO theory has not separated the founders from the issuer as an entity; however, the founders and the issuer may have different short-term interests in the IPO scenario.").

[62] *See, e.g.*, ARKEBAUER WITH SCHULTZ, *supra* note 56, at 5.

[63] *See, e.g.*, Hurt, *Moral Hazard*, *supra* note 37, at 733 ("In the United States, the dominant method of distributing IPO shares is the bookbuilding method.").

[64] *See, e.g.*, LOUIS LOSS & JOEL SELIGMAN, SECURITIES REGULATION 76 (3d ed. 1998) ("For some time, the most prevalent type of underwriting has been the 'firm commitment' variety."); Alexander, *supra* note 6, at 68 n.190 (noting that firm-commitment underwritings "make up over 95% of IPOs"). Alternatively, issuers may enlist underwriters on a best-efforts basis, which does not involve purchase of the issue and thus "is not really underwriting; it is simply merchandising." LOSS & SELIGMAN, *supra*, at 66; *see also* Ann E. Sherman, *Best Efforts v. Firm Commitment Initial Public Offerings: Evidence on the Market Feedback Theory*, 2 REV. PAC. BASIN FIN. MKTS. & POLICIES 399 (1999) (finding that smaller and younger offerings tend to utilize best-efforts underwritings).

[65] *See, e.g.*, IPO ADVISORY COMM., REPORT, *supra* note 14, at 20 ("Roadshows have traditionally been considered a key opportunity for large, primarily institutional, investors to gather additional information about IPO issuers, enjoy face-to-face exposure to senior management and learn management's view of the most important aspects of the company and the offering. Issuers and underwriters place great emphasis on roadshows, since roadshow attendees will likely constitute the bulk of the issuer's shareholder base once the company has gone public. Many large investors will not participate in IPOs unless they are provided an opportunity to meet and evaluate management during the roadshow.").

[66] *See, e.g.*, Rock, *supra* note 61, at 187 (suggesting that investors may be asymmetrically well-informed about extra-firm factors).

[67] Lawrence M. Benveniste & Paul A. Spindt, *How Investment Bankers Determine the Offer Price and Allocation of New Issues*, 24 J. FIN. ECON. 343, 344 (1989).

Underwriters then use this information to construct a demand curve that eventually results in an offering price.[68]

Correspondingly, the most robust index of IPO performance is accurate pricing of shares. Specifically, IPOs are evaluated by the spread between a share's debut and closing prices on the first-day of trading. Table 1 summarizes IPO activity over the past twenty-six years:

TABLE 1
U.S. IPO RETURNS, 1980-2005[69]

YEAR[70]	OFFERINGS PER YEAR[71]	AVG. FIRST-DAY RETURN	AVG. 3-YR. RETURN[72]
1980-84	219.2	7.6%	23.8%
1985-89	256.8	6.0%	18.1%
1990-94	340.2	11.2%	45.1%
1995-99	487.0	28.1%	19.2%
2000-04	158.0	33.1%	(36.8)[73]
2005	169.0	9.8%	---
MEAN	287.9	17.4%	22.2%
MEDIAN[74]	337.5	34.8%	31.2%

[68] *See, e.g.*, Daily et al., *supra* note 3, at 274 ("The road show is designed to gauge the anticipated demand for the firm's stock and serves as a key input in the investment banker's final determination of the price at which the firm's stock will initially trade.").

[69] Underpricing is hardly exclusive to domestic IPOs. Indeed, "[w]ithin world markets the underpricing averages tend to be somewhat higher–a result that is often explained by differences in the perceived risk between domestic and international markets." Craig S. Galbraith et al., *Offering Prospectuses, Competitive Strategies, and the Pricing of Initial Public Offerings*, 6 J. PRIVATE EQUITY 31, 31-32 (2003). *See also infra* note 328 and accompanying text.

[70] Data for 1980-2003 Offerings and Average First-Day Return from Ritter, *supra* note 2, at 9.

[71] The 1980-2003 data excludes American Depository Receipt, Best Efforts, Closed-End Fund, Partnership, Real Estate Investment Trust, Regulation A, and Unit offerings as well as those with an offer price less than $5.00. Ritter, *supra* note 2, at 9. These exclusions are justified to create a data set comprised of "almost all IPOs of domestic operating companies that are large enough to be of interest to institutional investors." Tim Loughran & Jay Ritter, *Why Has IPO Underpricing Changed over Time?*, 33 FIN. MGMT. 5, 12-13 (2004). Moreover, the "smaller deals also have a lot of fraud, and account for most of the poor long-term performance." E-mail from Jay R. Ritter, Cordell Professor of Finance, University of Florida Warrington College of Business, to Peter B. Oh, Assistant Professor of Law, William Mitchell College of Law (July 29, 2005) (on file with author). The 2004-05 data does not include any offerings with an offer price less than $5.00.

[72] Data for Three-Year Return from Ritter, *supra* note 2, at 13. This data excludes American Depository Receipt, Bank and S&L, Closed-End Fund, Real Estate Investment Trust, and Unit offerings as well as those with an offer price less than $5.00. *See* Ritter, *supra* note 2, at 9.

[73] This is the three-year return from IPOs in 2000-02.

[74] The median for returns was calculated with absolute values.

Most studies of underpricing focus on the first-day returns as a superior gauge of an offering's valuation.[75] While hardly a perfect measure of an offering price's accuracy,[76] the average first-day return for IPOs was 6.8 percent from 1980 to 1989, shot up to 21.1 percent from 1990 to 1999, and since 2000 has been 29.0 percent.[77]

These statistics are rather distorted, however, by the 1999-2000 internet bubble period. During that brief two-year span there were 872 IPOs with a staggering average first-day return of 63.3 percent.[78] By way of contrast, the average first-day return was 14.7 percent from 1990 to 1998, and has been 11.3 percent from 2001 to the present.[79] Examining the aggregate money issuers left on the table provides a similarly stark contrast. Internet bubble issuers left $62.4 billion ($32.1 billion per a year) on the table, whereas issuers left only $28.1 billion from 1990 to 1998 ($3.1 billion per a year), and a mere $11.6 billion from 2001 to 2005 ($2.3 billion per a year).[80]

While simple to document, underpricing remains an enigmatic problem of asymmetrical information. Empirical studies yield mixed results about what *ex ante* indicia correlate reliably with underpricing.[81] And commentators are divided over whether underpricing evinces that issuers have an informational advantage over prospective investors,[82] or vice versa.[83]

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[75] *See supra* note 3.

[76] Irrational exuberance and macro-conditions are but some of the external factors that can affect how a stock does on the first day of trading. Over time these factors and firm-related developments assume a more prominent role in explaining a stock's price, and thus first-day returns represent a less distorted indicia of valuation.

[77] Different sets of offerings were excluded from the numbers for 2000-03 versus 2004-05, and so comparisons between their average first-day returns are imperfect. *See supra* notes 70-71.

[78] *See infra* notes 149-150 and accompanying text (Table 2, Internet Bubble IPO Returns, 1998-2001).

[79] Ritter, *supra* note 2, at 9; *see also supra* notes 69-74 and accompanying text (Table 1, U.S. IPO Returns, 1980-2005).

[80] Ritter, *supra* note 2, at 2; *see also generally* Ritter, *Money Left by Firm*, *supra* note 5, at 1; Jay Ritter, *Money Left on the Table, by Year* (Dec. 2003), http://bear.cba.ufl.edu/ritter/monyear.pdf [hereinafter Ritter, *Money Left by Year*]. The market for IPOs precipitously dropped from 2001 to 2003. *See supra* notes 149-150 and accompanying text (Table 2, Internet Bubble IPO Returns, 1998-2001). Perhaps a better measure is 2004, during which issuers left an aggregate $3.88 billion on the table. Regardless, at no recent time have IPO activity and underpricing been on a level even approaching that of the internet bubble period.

[81] *See, e.g.*, Daily et al., *supra* note 3, at 272 ("While there is an extensive, and growing, body of empirical research investigating IPOs, the extant literature reveals little consistency in reported findings when focusing on the correlates of underpricing; i.e., those *ex ante* factors associated with underpricing.").

[82] *See generally* Franklin Allen & Gerald R. Faulhaber, *Signaling by Underpricing in the IPO Market*, 23 J. FIN. ECON. 303 (1989).

[83] *See, e.g.*, John A. Garfinkel, *IPO Underpricing, Insider Selling and Subsequent Equity Offerings: Is Underpricing a Signal of Quality?*, 22 FIN. MGMT. 74 (1993).

Signaling theory provides a "dominant" positive account of IPO underpricing.[84] Underpricing can be regarded as a manifestation of poor or deficient information about an offered stock's value.[85] To be sure, issuers and investors engage in some decision-making with imperfect information.[86] Issuers, however, can combat such imperfections through observable and unique signals that convey a more accurate valuation of an issuer.[87] Within the context of IPOs these signals primarily come in the form of the issuer's prospectus,[88] which provides investors insights into a firm, and thus reduces risk and speculation about the IPO.[89]

Signaling theory also suggests a normative account of underpricing, where the most controversy exists. Within the financial literature "there is little consensus regarding whether underpricing is a preferred or unwelcome outcome of the IPO process."[90] One interpretation of

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[84] Daily et al., *supra* note 3, at 276; *see also id.* at 275-76 (citing "the risk-averse underwriter hypothesis, the asymmetric information hypothesis, the band-wagon hypothesis, and the ownership dispersion hypothesis" as competing positive accounts of IPO underpricing). Agency-based explanations of underpricing in particular have enjoyed some prominence. *See, e.g.*, Richard M. Robinson et al., *Underpricing and IPO Ownership Retention*, 28 J. ECON. & FIN. 132 (2004) (presenting empirical support for an agency-based explanation of IPO underpricing). Even proponents of agency-based explanations, however, acknowledge that the "best established of these [theories of underpricing] are the asymmetric information based models." Ljungqvist, *supra* note 4, at 2; *see also* Ritter & Welch, *supra* note 56, at 1803 ("One way of classifying theories of underpricing is to categorize them on the basis of whether asymmetric information or symmetric information is assumed.").

[85] *See generally* Stephen Ross, *The Determinants of Financial Structure: The Incentive Signaling Approach*, 8 BELL J. ECON. 23 (1977).

[86] *See, e.g.*, Sudipto Bhattacharya, *Imperfect Information, Dividend Policy, and the "Bird in the Hand" Fallacy*, 10 BELL J. ECON. MGMT. SCI. 259 (1979) (examining cash dividends as signals of expected cash flows to investors with imperfect information). There is also a separate strand of studies about how issuers and investors engage in decision-making under uncertainty. *See, e.g.*, James A. Fanto, *Braking the Merger Momentum: Reforming Corporate Law Governing Mega-Mergers*, 49 BUFF. L. REV. 249 (2001) (describing overoptimism in issuers' executives about mergers); Michael Hertzel et al., Long-*Run Performance Following Private Placements of Equity*, 57 J. FIN. 2595 (2002) (describing overoptimism in investors about IPOs). There are, however, serious reservations about the methodological soundness and practical consequences of such applications of behavioral theory. For instance, Greg Mitchell has argued that:

> [A] great deal of psychological research . . . brings into question the claims of the [behavioral] theorists regarding the fallibility of judgment and decision making in experimental settings and qualifies the generalizations that can be safely drawn from this research.

Gregory Mitchell, *Taking Behavioralism Too Seriously? The Unwarranted Pessimism of the New Behavioral Analysis of Law*, 43 WM. & MARY L. REV. 1907, 1936 (2002); *see also infra* note 91.

[87] *See generally* A. MICHAEL SPENCE, MARKET SIGNALING: INFORMATIONAL TRANSFER IN HIRING AND RELATED SCREENING PROCESSES (1974).

[88] *See generally* Galbraith et al., *supra* note 69. This version of signaling theory is premised on issuers having an information advantage over prospective investors.

[89] *See, e.g.*, James C. Spindler, *IPO Liability and Entrepreneurial Response* (May 2005) (contending section 11 liability effectively provides shareholders with a put option on IPOs that allocates undue risk on issuers, who may act preemptively through deliberate underpricing and risk-spreading), *available at* http://ssrn.com/abstract=719768.

[90] Daily et al., *supra* note 3, at 274.

underpricing is that it manifests informational inefficiencies.[91] This in turn has prompted some to advocate improved and increased disclosure.[92]

But most of the criticism has been directed at underwriters. Some commentators cite the problem that issuers "are at an informational or bargaining disadvantage relative to the underwriters who are privy to the market demand for the IPO shares,"[93] which "often leads to the underpricing of initial public offerings."[94] Others contend that underpricing is symptomatic of a massive "pump-and-dump"[95] scheme:

> This IPO price curve is the expected result of a concerted effort of the investment banks and other industry insiders to extract wealth from the investing public by acquiring stock, hyping that stock, and then selling that stock.[96]

According to this account, underwriters and managers unduly engage in underpricing to increase the probability that pre-IPO allocations will be

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[91] *See, e.g.*, James C. Spindler, *Research Analyst Conflicts, the Market for Underwriting Business, and Credible Signaling* (July 2004) (manuscript at 17) ("If issuers and underwriters may have positive information about themselves that they cannot disclose in the prospectus due to overbearing liability, they face an adverse-selection, or 'lemon,' problem in marketing the issuer's securities to investors . . . ."), *available at* http:///ssrn.com/abstract=564381; *see also generally* George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488 (1970). This implicates the question of the extent to which stock price accurately reflects an issuer's value. *See, e.g.*, Reinier H. Kraakman & Ronald J. Gilson, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549 (1984). Among the more serious challenges to the Efficient Markets Capital Hypothesis have come from legal decision theory, otherwise known as behavioral law and economics. *See, e.g.*, Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias*, 28 J. CORP. L. 715 (2003) (incorporating insights from legal decision theory into their MOME thesis). *But see, e.g.*, Burton G. Malkiel, *The Efficient Market Hypothesis and Its Critics*, 17 J. ECON. PERSP. 59, 80 (2003) ("I suspect that the end result [of the behavioral theory influx] will not be an abandonment of the belief of many in the profession that the stock market is remarkably efficient in its utilization of information."); *supra* note 86.

[92] *See, e.g.*, Royce de R. Barondes, *Adequacy of Disclosure of Restrictions on Flipping IPO Securities*, 74 TUL. L. REV. 883 (2000). Disclosure, however, seeks to ensure only that investors possess requisite quality information about an issuer, and not that they will utilize this information properly, much less value stock accurately. *See, e.g.*, HAZEN, *supra* note 57, § 1.2[3][A], at 22 ("[F]ull disclosure provides investors with sufficient opportunity to evaluate the merits of an investment and fend for themselves.").

[93] Stephen J. Choi & A.C. Pritchard, *Should Issuers Be on the Hook for Laddering? An Empirical Analysis of the IPO Market Manipulative Litigation*, 73 U. CIN. L. REV. 179, 182 (2004).

[94] Anita Indira Anand, *The Efficiency of Direct Public Offerings*, 7 J. SMALL & EMERGING BUS. L. 433, 458 (2003). *But cf. infra* note 338 and accompanying text.

[95] *See, e.g.*, Ian Ayres & Stephen Choi, *Internalizing Outsider Trading*, 101 MICH. L. REV. 313, 334 n.65 (2002) (referencing "'pump and dump' schemes under which an investor first purchases a large quantity of a company's securities, portrays the company as favorable, and then sells the securities as the price increases").

[96] Hurt, *Moral Hazard*, *supra* note 37, at 717; *see also* Coffee, *supra* note 13, at 6 ("Such an extravagant discount cannot be justified . . . particularly when the vast majority of shares in IPOs go to a concentrated group of mutual funds and money managers.").

profitable. That profit comes in the form of personal holdings as well as reciprocal future business from prominent investors,[97] and arguably at the expense of the issuer.[98]

Underpricing, however, is better regarded as a form of compensation, and not inefficiency. The consequences of a "sticky," or unsuccessful, issue can be devastating for underwriters.[99] To be sure, they do receive a commission in exchange for assuming the actual and reputational risks of reselling shares to the public.[100] But underpricing functions as insurance against such risks.[101] A conservative offering price can increase the probability that stock will "pop" on the first day,

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[97] *See, e.g.*, Francesca Cornelli & David Goldreich, *Bookbuilding and Strategic Allocation*, 56 J. FIN. 2337, 2338 (2001) (finding that "bidders who participate in a large number of issues receive favorable treatment"). That study, however, fails to find evidence that such investors "earn profits beyond those earned by other investors." *Id.* at 2339.

[98] *See, e.g.*, Hurt, *Moral Hazard*, *supra* note 37, at 761-62 (contending that underpricing represents distorted decision-making by managers and underwriters about when to go public, on the basis that "in boom periods, more underwriters bring more issuers to market" while "[i]n cold periods, underwriters bring fewer issuers to the market"). *But see, e.g.*, Jean Helwege & Nellie Liang, *Initial Public Offerings in Hot and Cold Markets*, 39 J. FIN. & QUANTITATIVE ANALYSIS 541, 544 (2004) ("Hot and cold market IPOs do not differ in the use of discretionary accruals or by analysts' earning growth forecasts, nor do hot market IPOs have lower institutional ownership after the IPO."); Daniel L. McConaughy et al., *Agency Costs, Market Discipline and Market Timing: Evidence from Post-IPO Operating Performance*, 20 ENTREPRENEURSHIP: THEORY AND PRACTICE 43, 43 (1996) ("Entrepreneurs who bring their firms into the public securities markets maintain the pre-IPO performance of their firms. *This suggests that agency costs do not increase significantly* and that the poor post-IPO stock market performance is due more to over-optimistic investors extrapolating current growth into the future.") (emphasis added). An additional problem with this "pump-and-dump" account is that the internet bubble period did not experience any appreciable increase in the rate at which issuers went public. *See infra* notes 149-150 and accompanying text (Table 2, Internet Bubble IPO Returns, 1998-2001).

[99] *See, e.g.*, LOSS & SELIGMAN, *supra* note 64, at 80 ("The purpose of the dealer's participation in the underwriting is to ensure a rapid sale of the offering. If a rapid sale were not to occur, the issue might become 'sticky,' depressing the sales price and reducing (or eliminating) the underwriters' profit."); Griffith, *supra* note 17, at 591 ("An issue that does not sell will increase the underwriter's cost of capital, exacerbate opportunity costs, and harm the underwriter's reputation.").

[100] Underwriter fees typically range between 5-10% of an IPO's aggregate value. *See, e.g.*, Richard Mann et al., *Starting From Scratch: A Lawyer's Guide to Representing a Start-Up Company*, 56 ARK. L. REV. 773, 839 (2004). For IPOs between $20 and $80 million, underwriters almost invariably charge a seven percent commission, whose uniformity has been the subject of intense debate about possible collusion. *Compare, e.g.*, Hsaun Chi Chen & Jay R. Ritter, *The Seven-Percent Solution*, 55 J. FIN. 1105 (2000), *with* Robert S. Hansen, *Do Investment Banks Compete in IPOs?: The Advent of the "7% Plus Contract,"* 59 J. FIN. ECON. 313 (2001). *See also* Royce de R. Barondes et al., *IPO Spreads: You Get What You Pay For* (June 2000) (finding variations in commission rates that correlate to variable marketing efforts), *available at* http://ssrn.com/abstract=233146.

[101] An additional risk stems from the fact that a firm-commitment IPO is typically priced four business days prior to the stock's debut, a necessary lag that inheres a risk of decline. *See, e.g.*, Deanna L. Kirkpatrick, *The Underwriting Agreement*, *in* HOW TO PREPARE AN INITIAL PUBLIC OFFERING 277, 288 (2004).

which may entice investors to purchase all available shares.[102] Further, a pop rewards recipients of preferentially allocated shares, who are often repeat investors with considerable incidental business.[103] And a pop arguably suggests a limited basis, if any, for damages,[104] thus dissuading prospective plaintiffs from bringing claims under the Securities Act.[105]

Moreover, underpricing is governed by powerful market norms. The persistence of underpricing over time has created an entrenched expectation within investors to witness substantial first-day pops from quality IPOs:

> If, on average, an investment banker does not underprice its offerings enough, the average initial return will be too low, and uninformed investors will cease doing business with this underwriter. On the other hand, if, on average, an investment banker underprices its offering too much, so that the average initial return is too high, potential issuers will cease using this underwriter.[106]

An underwriter's objective thus is to set an offering price optimally beneath, and not equal to, its projected closing price.[107]

This objective is difficult to accomplish because of an underwriter's competing constituencies. On the one hand issuers prefer underwriters with an established track record of leaving only a limited amount of money on the table.[108] On the other hand aftermarket investors tend to

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[102] *See, e.g.*, Griffith, *supra* note 17, at 605-06 n.71 (citing results from a 2002 poll in which "over 70% of respondents agreed or strongly agreed with the statement that 'high first day returns are necessary to gain interest in the IPO.'") (quoting Patricia A. Ryan & Irv DeGraw, *A Brief Comparison of the Oct 2000-June 2002 IPO CFO Results to the 1996-1998 IPO* tbl. 7 (working paper)).

[103] *See, e.g.*, Francesca Cornelli et al., *Pre-IPO Markets* (2003) (manuscript at 2) ("In the literature, the exclusion of retail investors from bookbuilding has typically been justified by arguing that retail investors are uniformed and it is optimal to restrict the participation in bookbuilding to the (informed) institutional investors."), *available at* http://ssrn.com/abstract=548683.

[104] *See, e.g.*, Seha M. Tinic, *Anatomy of Initial Public Offerings of Common Stock*, 43 J. FIN. 789, 797-800 (1988).

[105] *See generally* Philip D. Drake & Michael R. Vetsuypens, *IPO Underpricing and Insurance Against Legal Liability*, 22 FIN. MGMT. 1 (1993). This is not necessarily an undesirable result considering the proliferation of "professional plaintiffs," whose class action suits typically result in minimal compensation to shareholders. The point here is only that underpricing arguably represents an attractive and rational way for issuers and underwriters to diminish their liability. *But see generally* Alexander, *supra* note 6.

[106] Randolph P. Beatty & Jay R. Ritter, *Investment Banking, Reputation, and the Underpricing of Initial Public Offerings*, 15 J. FIN. ECON. 213, 215 (1986).

[107] Investors also respond to the actual offering price. *See, e.g.*, Daily et al., *supra* note 3, at 280 ("[A] very modest offer price will signal little demand, little value, or both."). *But cf. infra* notes 123, 328, and accompanying text.

[108] *See, e.g.*, Richard B. Carter et al., *Underwriter Reputation, Initial Returns, and the Long-Run Performance of IPO Stocks*, 53 J. FIN. 285 (1998) (finding a strong inverse correlation between an underwriter's reputation and underpricing); Dennis E. Logue, *Premia on Unseasoned Equity Issues, 1965-69*, 25 J. ECON. & BUS. 133, 135 (1973) (examining 83 issues and finding that those "underwritten by prestigious investment bankers was 20.8 percent, whereas the average performance of issues underwritten by non-prestigious investment bankers was 52.1 percent").

view underpricing as a proxy of an underwriter's quality,[109] even though they tend to receive limited personal benefits from first-day pops.[110] Underwriters thus must negotiate between a delicate balancing act.[111]

To be sure, there is anecdotal evidence of underwriters and managers engaging in "pump-and-dump" schemes.[112] But this hardly proves a systemic defect in bookbuilding. And the arguments presented by bookbuilding's critics simply sidestep the method's broader and more established justifications.

B. *Spinning Bubbles*

Another strand of attack against bookbuilding concerns spinning. This practice of preferentially allocating pre-market IPO shares to investors is routine. Underwriters spin an estimated 79 percent of IPO shares to executives, institutional investors, politicians, as well as all of their family and friends.[113] The bulk of spun shares end up in the hands of institutional investors, who receive anywhere from 70 to 85 percent of an offering's total allocation.[114]

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[109] *See, e.g.*, Jay R. Ritter, *The "Hot Issue" Market of 1980*, 47 J. BUS. 215, 220 (1984) ("[I]ndividuals face an adverse selection problem when submitting a purchase order. If the issue is overpriced ($v < OP$), only uninformed investors will submit purchase orders."). *But see, e.g.*, Daily et al., *supra* note 3, at 277 ("The vast majority of IPO shares are not initially sold on the open market; rather, they are sold to key clients of the underwriters . . . [who] want to reduce underpricing, as it represents money left on the table.")

[110] *See, e.g.*, Daily et al., *supra* note 3, at 275 ("Uninformed investors realize that, on average, they will earn below-average returns."). This can be explained, in part, by the fact that underwriters justifiably favor "bidders who reveal information through limit prices" and those "who participate in a large number of issues," a finding that "is consistent with the argument that such investors are being compensated for the insurance they provide." Cornelli & Goldreich, *supra* note 97, at 2338-39.

[111] *See, e.g.*, Daily et al., *supra* note 3, at 277 ("Underwriters are dual agents with two key constituents in the IPO process. The first constituent is the firm whose securities the underwriters represent. The second is the client base to whom the underwriters market the IPO securities.").

[112] *See supra* note 95, 98, and accompanying text.

[113] *See, e.g.*, Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 2) ("In almost all IPOs conducted in the United States, the vast majority, almost 80 percent, of original IPO shares are pre-allocated by the underwriters of the offering.") (citation omitted); Hillary A. Sale, *Disappearing Without a Trace: Sections 11 and 12(a)(2) of the 1933 Securities Act*, 75 WASH. L. REV. 429, 441 (2000) ("Shareholders who are allowed to purchase 'in' an offering are those who are the first buyers of the securities issued. . . . This group is usually very limited, including only institutional investors, members of Congress, and those with connections to underwriters."). *See also supra* note 17.

[114] *See, e.g.*, Letter from Jane C. Sherburne, Deputy General Counsel of Citigroup, Inc., to Michael G. Oxley, Chairman of the House Committee on Finance Services, and John J. LaFalce, Ranking Member of the House Committee on Financial Services, http://financialservices.house.gov/media/pdf/citidocs_001.pdf (Aug. 26, 2002); Sale, *supra* note 113, at 441 ("[O]n average, small investors receive less than one quarter of the total shares in an IPO. In the typical IPO, the percentage of offered shares allocated to institutional investors generally ranges from 70% to 85% of the total shares.") (citation omitted). To be clear, not all of the shares institutional investors receive are spun.

Spun shares are not merely a mark of privilege, but also a potential source of profit.[115] Recipients of spun shares may either retain them for aftermarket returns or sell them at a premium to third parties, otherwise known as flipping.[116] Spinning also serves as one among many widely-sanctioned explanations for underpricing.[117] Specifically, underwriters offer shares at a lower price to influential and prominent investors as compensation for their assumption of the additional risks associated with IPOs.[118] In exchange underwriters receive a greater probability that the issue will be subscribed fully and diversity of ownership that guards against concentrated holdings by a few institutional investors.[119]

Some, however, believe a link exists between spinning, and underpricing. One prominent theory posits that: "Underpricing enables spinning by providing underwriters with a ready supply of hot IPO shares. But underpricing is also an end of spinning when hot allocations are used to induce issuer-managers to underprice their own offerings."[120] According to this "underwriter welfare maximization" calculus,[121] underwriters will discount the price of IPO shares based on the corresponding commission foregone versus the short- or long-term returns.[122] When these returns, which can come in the form of insurance against a sticky issue or protection from Securities Act liability,[123] are

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[115] *See, e.g.*, Griffith, *supra* note 17, at 587 ("[S]pinning allocations rarely, if ever, result in trading losses."). Griffith contends that "underwriters only spin shares of hot offerings–that is, those for which there is significant aftermarket demand." *Id.* at 587 n.12. An incidental benefit to receiving spun shares is acquiring the ability to meet the otherwise impossible tracing requirement imposed on antifraud claims under sections 11 and 12(a)(2) of the Securities Act of 1933. *See, e.g.*, Peter B. Oh, *Tracing*, 80 TUL. L. REV. (forthcoming 2006), *available at* http://ssrn.com/abstract =713767.

[116] *See, e.g.*, Royce de R. Barondes, *NASD Regulation of IPO Conflicts of Interest--Does Gatekeeping Work?*, 79 TUL. L. REV. 859, 884 (2005) ("Some investors who purchase stock in an IPO quickly resell the stock, known as 'flipping,' to realize the short-term gains."). Underwriters have devised a variety of anti-flipping mechanisms. *See, e.g.*, *id.* at 885-86.

[117] *See supra* Part I.A. *See also* Townsend, *supra* note 21, at 1136 ("Spinning creates an added incentive for underwriters to underprice IPOs.") (citation omitted).

[118] *See, e.g.*, Griffith, *supra* note 17, at 594, 597 ("Spinning improves the underwriter's welfare by generating goodwill on the part of the recipient of the spun shares. . . . Underwriters may also seek to use spinning allocations to win the favor of politicians and government officials."). This includes allocation to managers of private firms, on the thought that "You pay them off and expect you're going to get treated in kind when they do the transaction." Michael Siconolfi, *The Spin Desk: Underwriters Set Aside IPO Stock for Officials of Potential Customers*, WALL. ST. J., Nov. 12, 1997, at A1 (quoting Robert Messih, managing director of Salomon, Inc.) (quotation marks omitted).

[119] *See supra* notes 102-105 and accompanying text.

[120] Griffith, *supra* note 17, at 589-90; *see also* Cumming & MacIntosh, *supra* note 12, at 890 ("From a regulatory point of view, the message seems clear: extreme underpricing of new issues is likely to be associated with illicit activities such as laddering, false analyst coverage, spinning, and so on.").

[121] Griffith, *supra* note 17, at 593.

[122] *See id.* at 599 ("Underpricing will be worthwhile to underwriters on the margin provided that the value of the insurance and goodwill generated through underpricing exceeds the commission losses . . . ."); *supra* notes 102-105 and accompanying text.

[123] *See supra* notes 102-105 and accompanying text. Griffith contends that "underwriters probably only consider underpricing as insurance at [marginally] higher

sufficient, underwriters will have an incentive to underprice shares; and, akin to the "comp" system employed by casinos, these shares then can be flipped in exchange for reciprocal goodwill.[124]

In this way underpricing is believed to a necessary predicate for spinning. Unlike other pre-IPO allocation practices, spinning is conceived as a practice by which underwriters direct "allocations to *particular* individuals, usually those in positions of power and influence, rather leaving the syndicate's brokers with the discretion to dole out individual allocations to just anyone." This practice is not about playing favorites, but generating profits.[125] Underwriters allegedly spin IPO shares because they expect issuer-managers to agree to underpricing of shares.[126] Receiving these shares induces the managers of the issuer currently going public to permit underpriced shares, which can increase the likelihood of a profitable flip.[127] Receiving these shares also induces the managers of other issuers going public to retain these same spinning underwriters and permit underpriced shares.[128] Both scenarios thus involve a "complex wealth transfer,"[129] in which managers effectively employ underwriters to pocket money deliberately left on the issuer's table.[130] In this way spinning taps into the incentives for underpricing, which in turn guarantees a supply of shares that can be spun.[131]

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price levels where the increased risk of a sticky issue marginally outweighs the expected return from an incremental increase in offering price." Griffith, *supra* note 17, at 593. *But cf. generally* Roger G. Ibbotson et al., *Initial Public Offerings*, 1 J. APP. CORP. FIN. 37 (1988). (noting that firms with offering prices below $3 experience high levels of underpricing).

[124] Griffith, *supra* note 17, at 594-99.

[125] *See, e.g.*,) ("The notion that there is-or might be-a difference between paying the greens fee of a CEO/manager who accompanies the investment banker on a golf outing, on the one hand, the underwriter's practice of spinning, on the other hand, seems rather obvious.").

[126] Griffith, *supra* note 17, at 623-24. In receiving spun stock managerial shareholders arguably have breached their fiduciary duties. *See, e.g.*, William H. Donaldson, *Testimony Concerning Global Research Analyst Settlement, Statement Before the Senate Committee on Banking, Housing, and Urban Affairs*, http://www.sec.gov/news/testimony/ts050703whd.htm (May 7, 2003) (noting that spinning "raises serious questions about whether the corporate insiders who take hot IPO shares in exchange for their firms' investment banking business are breaching their fiduciary duties to their shareholders"). *See also generally* Therese M. Maynard, *Spinning in a Hot IPO-Breach of Fiduciary Duty or Business As Usual?*, 43 WM. & MARY L. REV. 2023, 2037 n.33 (2002).

[127] *See supra* note 116 and accompanying text.

[128] Griffith, *supra* note 17, at 623-24 ("By spinning underpriced shares of other issuers to their counterparts across the negotiating table, underwriters may hope to induce them to accept underpricing in their own offering.").

[129] *Id.* at 624.

[130] For issuers, however, the rationality of underpricing is less clear. As Griffith notes, "[i]ssuers lose $0.93 per dollar of underpricing. Underpricing is thus much more expensive to issuers than it is to underwriters. So why do they do it?" Griffith, *supra* note 17, at 600 (calculating the issuers' losses based on underwriters receiving their standard seven percent commission rate); *see also supra* note 100.

[131] *Id.* at 594 ("Underwriters assure themselves of a supply of shares for spinning by underpricing IPOs.").

New and proposed regulations, however, sever part of this purported link. NASD Rule 2790, "Restrictions on the Purchase and Sale of Initial Equity Public Offerings," prohibits certain "restricted persons" from receiving IPO allocations.[132] Among these "restricted persons" are broker-dealers, their affiliates and relatives, finders and fiduciaries, and portfolio managers.[133] And proposed NASD Rule 2712, "IPO Allocations and Distributions," prohibits broker-dealers and their associates from allocating shares from an IPO on a *quid pro quo* basis for past or future investment banking business, a bar that extends to directors or executives of a recent client of the underwriting syndicate.[134] These rules eliminate most forms of spinning,[135] and thus disrupt Griffith's "complex wealth transfer" account. This is because spinning no longer represents a quasi-legal means for underwriters and managers to divert offering proceeds to themselves.[136] To be sure, some diversion still may occur, but its illegality severely dampens the extent to which underwriters and managers will underprice to spin.

Moreover, the interconnection between spinning and underpricing has more conjectural appeal than empirical support. To redress what is admittedly a "poverty of direct comparative data,"[137] Sean Griffith has presented findings from three empirical studies. The first study is from Griffith himself. Using data from IPOs during 1999 to 2000 Griffith finds that eleven firms, with inside managers who allegedly spun shares, all experienced a larger degree of underpricing than the average for their counterparts.[138] The second study is by Tim Loughran and Jay Ritter, who conclude:

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[132] NASD, MANUAL (CCH), R. 2790(a) (Apr. 2005) [hereinafter NASD, R. 2790]. Rule 2790 expands the restrictions first established by the Free-Riding and Withholding Interpretation, which applied only to hot issues and thus earned the name of the Hot Issue Rule. *See* NASD, MANUAL (CCH), IM-2110-1 (Apr. 2003).

[133] NASD, R. 2790(i)(10), *supra* note 132.

[134] *See Notice of Filing of Proposed Rules Changes by the New York Stock Exchange, Inc. and the National Association of Securities Dealers, Inc. Relating to the Prohibition of Certain Abuses in the Allocation and Distribution of Shares in Initial Public Offerings ("IPOs")*, Sec. Rel. No. 34-50896, 69 Fed. Reg. 77804, 77805 (Dec. 20, 2004) [hereinafter NASD, R. 2712]. *But see* Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 5) ("Unfortunately, this proposed rule [2712] has been open for comment for three years, so the probability that it will be accepted is small."). Proposed Rule 2712 also prohibits a separate practice, known as flipping, or "the initial sale of IPO shares purchased in an offering within 30 days following the offer date of such offering," and requires the lead underwriter to disclose the names of interested institutional investors. NASD, R. 2712, *supra* note 132, at 77805-6.

[135] Neither rule prohibits directed-share plans or allocations to institutional investors, and yet, interestingly, both practices are excluded from Griffith's conception of spinning. *See supra* note 17 and accompanying text. Directed share plans are not part of the conception of spinning used here, as such plans are conducted by the issuer and constitute a small percentage of allocations. *See id.*

[136] Spinning is quasi-legal in that, as others have argued persuasively, the practice may be combated through pre-existing doctrinal frameworks. *See supra* note 126 and accompanying text; *infra* note 338 and accompanying text.

[137] Griffith, *supra* note 17, at 627.

[138] *See id.* at 626. Griffith notes certain obvious methodological caveats to this data set, specifically, that the number of IPOs with insiders is likely underinclusive and that

> As IPO underpricing increased in the 1990s . . . the ability to use hot IPOs to reward decision-makers resulted in the decision-makers seeking out underwriters with reputations for leaving money on the table, rather than avoiding these underwriters.[139]

These findings comport with the final study, by William Ljungqvist and William Wilhelm of IPOs from 1996 to 2000, that confirms "underpricing is significantly lower when insider ownership stakes are larger and less fragmented and when insiders sell more shares at the offer price."[140] From this Griffith infers that "[d]ecreased insider ownership suggests decreased manager incentives to monitor the pricing process."[141]

A closer examination of these studies, however, reveals inferential gaps. If a link exists between spinning and underpricing, the astronomical degree of underpricing within Griffith's IPO data set should be accompanied by a miniscule level of insider ownership. And Ljungqvist and Wilhelm in fact conclude that "insider percentage holdings declined over the sample period [1996-2000] . . . ."[142] But while Loughran and Ritter agree with this conclusion, they also find that, from 1999 to 2000, "CEO dollar ownership (the market value of the CEO's holdings) was substantially higher, resulting in *increased* incentives to avoid underpricing."[143]

The difference between these two findings is subtle, but significant. Unlike Ljungqvist and Wilhelm, who measure insider ownership as a percentage of total shares offered, Loughran and Ritter focus on the total monetary amount of what insiders own.[144] The latter metric would seem to exert a far greater influence on insiders' incentives to underprice; put differently, insiders who own a significant portion of the offering, but individually have small investments or expected spinning profits, may not be as motivated to risk deliberate underpricing.[145] Ultimately, Loughran and Ritter find "little support" for the Ljungqvist and Wilhelm

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the underpricing levels for these IPOs are also included within the average for all IPOs. As a result, he cautions against using "these data to compare the underpricing margins of firms engaging in underpricing to those that do not." *Id.* at 627. At the same time, however, Griffith contends that "these weaknesses of the data set make the argument for a link between spinning and underpricing stronger, not weaker." *Id.*

[139] *Id.* at 629 n.155 (quoting Loughran & Ritter, *supra* note 71, at 30); *see also* Griffith, *supra* note 17, at 585-86 ("By the end of the 1990s . . . [the] demand for IPO shares empowered the underwriter . . . to allocate shares to investors on a preferential basis.").

[140] Alexander P. Ljungqvist & William J. Wilhelm, Jr., *IPO Pricing in the Dot-Com Bubble* 2 (Feb. 2002), *available at* http://ssrn.com/abstract=295662.

[141] Griffith, *supra* note 17, at 629.

[142] Ljungqvist & Wilhelm, *supra* note 140, at 2.

[143] Loughran & Ritter, *supra* note 71, at 6 (emphasis in original).

[144] *Id.* at 21

[145] *Id.* at 19 ("It is not obvious . . . that CEO percentage ownership is as important as the market value of these shares if we want to measure the managerial benefits of a higher offer price.").

hypothesis.[146] In any event Griffith utilizes neither metric in his own data set, which simply establishes the margin of underpricing within firms that allegedly spun shares to insiders.[147]

Further, all of these empirical studies have limited extrapolative value. The purported link between underpricing and spinning rests on data from the two-year internet bubble period.[148] From 1999 to 2000 underpricing occurred on a scale that dwarfs any other recent time period:

TABLE 2
INTERNET BUBBLE IPO RETURNS, 1998-2001[149]

YEAR	OFFERINGS	AVG. FIRST-DAY RETURN	AVG. 3-YR. RETURN
1998	317	20.1%	27.1%
1999[150]	487	69.6%	(45.2%)
2000	385	55.4%	(59.6%)
2001	81	13.7%	8.9%

During the two-year internet bubble the average first-day return of 63.3 percent was over three times more than the next highest year (1995), over four times more than the average for the previous eight years (1990-98), and over five times more than the average for the subsequent five years (2001-05).[151] Internet bubble IPOs left an average of $85 million on the table,[152] over double that of the next highest year (2001), and over nine times the average for the previous nine years (1990-1998).[153]

A myriad of explanations for the internet bubble already exist,[154] and there is no need to examine them here. The point is that a significant portion of the IPOs conducted during this two-year period involved

[146] *Id.* at 6.

[147] *See* Griffith, *supra* note 17, at 626-27.

[148] *See supra* notes 78-80 and accompanying text.

[149] Data for Offerings and Average First-Day Return from Ritter, *supra* note 2, at 9. Data for Average Three-Year Return from *id.* at 13.

[150] *But see, e.g.*, Hurt, *Moral Hazard*, *supra* note 37, at 715 (citing a study that found "the average stock [in 1999] was underpriced by 65 percent" and yet another study that found "the average first-day share price increase, or 'pop' in 1999 was . . . 77 percent") (citing Alexander P. Ljungqvist et al., *Hot Markets, Investor Sentiment, and IPO Pricing* 10 (Nov. 6, 2003), *available at* http://ssrn.com/abstract-282293, Melanie Warner, *Friends and Family: Sycamore Gave Lots of "Directed Shares" to a Key Customer*, FORTUNE, Mar. 20, 2000, at 102).

[151] *See supra* notes 69-74 and accompanying text (Table 1, U.S. IPO Returns, 1980-2005).

[152] Loughran & Ritter, *supra* note 71, at 11.

[153] Ritter, *Money Left by Year*, *supra* note 80, at 1.

[154] For a comprehensive and dynamic bibliography of the internet bubble literature, see Jay Ritter & Ivo Welch, *The Initial Public Offerings (IPO) Bibliography*, http://www.iporesources.org/iporefs/ (last visited Feb. 1, 2006).

highly unusual dynamics. High-tech firms participated in almost half of the internet bubble IPOs in the Loughran and Ritter study.[155] On average these firms went public faster than their 1980s and early 1990s predecessors, as well as current firms.[156] And prestigious underwriters exhibited an uncharacteristic willingness to support internet bubble offerings with their dramatically lower median sales;[157] this is consistent with evidence that the quality of IPO entrants declined during the bubble period.[158] The combined effect is that "prestigious underwriters relaxed their underwriting standards and took public an increasing number of very young and unprofitable companies" on a level that we had never seen before.[159]

The internet bubble's peculiar composition cautions against drawing broad conclusions and prescriptions about spinning and underpricing. The link between these two practices is formulated as a perpetual cycle in which underpricing making spinning to insiders possible, which in turn provides an incentive to permit underpricing.[160] There is ample evidence that spinning depends upon underpricing. But the cycle falls apart when one attempts to examine spinning in isolation. As Loughran and Ritter ask: "If spinning is an important reason for underpricing in the bubble period, why wasn't it important a decade earlier?"[161] According to them, "underpricing fed on itself. . . . underpricing creates incentives for even more underpricing. What constrains underpricing from increasing without limit is that raising money is still a goal for an issuer."[162] If this is correct, the combined effect of new regulatory prohibitions on spinning and incentives for managers to generate sufficient equity limit their ability to explain underpricing. At the very least, the data presented thus far does not yield a clear answer about the relationship between underpricing and spinning. And the multiplicity of variables within the internet bubble period demands additional proof from other periods before reaching any conclusions about whether spinning and underpricing are truly linked.

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[155] *See, e.g.*, Loughran & Ritter, *supra* note 71, at 17; *see also id.* at 35 (using Standard Industrial Classifications to define "tech" versus "internet" firms). Within the Ljungqvist and Wilhelm study internet firms accounted for 55 percent of the IPOs in 1999, and 36 percent of the IPOs in 2000. Ljungqvist & Wilhelm, *supra* note 140, at 5.

[156] The median age of firms going public decreased from 7.5 years to 5 years during the internet bubble and then increased to 12 years. Loughran & Ritter, *supra* note 71, at 18-20.

[157] *Id.* at 22-23.

[158] *See, e.g.*, Beverly B. Marshall et al., *Early Internet IPOs Versus Subsequent Entrants*, 28 J. ECON. & FIN. 104 (2004).

[159] Loughran & Ritter, *supra* note 71, at 22.

[160] *See supra* note 120 and accompanying text.

[161] Loughran & Ritter, *supra* note 71, at 12. Indeed, average underpricing levels during the 1990s were exactly the same as those in the 1960s. *See, e.g.*, Ljungqvist, *supra* note 4, at 1 ("Underpricing has tended to fluctuate a great deal, averaging 21% in the 1960s, 12% in the 1970s, 16% in the 1980s, 21% in the 1990s, and 40% in the four years since 2000 (reflecting mostly the tail-end of the late 1990s internet boom).").

[162] Loughran & Ritter, *supra* note 71, at 12.

II. AUCTIONS

Like bookbuilding, auctions are best understood as a device for resolving asymmetric information problems.[163] Auctions collect bidders' valuations while sidestepping collective bargaining problems by presuming the seller has all of the negotiating power.[164] This power comes in the form of the seller's unilateral ability to select an auction type and a set of policies in advance.

A voluminous amount of economic and financial literature has examined auction design and policies. This literature has identified certain similarities between all auction types as well as differences between the common English, or ascending-bid, and Dutch, or descending-bid, auction. There is also literature examining the problem of bidding rings and other manipulative means to thwart auctions. This Part summarizes this literature, which is a necessary foundation to analyzing auction-based mechanisms for going public.

A. *Asymmetrical Pairs*

Auction theory exhibits a decidedly cosmopolitan flavor. In the English, or ascending-bid, auction the price rises successively until only one bidder remains;[165] there is also a Japanese variant of this auction in which the price rises successively as bidders publicly quit and cannot re-enter the process.[166] Conversely, in the Dutch, or descending-bid, auction the price drops successively until only one bidder remains;[167] and there is a French variant of this auction, or *Mise en Vente*, in which the

[163] *See, e.g.*, R. Preston McAfee & John McMillan, *Bidding Rings*, 82 AM. ECON. REV. 579, 581 (1992) ("The distinctive feature of an auction is asymmetric information; if the seller knew the bidders' demands, he would simply post a price.").

[164] *See generally* Jeremy I. Bulow & D. John Roberts, *The Simple Economics of Optimal Auctions*, 97 J. POL. ECON. 1060 (1989) (demonstrating that optimal auction design is tantamount to third-degree price discrimination).

[165] Ascending-bid auctions are typically used in the sale of antiques and art. R. Preston McAfee & John McMillan, *Auctions and Bidding*, 25 J. ECON. LIT. 699, 702 (1987). One of the most famous English auctions was conducted by the Praetorian Guard. After the assassination of Emperor Pertinax, the Guard sold off the entire Roman Empire in 193 A.D.; the winner, Didius Julianus, assumed the role of Caesar for a mere two months before being overthrown and executed. *See* Martin Shubik, *Auctions, Bidding, and Markets: An Historical Sketch*, *in* AUCTIONS, BIDDING, AND CONTRACTING 33, 42-3 (Richard Engelbrecht-Wiggans et al. eds., 1983). *See also* Paul Klemperer, *Auction Theory: A Guide to the Literature*, 13 J. ECON. SURVEYS 227, 267 n.21 (1999) (dryly observing this was "an early and sad case of the winner's curse").

[166] *See, e.g.*, Klemperer, *supra* note 165, at 229 (noting this is "the model most commonly used by auction theorists").

[167] Descending-bid auctions are used in Canada to sell tobacco, in Holland to sell flowers, and in Israel to sell fish. *See id.* at 266 n.13. The descending-bid auction is sometimes called an open first-price auction, as both types of auctions are strategically equivalent. *See id.* at 230. *See also infra* note 77.

price is a function of aggregate demand and the auctioneer allocates shares pro rata according to limit orders submitted by bidders.[168]

Two other prominent varieties of auctions involve the use of sealed-bids.[169] The first-price sealed-bid auction designates the highest privately submitted bid as the winner.[170] As William Vickrey has demonstrated, however, the highest bidder in such auctions suffers from what is known as the "winner's curse," a feeling of regret for having paid more than anyone else.[171] To produce a more optimal expected return, the second-price sealed-bid, or Vickrey, auction designates the second highest privately submitted bid as the winner.[172]

All auction types have two paradigmatic models based on incomplete information.[173] Within the pure private-value model bidders have and know only their individual, variable valuation of the auctioned item.[174] In contrast, within the pure common-value model, bidders have variable knowledge about the auctioned item, but its actual value is constant and unknown.[175] Most actual auctions exhibit elements of both models,[176] in that each bidder's value is a general function of everyone else's private information signals.[177] To the extent auctions adhere to the common-value model, bidders have an incentive to combat information

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[168] *See, e.g.*, Bruno Biais & Anne Marie Faugeron-Crouzet, *IPO Auctions: English, Dutch, . . . French, and Internet*, 19 J. FIN. INTERMEDIATION 1, 2 (2001). *See also infra* notes 282-295 and accompanying text.

[169] Sealed-bids are an alternative to open auctions. *See generally* Robert G. Hanse, *Sealed-Bid Versus Open Auctions: The Evidence*, 24 ECON. INQ. 125 (1986)

[170] First-price sealed-bid auctions are used to sell mineral rights and miscellaneous goods through websites such as eBay. *See, e.g.*, Paul R. Milgrom & Robert J. Weber, *A Theory of Auctions and Competitive Bidding*, 50 ECONOMETRICA 1089, 1093-94 (1982).

[171] *See generally* William Vickrey, *Counterspeculation, Auctions, and Competitive Sealed Tenders*, 16 J. FIN. 8, 21-22 (1961). *But see generally* James C. Cox & R. Mark Isaac, *In Search of the Winner's Curse*, 22 ECON. INQ. 579 (1984) (delineating permutations of the winner's curse phenomenon and contending that it generally occurs when bidders are not utilizing *ex ante* optimal strategies).

[172] Second-price sealed-bid auctions are used to sell stamps by mail and treasury securities. *See, e.g.*, Shubik, *supra* note 165, at 50. As Klemperer notes, "[c]onfusingly, the second-price sealed-bid auction is sometimes called a Dutch auction by investment bankers." Klemperer, *supra* note 165, 266 at n.10. To further complicate matters, the English auction is sometimes called an open second-price auction since they are strategically equivalent. *Id.* at 230; *see also infra* notes 179-185 and accompanying text.

[173] *See, e.g.*, Richard Engelbrecht-Wiggans, *Auctions and Bidding Models: A Survey*, 26 MGMT. SCI. 119, 119 (1980) ("Auctions with complete information may be formally defined but are relatively uninteresting as games and a poor representation of actual auctions.").

[174] Klemperer, *supra* note 165, at 229 ("In the basic *private-value* model each bidder knows how much she values the object(s) for sale, but her value is private information to herself.") (emphasis in original). This is alternatively known as the "independent-private-values" model. *See, e.g.*, McAfee & McMillan, *supra* note 165, at 705.

[175] Klemperer, *supra* note 165, at 229-30 ("In the *pure common-value* model, by contrast, the actual value is the same for everyone, but bidders have different private information about what that value actually is.") (emphasis in original).

[176] *See, e.g.*, McAfee & McMillan, *supra* note 165, at 705 ("Real-world auction situations are likely to contain aspects of both [models] simultaneously.").

[177] Klemperer, *supra* note 165, at 230.

asymmetries to gain superior knowledge about an auctioned item's actual value.[178]

Navigating through all these auction types and models is simplified by the Revenue Equivalent Theorem (RET). Auction theory's "most celebrated theorem"[179] classically provides:

> Assume each of a given number of risk-neutral potential buyers has a privately-known signal [or valuation] independently drawn from a strict-increasing atomless distribution. Then any mechanism in which (i) the object always goes to the buyer with the highest signal [or valuation], and (ii) any bidder with the lowest-feasible signal [or valuation] expects zero surplus, yields the same expected revenue (and results in each bidder making the same expected payment as a function of her signal [or valuation]).[180]

The RET involves four assumptions: (1) risk-neutral bidders[181] (2) with independent values[182] (3) who are otherwise symmetric and (4) whose payment is solely a function of the bids.[183] Each bidder knows the rules of the auction, the number of total bidders, their risk profiles, valuations, and their knowledge of everyone else's knowledge.[184] And each bidder wants only one of any number of identical, indivisible auction items.[185]

The RET yields a remarkable set of insights. For the bidder the expected revenue equals the winner's expected marginal revenue, a

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[178] McAfee & McMillan, *supra* note 165, at 705. To the extent the auction adheres to a private-value model, combating asymmetrical information is irrelevant as bidders are concerned only with their own valuation of the auctioned item. Such bidders, however, may have an incentive to engage in strategic behavior. *See infra* Part III.B.

[179] Paul Klemperer, *Why Every Economist Should Learn Some Auction Theory*, http://www.nuff.ox.ac.uk/users/klemperer/WhyEveryEconomist.pdf 4 (Aug. 2001); *see also* Klemperer, *supra* note 165, at 232 ("This *Revenue Equivalence Theorem* result is so fundamental, so much of auction theory can be understood in terms of it . . . .") (emphasis in original).

[180] Klemperer, *supra* note 165, at 230. For the seminal derivations of the RET, see William Vickrey, *Auction and Bidding Games*, *in* RECENT ADVANCES IN GAME THEORY 15 (1962); Vickrey, *supra* note 171. The amount of literature on the RET is voluminous, particularly on the effects of relaxing each assumption. For a comprehensive bibliography of this literature see Klemperer, *supra* note 165, at 278-86.

[181] *Cf. infra* note 184.

[182] *See, e.g.*, Klemperer, *supra* note 165, at 232 ("Note that the result applies both to private-value models (in which a bidder's value depends only on her own signal), and to more general common-value models provided bidders' signals are independent."). *See also generally* Jean-Jacques Laffont & Quang Vuong, *Structural Analysis of Auction Data*, 86 AM. ECON. REV. 414 (1996) (concluding that private and common value models are observationally equivalent when there is a fixed number of bidders and there is not a reserve price).

[183] *See, e.g.*, McAfee & McMillan, *supra* note 165, at 706.

[184] *See, e.g., id.* A number of commentators have demonstrated how the number of total bidders largely depends on bidders' risk profiles and the independence of their values. *See, e.g.*, Steven A. Matthews, *Comparing Auctions for Risk-Averse Buyers: A Buyer's Point of View*, 55 ECONOMETRICA 633 (1987).

[185] *See, e.g.*, McAfee & McMillan, *supra* note 165, at 706.

criterion instrumental to choosing an optimal auction type.[186] For the seller the English, Dutch, and both types of sealed-bid auctions all yield the same average expected revenue.[187] And, by extension, all of these auction types are equally optimal selling mechanisms, provided they are supplemented by an optimal reserve price.[188]

Different equilibria, however, reveal pairings among auction types. Both second-price sealed-bid and English auctions are stable Pareto optimal equilibria; the dominant strategy for bidders is to remain until the price matches their own true valuation.[189] In contrast both first-price sealed-bid and Dutch auctions satisfy only Nash equilibria;[190] the rational strategy is for bidders to submit a price that is less than their own true valuation based upon guesses about other bidders' valuations.[191] This general equivalence between the second-price sealed-bid and English auctions as well as between the first-price sealed-bid and Dutch auctions often result in collapsing the four standard auction types into two pairs.[192]

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[186] *See, e.g.*, *id.* Accordingly, "an auctioneer should not sell below a reserve price set equal to the value of the bidder whose marginal revenue equals the value to the auctioneer of retaining the unit." Klemperer, *supra* note 165, at 233; *see also infra* notes 193-200 and accompanying text.

[187] McAfee & McMillan, *supra* note 165, at 707, 710 ("Each of these auction forms yields on average the same revenue to the seller. . . . [But] [t]he Revenue-Equivalence Theorem does not imply that the outcomes of the four auction forms are always exactly the same."). This is also true for some non-standard auctions, such the "all-pay" auction in which every participant pays their bid with only the highest bid winning the object. Klemperer, *supra* note 165, at 232.

As Vickrey has demonstrated, the first-price sealed auction yields the exact same revenue as the Dutch auction, independent of the bidder's risk profile or valuation model. *See generally* Vickrey, *supra* note 171. *But see, e.g.*, David Lucking-Reiley, *Using Field Experiments to Test Equivalence Between Auction Formats: Magic on the Internet*, 89 AM. ECON. REV. 1063 (1999) (demonstrating that Dutch auctions of collectible trading cards produces substantially higher revenues than first-price auctions, while the English and second-price formats produce roughly equivalent revenues).

[188] *See, e.g.*, John G. Riley & William F. Samuelson, *Optimal Auctions*, 71 AM. ECON. REV. 381, 382 (1981) ("[F]or a broad family of auction rules, expected seller revenue is maximized using either of the two common auctions if the seller announces that he will not accept bids below some appropriately chosen minimum or 'reserve' price."). *See also infra* note 213.

[189] Klemperer, *supra* note 165, at 230 ("A little reflection shows that in a second-price sealed-bid auction it is optimal for a player to bid her true value, whatever other players do.").

[190] *See supra* note 48. Moreover, both auction types yield the same average outcomes; this is independent of whether the assumptions about risk-neutrality and independent valuation obtain. *See, e.g.*, Vickrey, *supra* note 171, at 17 ("It can also be shown . . . that the two methods of auctioning produce . . . the same expected average expected price and hence the same average expected gains to the buyers and sellers, respectively.").

[191] *See, e.g.*, McAfee & McMillan, *supra* note 165, at 708; *see also id.* at 710 (noting that this is a "nontrivial computational problem").

[192] *See, e.g.*, Klemperer, *supra* note 165, at 231 (referring to ascending and second-price sealed-bid auctions simply as "second-price," and descending and first-price sealed-bid auctions simply as "first-price"). This paper instead refers to descending and first-price sealed-bid auctions as Dutch auctions, since this is the conventional terminology prevalent within the IPO context. *See infra* Part III.A.

Relaxing each of the RET's assumptions reveals distinct circumstances in which a particular auction type may be optimal. When bidders are risk-averse,[193] with von Neumann-Morgenstern utility functions,[194] second-price sealed-bid and English auctions produce the exact same expected revenue, but it tends to be inferior to what first-price sealed-bid and Dutch auctions produce.[195] When values are affiliated,[196] English auctions yield the highest expected revenue, followed by second-price sealed-bid auctions, and then first-price sealed-bid auctions, which yield the same expected revenue as Dutch auctions.[197] When bidders are asymmetrical, there is no optimal auction type because of price discrimination,[198] although

> roughly speaking, the sealed-bid auction generates more revenue than the [English] auction when bidders have distributions with the same shape (but different supports) . . . whereas the [English] auction dominates when, across bidders, distributions have different shapes but approximately the same support.[199]

And when payment is a function not only of bids, but also any additional available information, the optimal auction type varies based on the incentive contract or royalty system involved.[200]

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[193] When the auctioneers are risk-averse, they will prefer the first-price sealed-bid and Dutch auctions over the second-price sealed bid auction, which they will prefer over the English auction. *See generally* Keith Waehrer et al., *Auction Form Preferences of Risk-Averse Bidtakers*, 29 RAND J. ECON. 179 (1998).

[194] *See, e.g.*, MARK SEIDENFELD, MICROECONOMIC PREDICATES TO LAW AND ECONOMICS 70 (1996) (defining a von Neumann-Morgenstern utility function as one that "assigns a utility value that [a person] places on every level of value or wealth that she can achieve with certainty").

[195] McAfee & McMillan, *supra* note 165, at 719. This is not to say that first-price sealed-bid and Dutch auctions will generate an optimal result, just that they will be preferred by risk-averse bidders who will be more aggressive. With risk-averse bidders the seller optimally should provide insurance for the highest possible bid, while penalizing low bidders and subsidizing high bidders. *See, e.g.*, Eric S. Maskin & John G. Riley, *Optimal Auctions with Risk Averse Buyers*, 52 ECONOMETRICA 1473, 1474 (1984).

[196] Affiliation means that an increase in one bid's value improves the likelihood of an increase in another bid's value; this is not simply a correlative relationship. *See, e.g.*, Klemperer, *supra* note 165, at 256-57 (Appendix D).

[197] *See, e.g.*, Milgrom & Weber, *supra* note 170, at 1091-93.

[198] *See, e.g.*, McAfee & McMillan, *supra* note 165, at 714-15 ("When bidders are asymmetric, the first-price sealed-bid auction yields a different price from the English auction: Revenue equivalence breaks down. . . . This is analogous to second-degree price discrimination in the elementary-textbook monopoly model in that it involves discriminating across bidders with different demands."). This ambiguous result, however, obtains when there is a reserve price; in the absence of a reserve English auctions always yield an efficient outcome whereas sealed-bid auctions do not. *See generally* Ronald Johnson, *Oral Auction Versus Sealed Bids: An Empirical Investigation*, 19 NAT. RES. J. 315 (1979).

[199] *See generally* Eric S. Maskin & John G. Riley, *Asymmetric Auctions*, 67 REV. ECON. STUD. 413 (2000) (demonstrating that bidders with higher marginal revenue prefer the second-price auction whereas bidders with lower marginal revenue prefer the first-price auction).

[200] *See, e.g.*, R. Preston McAfee & John McMillan, *Bidding for Contracts: A Principal-Agent Analysis*, 17 RAND J. ECON. 326, 326 (1986) (examining government

B. *Bidding Rings*[201]

The practice of optimal auction design entails a set of basic considerations. As Paul Klemperer has observed,

> [w]hat really matters in auction design are the same issues that any industry would recognize as key concerns: discouraging collusive, entry-deterring and predatory behavior. In short, good auction design is mostly good elementary economics.[202]

Although designed to thwart auctions, bidding rings equally adhere to good elementary economics. In essence ring members agree not to compete with each other whenever they can profit by assuming joint control over the auction price.[203]

While capable of assuming a variety of forms,[204] all bidding rings must satisfy at least four conditions to be successful. First, the ring members must agree on how to allocate profits, otherwise known as

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incentive contracts, which "make[ ] the payment depend both on the bid and on realized costs"). When an auction involves common-values, sellers have an incentive to publicize an item's true value. Sellers can do this by setting a reserve price, which should be higher as the number of bidders increases. These indicia of value tends to increase bidders' estimated valuations, and in turn leads to more aggressive bidding. *See, e.g.*, Milgrom & Weber, *supra* note 170, at 1095. At the same time, bidders have an incentive to keep information private since publicizing it makes the expected surplus zero. "This is a striking result; it implies that it is more important to a bidder that his information be private than that it be precise." McAfee & McMillan, *supra* note 165, at 722.

[201] McAfee and McMillan note in their seminal article that

> [b]idding conspiracies are prevalent enough to have added some exotic locutions to the English language. Cartels are variously called "rings," "pies," and "kippers." A "schlepper" is an insincere bidder attracted solely by the cartel's profits, and a "shill" is a phony bidder used by the auctioneer to drive up the price. A "knockout" is a private auction held by the cartel to determine which member gets the item and how much he pays the other members.

McAfee & McMillan, *supra* note 163, at 579, 579 n.1.

[202] Paul Klemperer, *What Really Matters in Auction Design* 16 J. ECON. PERSP. 169, 169-70 (2002); *see also generally* Susan Athey & Philip A. Haile, *Identification of Standard Auction Models*, 70 ECONOMETRICA 2107 (2002) (introducing additional economic variables for choosing between different auction types). This was not always so. For an extended period of time auctions were not regarded as an allocative mechanism because they had "committed the cardinal sin in economics of not being theoretically convenient to study in terms of the traditional neoclassical theory." Andrew Schotter, *Auctions and Economic Theory*, *in* BIDDING AND AUCTIONING FOR PROCUREMENT AND ALLOCATION 3, 4 (Yakov Amihud ed. 1976).

[203] *See, e.g.*, RALPH CASSADY, JR., AUCTIONS AND AUCTIONEERING 177 (1967) ("When all the buyers who are interested in the same merchandise are included in the [bidding] ring, buyer competition gives way to monopsony, or buyer monopoly."). *Cf. supra* note 198.

[204] *See, e.g.*, Daniel A. Graham & Robert C. Marshall, *Collusive Bidder Behavior at Single-Object Second-Price and English Auctions*, 95 J. POLIT. ECON. 1217, 1220 (1987) ("The character of a bidder coalition depends on the type of object being sold.") (citing CASSADY, *supra* note 203, 177-92 (delineating different types of bidding rings in the antique, fish, and wool industries)).

division-of-spoils.[205] Second, that agreement must be self-enforcing, otherwise known as cartel enforcement.[206] Third, there must be barriers to new bidders, otherwise known as entry deterrence.[207] And, fourth, a bidding ring must be sufficiently stable to withstand attacks from victims, otherwise known as active seller responses.[208]

Notably, none of these conditions requires that all buyers participate in the bidding ring. Intuitively the ideal bidding ring might include all buyers, who in turn can select a representative to act as a monopsonist with the seller.[209] But a bidding ring can operate in a dual market, split between ring and non-ring buyers.[210] Indeed, such a dual market may be preferable:

> An obvious absence of competition would almost certainly alert the seller or his agent and lead to

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[205] *See, e.g.*, McAfee & McMillan, *supra* note 163, at 583-88. As McAfee and McMillan have observed, division-of-spoils is essentially an adverse selection problem, as colluding bidders "do not know how much of their fellow cartel members is willing to pay for the item being sold." *Id.* at 579.

[206] *See, e.g.*, Dilip Abreu et al., *Optimal Cartel Equilibria with Imperfect Monitoring*, 31 J. ECON. THEORY 351 (1986).

[207] *See, e.g.*, Klemperer, *supra* note 202, at 172 ("[A]n auction with too few bidders risks being unprofitable for the auctioneer and potentially inefficient. Ascending auctions are often particularly poor in this respect, since they can allow some bidders to deter the entry, or depress the bidding, of rivals.").

[208] *See, e.g.*, Marc S. Robinson, *Collusion and the Choice of Auction*, 16 RAND J. ECON. 141, 143 (1985) ("For the prospective cartel to be stable, the recommended cartel strategies should be *incentive-compatible*, at least in the weak sense that some other strategy for an individual bidder not be strictly preferred by that bidder, given what the others are doing.") (emphasis in original). Incentive-compatibility is a function of sharing information, which studies demonstrate is crucial for a bidding ring's stability, regardless of the type of auction involved. *See, e.g.*, *id.* at 141 & n.1 ("[A]s long as all cartel members share the same information, cartels are stable (i.e., incentive-compatible) . . . . What is crucial for the results is . . . whether the cartel members regret their strategies if cheating occurs."). *But see, e.g.*, Graham & Marshall, *supra* note 204, at 1218 n.3 ("[T]he 'incentive-compatibility' problem and the determination of membership are important problems for the cartel. Robinson also ignores the strategic response of the auctioneer and the information distinction between the English and second-price auctions when a cartel is present."). Sealed-bid auctions, however, do tend to be less susceptible than their oral counterparts to bidding rings. *See, e.g.*, Walter J. Mead, *Natural Resource Disposal Policy-Oral Auction vs. Sealed Bids*, 7 NAT'L RES. J. 194, 223 (1967) (concluding that "[o]ral bidding is vulnerable to collusive practices among bidders as well as to certain devices of unfair competition and emotionalism" to a greater degree than sealed bidding).

[209] *See, e.g.*, CASSADY, *supra* note 203, at 178 ("An attempt is made to identify and make arrangements with all buyers who are expected to be interested in a particular item or a lot of goods. Once this task is accomplished, one buyer, acting for all, is in a position to exert complete monopsonistic power and thus depress prices drastically . . . ."); Graham & Marshall, *supra* note 204, at 1220 ("The ring appoints a sole bidder who bids on behalf of the coalition at the auction.").

[210] *See, e.g.*, CASSADY, *supra* note 203, at 178 ("There would be a dual market situation: one market would include all the interested buyers, uniformed as well as informed, and the other would include only those who are informed. It is the informed segment that the ring leader attempts to control . . . ."); Graham & Marshall, *supra* note 204, at 1221 ("In fact, if two or more distinct [collusive] coalitions appear at the same auction, they will invariably merge to form a single coalition.").

> defensive action against the ring . . . . In fact, the appearance of competition is so important that the head of the [bidding ring] may find it necessary, in the absence of actual competition, to provide simulated competitive activity by assigning bidding roles to certain ring members, who stop either at a pre-arranged cutoff point or at a signal from the leader.[211]

This simulated competition, or phantom bid, strategy is possible because ring buyers do not participate in an auction as individuals, but as a group.[212] Any proceeds from the auction belong to the bidding ring, and are shared among its members instead of the individual member with the winning bid.[213] A bidding ring thus seeks to maximize its joint expected profits.

Such profits typically are determined and then distributed through separate auctions. Prior to the at-large auction, the bidding ring ascertains each member's valuation through bids.[214] The winner is the member with the highest valuation,[215] who likely would submit that same bid in the at-large auction.[216] Should the bidding ring prevail, it will conduct another auction, or a "knockout."[217] Every member of the bidding ring then receives a portion of the difference between the winning bids in the at-large and knockout auctions;[218] optimally, this

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[211] CASSADY, *supra* note 203, at 179.

[212] *See, e.g.*, Kenneth Hendricks & Robert H. Porter, *Collusion in Auctions*, 15/16 ANNALES D'ECONOMIE ET DE STATISTIQUE 217, 221 (1989) ("[Phantom] bids may be submitted to create the appearance of competition. . . . [G]iven the available data, it would be very difficult to detect the presence of an inclusive cartel that submitted phantom bids.").

[213] *See, e.g.*, Graham & Marshall, *supra* note 204, at 1220 ("The benefits of ring formation are shared among members rather than, for example, accruing entirely to the ring member who ultimately obtains possession of the item.").

[214] Pursuant to the revelation principle, this valuation need not be accurate for the bidding ring to work successfully. *See, e.g.*, McAfee & McMillan, *supra* note 163, at 580 ("The revelation principle states that the outcome of any mechanism [for assigning bids and post-auction transfers] that is not incentive-compatible can be mimicked by one that is incentive-compatible, so that honesty can be assumed without loss of generality.").

[215] In a descending-bid auction the highest valuation would be the lowest submitted bid from the bidding ring.

[216] *See, e.g.*, McAfee & McMillan, *supra* note 163, at 586 ("An optimal cartel mechanism has the property that the bidder with the highest value if and only if his value exceeds *r* and the seller receives *r*.").

[217] Not all bidding rings, however, are capable of making post-auction transfer payments. As McAfee and McMillan have demonstrated, "weak" bidding rings operate by submitting identical bids that effectively convert the auction process into a random contest among the colluders. *See id.* at 584 ("Why do the bidding firms choose such an apparently naïve form of coordination? The answer . . . is that, given the asymmetry of information . . . identical bidding is the best the cartel can do short of using side-payments.").

[218] *See, e.g.*, McAfee & McMillan, *supra* note 163, at 587-88. *But see, e.g.*, Robinson, *supra* note 208, at 144 (contending that even payment of *ex post* profits would fail to establish a Nash equilibrium in a sealed-bid auction among otherwise compliant ring members).

difference should be divided equally among all ring members, including the at-large winning bidder.[219]

Though there is no honor among thieves, bidding rings tend to be rather effective at self-enforcement. When there is only one auction, the bidding ring clearly will not have resort to threat of future retaliation, but instead may have to implement what McAfee and McMillan term "an organized-crime approach" to punishment.[220] When there are repeated auctions or interaction among the bidding ring members, the threat of future retaliation is usually sufficient to secure cooperation.[221] And case studies of retaliation in various industries ironically demonstrate that "it works very much to the seller's advantage as vindicative competition leads to crazy prices."[222]

For better or for worse, legal regulation of auctions tends to be both ineffective and scarce. One of the few such examples is England's Auctions (Bidding Agreements) Act of 1927, which prohibits any agreements to abstain from auctions:

> If any dealer agrees to give, or gives, or offers any gift or consideration to any other person as an inducement or reward for abstaining, or for having abstained, from bidding at a sale by auction either generally or for any particular lot, or if any person agrees to accept, or accepts, or attempts to obtain from any dealer any such gift or consideration as aforesaid, he shall be guilty of an offense under this Act.[223]

This statute, however, "is seldom invoked, and has had almost no effect on ring operations in England."[224] Perhaps the closest American analogue to the Bidding Agreements Act is the Sherman Act,[225] but its prohibitions are tailored to cartel arrangements that are analytically distinct from auction-related collusion.[226] Further, antitrust actions are

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[219] *See, e.g.*, McAfee & McMillan, *supra* note 163, at 588 n.13 ("[T]he knockout with equal profits is the optimal mechanism for the cartel: there is no other mechanism, no matter how complicated, that does better."). This is restricted to sealed-bid knockouts, as "the oral knockout is not incentive-compatible." *Id.* at 588 (citations omitted).

[220] McAfee & McMillan, *supra* note 163, at 581.

[221] *See, e.g.*, *id.* at 581 ("A deviating bidder can be threatened with noncooperative profit levels in all future auctions should he win the current auction when the mechanism dictated otherwise. This threat will be sufficient to deter deviations if discounting is sufficiently low.").

[222] JEREMY C. COOPER, UNDER THE HAMMER: THE AUCTIONS AND AUCTIONEERS OF LONDON 37-8 (1977).

[223] 2(3) HALSBURY'S LAWS OF ENGLAND § 246, at 120 (Lord MacKay, 4th ed. 2003). The penalty for such an offense is either a fine capped at the prescribed sum, six month imprisonment, or both. *Id.* at 120 n.7.

[224] CASSADY, *supra* note 203, at 191; *see also id.* (concluding in passing that "recourse to law is at best a doubtful way of stamping out ring activities").

[225] 15 U.S.C. § 1 (2004). The U.C.C. does generally provide for sales by an auction, but not for bidding rings or manipulative schemes. *See* U.C.C. § 2-328 (2004).

[226] *See, e.g.*, Robert C. Marshall & Michael J. Meurer, *Bidder Collusion and Antitrust Law: Refining the Analysis of Price Fixing to Account for the Special Features of Auction Markets*, 72 ANTITRUST L.J. 83, 83 (2004) ("[T]here are significant difference regarding the economics of collusion in auction and procurement markets as compared to

notoriously costly and difficult to conduct, much less win.[227] The law thus affords sellers extremely limited formal means for detecting and combating bidding rings.

Sellers, however, are hardly helpless, passive victims of bidding rings. They have recourse to private countermeasures that involve lower transaction costs than formal legal means.[228] In the short run a seller simply can retract its item or select a bid from a friendly party.[229] Similarly, in the long run, a seller can protect itself by submitting its own phantom bids or using an arbitrary or unpredictable method to selecting winning bidders.[230] A seller also can set a reserve price, thereby diminishing the bidding ring's profit margin;[231] that reserve price then can be adjusted upwards or downwards to influence the expected purchase price. And a seller could withhold certain bidding information, such as the winning valuation, in an attempt to disrupt the bidding ring's ability to divide spoils or detect cheating internally.[232]

III. AUCTION-BASED IPOS

Securities offerings and auctions share a compatible relationship to asymmetrical information. On the one hand IPOs suffer from information gaps between investors and issuers.[233] On the other hand auctions represent a well-established way to bridge such gaps.[234] Over the past three decades the connection between these two processes steadily has gained broader currency within the United States and around the world.[235]

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posted- price markets . . . ."). Marshall and Meurer proceed to examine bidding rings, but their analysis largely folds into the economics literature previously analyzed in Part II.B.

[227] *See, e.g.*, John E. Lopatka & William H. Page, *Economic Authority and the Limits of Expertise in Antitrust Cases*, 90 CORNELL L. REV. 617, 639 (2005) (referencing the "daunting evidentiary challenges in antitrust litigation" and general skepticism that even the "'big case' is worth its institutional costs") (citations omitted).

[228] This may be the primary reason why legal regulation of auctions is so scarce.

[229] *See, e.g.*, CASSADY, *supra* note 203, at 191 ("Upon recognizing the existence of a ring, the auctioneer not only can disregard the bids of the ring leader, but can actually make a sale to a friendly buyer. . . . Perhaps the most effective defensive tactic is to run up the price of an article by the use of phantom bids, or bids from nonexistent traders.").

[230] *See, e.g.*, Hendricks & Porter, *supra* note 212, at 221 ("The oligopoly literature suggests that increasing this sort of uncertainty can be fatal to a collusive agreement."). In the case of identical bids the seller could select the winning bid on a mercurial arbitrary basis.

[231] *See, e.g.*, CASSADY, *supra* note 203, at 191 ("In some auctions, the most effective way of overcoming a buyer's ring is to set a reserve price, prohibiting sale of the item below its estimated value and thus impairing the profitability of a collusive operation.").

[232] *See, e.g.*, Hendricks & Porter, *supra* note 212, at 223 ("Clearly, restricting information flows within the cartel may hinder its ability to detect cheating.").

[233] *See supra* notes 66-68 and accompanying text.

[234] There are documented instances of auctions dating back to 500 B.C. in Babylonia. *See* CASSADY, *supra* note 203, at 26-40 (providing a comprehensive historical account of auctions).

[235] Twenty years ago a student note specifically proposed the idea of U.S. companies conducting Dutch IPOs to eliminate underpricing. *See* Katina J. Dorton, Note,

There are three prominent examples of auction-based IPOs. The first is Google's 2004 IPO, which is noteworthy primarily for its high visibility and historical significance as the largest auction-based IPO to date. The second is the *Mise en Vente*, a variant of the Dutch IPO that hundreds of French issuers have used since 1983.[236] The third is W.R. Hambrecht + Co.'s OpenIPO, which was introduced in 1999 and has become the sole domestic platform for Dutch IPOs.[237] This Part analyzes each example in relation to traditional IPOs to assess their comparative performance, and then introduces auction-specific manipulative strategies.

A. *Dutch, French, or Open?*

On April 29, 2004 Google filed an S-1 for an IPO to raise up to $2.72 billion.[238] The S-1 raised eyebrows on Wall Street by announcing that Google had elected to conduct the offering via an auction rather than the far more prevalent bookbuilding method.[239] Co-founders Larry Page and Sergey Brin portrayed themselves as sort of corporate Robin

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Auctioning New Issues of Corporate Securities, 71 VA. L. REV. 1381 (1985). And the French have been using auction-based IPOs since 1964. *See, e.g.*, John G. McDonald & Bertrand C. Jacquillat, *Pricing of Initial Equity Issues: The French Sealed-Bid Auction*, 47 J. BUS. 37, 37 (1974) ("In France all initial issues of common stock since 1964 have been priced and allocated in a sealed-bid auction procedure . . . ."). *But see* Ann E. Sherman, *IPOs and Long-Term Relationships: An Advantage of Bookbuilding*, 13 REV. FIN. STUD. 697, 697 (2000) (noting that "[t]here is an international trend toward use of the U.S. book-building (firm commitment) method for initial public offerings" and "that auctions have not been more popular" [globally]"); Ruth Simon & Elizabeth Weinstein, *Investors Eagerly Anticipate Google's IPO -- Dutch Auction-Type Process May Give Smaller Bidders a More Level Playing Field*, Apr. 30, 2004, WALL ST. J., at C1 ("'Around the world, auctions have fallen out of favor,' says Alexander Ljungqvist, a finance professor at New York University's Stern School of Business.").

[236] *See, e.g.*, Biais & Faugeron-Crouzet, *supra* note 168, at 2 ("In the *Mise en Vente*, an auction-like IPO commonly used in France, investors submit limit orders and the auctioneer sets the price as a function of aggregate demand (the name of this auction procedure has been recently changed to *Offre a Prix Minimum*, but its workings have not been altered)."). *See also infra* Part III.A.

[237] *See, e.g.*, Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 10) ("[O]f the firms that developed an online auction system during the 1999-2000 Boom, only W.R. Hambrecht + Co. currently maintains an online IPO platform in the U.S.").

[238] *See* Google, Inc., *Form S-1 Registration Statement*, http://www.sec.gov/Archives/edgar/data/1288776/000119312504073639/ds1.htm (filed with SEC on Apr. 29, 2004) [hereinafter Google, *Form S-1*]. *See also* Fleischer, *supra* note 34 (manuscript at 22) (noting that the precise amount to be raised, $2,718,281,828, is the same numerical sequence of "the mathematical constant e, or Euler's number, which is the base of the natural logarithm function" and that "Google repeated the joke in its follow-on offering in August 2005, selling 14,159,265 shares. The number represents the first eight digits after the decimal in the mathematical constant pi").

[239] Google, *Form S-1*, *supra* note 238, at 2 (The price to the public and allocation of shares will be determined by an auction process."). Bookbuilding was the preferred method for IPOs during the internet bubble. *See, e.g.*, Loughran & Ritter, *supra* note 71, at 8 (noting that, within their 1999-2000 data set, "[b]ookbuilding is the mechanism used to price and allocate IPOs for 99.9% . . . with auctions used for the other 0.1%.").

Hoods,[240] rejecting bookbuilding in favor of a method that seemed to promise less underpricing, less restricted access to the IPO, and less profit for privileged recipients of spun shares.[241] Indeed, within the initial S-1 filing, they pointed out that: "Buyers hoping to capture profits shortly after our Class A common stock begins trading may be disappointed."[242]

Google's announcement, however, certainly did not generate disappointing media coverage. As one prominent market strategist proclaimed, "We are in a new world."[243] A financial columnist from *The New Yorker* described the auction as "analogous to the new-model I.P.O.: forget the experts; go with the crowd. You might say that Google could Google its own stock price,"[244] while a commentator suggested that this method "may push out the old model and become the industry standard."[245] The CEO of another company that had used an auction to go public speculated that Google's IPO "could be the thing that breaks a sleazy Wall Street system."[246] And reports predicted that "[t]his type of auction should cut down on the huge run-up in share price

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[240] This decision appeared to be a calculated move to capitalize on the co-founders' iconoclastic personalities and management style. *See, e.g.*, *Google's Dutch Treat*, WALL ST. J., May 3, 2004, at A20 ("In a sense, this auction is the perfect IPO expression of Google's own business model."); George Mannes, *Partner Pay Intrudes on Google Fantasy* 1, http://www.thestreet.com/tech/georgemannes/10157744.html. (Apr. 30, 2004) ("[T]he picture [Brin and Page] paint of how Google is run, and how it should be run, more closely resembles the candy manufacturer run by Willy Wonka in Roald Dahl's classic children's book *Charlie and the Chocolate Factory*. . . . The parallels between Wonka and Google's founders are striking.").

[241] *See supra* notes 40-42 and accompanying text. This is not inconsistent with my earlier critique of the empirical and theoretical connection between underpricing and spinning, which is largely predicated on the incentives applying to issuer-managers. *See supra* Part I.B.

[242] Google, *Form S-1*, *supra* note 238, at 2. A subsequent amendment to the S-1, however, deleted the reference to being "disappointed" and inserted the following substitute language: "The price to the public and allocation of shares will be determined by an auction process. . . . *As a result, buyers should not expect to be able to sell their shares for a profit shortly after our Class A common stock begins trading.*" Google, *Amended Form S-1*, *supra* note 28, at 31 (emphasis added).

[243] Simon & Weinstein, *supra* note 235, at C1 (quoting Richard Peterson, chief market strategist for Thomson Financial).

[244] James Surowiecki, *Going Dutch*, 79 THE NEW YORKER 62, 62 (Dec. 22 & 29, 2003).

[245] Bruce Gottlieb, *What Is a Dutch Auction IPO?*, http://slate.msn.com/id/1002736 (May 6, 1999).

[246] Bill Mann, *Going Dutch with Google*, http://www.fool.com/news/commentary/2004/commentary040526bm.htm (May 26, 2004) (quoting Patrick Byrne of Overstock.com); *see also* Olga Kharif, *Not All Dutch Auctions Are Equal*, BUS. WEEK ONLINE, http://www.businessweek.com/technology/content/aug2004/tc20040818_5635_tc024.htm (Aug. 18, 2004) ("'The Dutch auction is definitely threatening the status quo in institutional banking,' says Alison May, CEO of RedEnvelope [which had used a Dutch IPO]. 'They're fighting for survival.'").

experienced during the first days of trading experienced by other tech IPOs during the 1990s."[247]

The method was appealing perhaps because its rationale is so simple. An auction is a familiar open access device.[248] By allocating shares to all prospective investors, both individual and institutional alike, Google had stripped underwriters of their capacity to spin on a preferential basis. And by broadening pre-IPO participation, Google apparently had harnessed a more efficient gauge of its share's market value.[249] As a result, Google's shares seemed less vulnerable to a first-day "pop" than those offered through the traditional bookbuilding method. Accordingly, the auction promised an egalitarian way to eliminate spinning, and thereby avoid underpricing,[250] that anyone could understand.[251]

A closer examination of Google's IPO,[252] however, reveals a number of rather traditional features. Rather orthodoxly, the company elected to enlist a syndicate of twenty-eight blue-chip underwriters;[253] that syndicate was led by two of the most established investment banks, Morgan Stanley & Co. Inc. and Credit Suisse First Boston LLC, and yet

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[247] Les Christie, *The ABCs of a Unique IPO: The Hottest Tech IPO in Years Will Be Run As a "Dutch Auction,"* CNNMONEY, http://money.cnn.com/2004/04/29/technology/googleauction 1 (Apr. 20, 2004).

[248] Classically defined, an auction is "a market institution with an explicit set of rules determining resource allocation and prices on the basis of bids from the market participants." McAfee & McMillan, *supra* note 165, at 701. According to Paul Milgrom:

> The simplest explanation of the continuing popularity of auctions is that auctions often lead to outcomes that are efficient and stable. A second explanation of the popularity of auctions highlights the advantages of an auction to a seller in a relatively poor bargaining position (such as the owner of a nearly bankrupt firm) when the goods sold at auction can later be resold. A third explanation . . . is that even a seller in a strong bargaining position will sometimes find it optimal to conduct an auction . . . rather than to play any other exchange game with the bidders.

Milgrom, *Auction Theory*, *in* ADVANCES IN ECONOMIC THEORY 1, 2-3 (Truman F. Bewley ed. 1987). *But cf. supra* note 40.

[249] *See, e.g.*, Kite, *supra* note 42, at 27 ("Dutch auctions, say supporters, offer a truer price based on more accurate demand of a wider market, because the issuance is open to any potential shareholder with an Internet connection, instead of select institutional accounts favored by individual underwriters.").

[250] *But cf. infra* note 338.

[251] The mechanics of Google's auction, however, were far from uncomplicated. *See, e.g.*, Google, *Amended Form S-1*, *supra* note 28, at 34-44.

[252] For a more comprehensive synopsis of Google's IPO, see Eugene Choo, Note, *Going Dutch: The Google IPO*, 20 BERK. TECH. L.J. 405, 418-27 (2005); Fleischer, *supra* note 34 (manuscript at 12-27); Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 11-26).

[253] *See* Google, *Amended Form S-1*, *supra* note 28, at 35. Most of these underwriters rate extraordinarily well on reputational indices. *See, e.g.*, Carter et al., *supra* note 108, at 285 (examining three prominent reputational indices for underwriters based on underpricing). Google also executed a standard agreement with its underwriting syndicate. *See* Google, Inc., *Form of Underwriting Agreement*, http://www.sec.gov/Archives/edgar/data/1288776/000119312504142742/dex101.htm (Aug. 2004).

neither had any experience with auction-based internet IPOs.[254] Google also rather quietly agreed to allocate to these underwriters approximately 15 percent of the IPO shares outside of the auction process.[255] Similarly well-positioned was a cadre of prominent individuals and institutions who had acquired ownership stakes well before Google even planned to go public;[256] these shareholders stood to profit handsomely from the IPO, regardless of whether it would be by auction or bookbuilding. And while Brin and Page did indicate that they were "encouraging current shareholders to consider selling some of their shares as part of the offering," [257] their efforts in this regard evidently focused more on retail and small investors;[258] this has prompted a charge that "some investors selling shares in the offering were more equal than others."[259]

Perhaps the greatest misperception about Google's IPO is that it was a pure Dutch auction. Well before Google announced its IPO format, there was rampant speculation that bids would determine the final

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[254] *See* Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 13) (noting that Morgan Stanley and CSFB "are not known for IPO innovation and in fact had never offered an online IPO auction before").

[255] Choo, *supra* note 252, at 421 n.71. The auction format, however, did enable Google to negotiate a significantly lower commission rate of 2.8 percent with underwriters. *See* Gary Rivlin, *After Months of Hoopla, Google Debut Fills the Norm*, N.Y. TIMES, Aug. 20, 2004, at C4. *Cf. supra* note 99.

[256] *See* Gary Rivlin, *Google Goes Public? The Rich Get Richer*, N.Y. TIMES, Apr. 25, 2004, at A24 (identifying as owners, *inter alia*, Henry A. Kissinger, Shaquille O'Neal, Michael S. Orvitz, Frank P. Quattrone, Tiger Woods, Arnold Schwarzenegger, and various venture capital firms). These shares, however, fall outside of the conception of spinning used here, which concerns only pre-IPO allocations by underwriters to prominent individuals and institutional investors, but not initial shareholders. *See supra* note 17. Initially, none of these individuals and institutions was subject to a lock-up agreement. *See* Google, Inc., *Amendment No. 2 to Form S-1 Registration Statement*, http://www.sec.gov/Archives/edgar/data/1288776/000119312504105564/ds1a.htm 120 (June 21, 2004). Google subsequently backed off of this in response to intense public criticism. *See* Google, Inc., *Amendment No. 4 to Form S-1 Registration Statement*, http://www.sec.gov/Archives/edgar/data/1288776/000119312504124025/ds1a.htm 110-11 (July 26, 2004).

[257] Google, *Letter from the Founders: "An Owner's Manual" for Google's Shareholders*, *in Amended Form S-1*, *supra* note 28, at 31. This, however, was based on the rationale that those shares would "supplement the shares the company sells to provide more supply for investors and hopefully provide a more stable fair price." *Id.* In all likelihood any shares sold by these individuals and institutions were because they were interested simply in cashing out; to increase the supply of shares, Google merely had to authorize issuance of a larger number.

[258] *See, e.g.*, Delaney, *supra* note 30, at A1 (delineating how certain prominent investors were allowed to fend off Google's request to sell shares, which suggests that "some top executives and directors acted in ways that benefited them while leaving out investors who weren't as well-positioned"). To be clear, this is not to suggest that Google improperly used such strategic targeting. Indeed, the practice of favoring institutional and prominent investors is legally permissible and has rational merit. *See infra* note 338. The point here is only that certain aspects of Google's IPO seem more traditional than democratic.

[259] Delaney, *supra* note 30, at A1.

offering price.[260] Google's S-1 suggested the same, sandwiching between various caveats that: "We intend to use the auction clearing price to determine the initial public offering price and, therefore, to set an initial public offering price that is equal to the clearing price."[261] In the prototypical Dutch auction the lowest bidder sets the ultimate price;[262] this format is ideally suited for sellers that wish to utilize market pressure to ferret out quickly the lowest valuation, regardless of the overall market welfare.[263] Accordingly, Dutch auctions are a common way for issuers to conduct stock repurchases,[264] and self-tender offers,[265] where the ultimate objective is to obtain the lowest share price possible. In contrast Google retained the option of setting the final offering price "in response to investor demand";[266] bidders thus had no assurance that the auction clearing price would in fact be the final offering price, which could be adjusted upwards or downwards as a matter of Google's and its underwriters' discretion.[267]

Indeed, despite all its auction-related fanfare,[268] Google ultimately lowered its initial clearing price range from $108-135 to $85-95, and

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[260] *See, e.g.*, Pete Barlas, *Google Files for IPO via Dutch Auction*, http://www.10e20webdesign.com/news_center_press_coverage_investors_business_daily_google_files_for_ipo_via_dutch_auction.htm (Apr. 30, 2004); Petruno, *supra* note 33, at C1 ("As the dust clears from Google Inc.'s market debut, some successful bidders for the stock believe that they might have gotten substantially more shares in the deal-if the company had conducted a pure version of the auction system it championed.").

[261] *See* Google, *Amended S-1*, *supra* note 28, at 38. This is not to suggest that Google mislead prospective investors, as the S-1 is sprinkled with well-placed statements that the company and its underwriters "have discretion to set the initial public offering price below the auction clearing price." *Id.*; *see also id.* at 34 ("Understand that we may modify the price range and the size of our offering multiple times in response to investor demand.").

[262] *See, e.g.*, Hurt, *Moral Hazard*, *supra* note 37, at 764 ("In the purest form of online auction, the underwriter has either no discretion or very little discretion in determining either the price of the IPO shares or the recipients of the distribution."); Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 6) (same).

[263] *See supra* note 167.

[264] *See, e.g.*, Anita I. Anand, *Regulating Issuer Bids: The Case of the Dutch Auction*, 45 MCGILL L.J. 133, 137 (2000) ("The Dutch Auction is a popular method of share buy-back in the United States."). Two months after the IPO, Google repurchased 23.4 million shares of common stock from its employees. While this was to mollify SEC concerns, the stock repurchase ironically may have been more suited to a Dutch auction format than the IPO.

[265] *See, e.g.*, Robert Comment & Gregg A. Jarrell, *The Relative Signaling Power of Dutch-Auction and Fixed-Price Self-Tender Offers and Open-Market Share Repurchases*, 46 J. FIN. 1243 (1991).

[266] *See* Google, *Amended Form S-1*, *supra* note 28, at 34.

[267] *See* Google, *Letter from the Founders: "An Owner's Manual" for Google's Shareholders*, *in Amended Form S-1*, *supra* note 28, at 31 ("Our goal of achieving a relatively stable market price may result in Google determining with our underwriters to set the initial public offering price below the auction clearing price.").

[268] *See id.* (justifying the decision to use an auction on the basis that it would generate "a share price that reflects an *efficient market valuation* of Google," and thus minimize the amount of money left on the table) (emphasis added).

then set the final offering price at $85.[269] This largely was prompted by investor uncertainty stemming from a number of snafus, ranging from SEC concern about employee share distributions to a magazine interview with Brin and Page that may have breached the mandatory "quiet" period.[270] That uncertainty persisted into the days leading up to the IPO, leaving the offering still undersubscribed and reportedly leading Google's CEO, Eric Schmidt, to pronounce that "the auction had failed."[271] Accordingly, Google's eleventh hour price changes were designed to ensure sufficient demand and generate an aftermarket pop,[272] a charge ordinarily leveled against bookbuilding underwriters.[273]

Somewhat ironically, proponents of auction-based IPOs have been the quickest to point out the impure Dutch nature of Google's IPO. For instance, Laurie Simon Hodrick has noted that, "[a]lthough the Dutch auction gave Google the ability to set a market clearing price for its shares, the modified Dutch auction described in the prospectus did not require Google to do so."[274] Similarly, Christine Hurt has pointed out that "[i]n a true Dutch auction, the clearing price is also the offering price. In the Google offering, the issuers . . . retained the right to set the offering price below the auction clearing price,"[275] and ultimately asserted that "Google's IPO was unique in that the issuer combined the auction platform with the support of traditional investment banks."[276]

The results, however, have been hardly unique. Whatever mysterious method Google used to calculate its final offering price

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[269] Google further enforced this price range by reserving the right to refuse substantially higher bids, on the theory that they might be attempts to artificially inflate the offering price. *See* Google, *Amended Form S-1*, *supra* note 28, at 34, 40.

[270] *See, e.g.*, Choo, *supra* note 252, at 422-23.

[271] Delaney, *supra* note 30, at A11 ("In a conference call, according to someone familiar with it, Google Chief Executive Eric Schmidt told executives and advisers that the auction had failed.").

[272] According to Jay Ritter,

> by lowering its expected price range to US$85-95, Google probably triggered a last-minute rush by institutional bidders to the US$85 level. Even if demand still was good enough to allow a true market-clearing price of, say, US$87, at that level Google would have excluded all of the institutions that had bid US$85, Mr. Ritter said. That might have alienated some key potential future buyers of the stock, he said.

Petruno, *supra* note 33, at C1.

[273] *See supra* Part I.A.

[274] Hodrick, *supra* note 36, at 1; *see also* Choo, *supra* note 252, at 421 n.71.

[275] Hurt, *What Google Can't Tell*, *supra* note 37 (manuscript at 22).

[276] *Id.* at 31; *see also id.* (manuscript at 33) (noting the uniqueness of Google's IPO as "one of the largest in U.S. history"). According to Hurt, "[u]nlike many start-ups, Google did not have to court investment banks or rely on VC relationships to make introductions. Because of this power, Google was uncommonly able to determine unilaterally who would underwrite the IPO and how the IPO would proceed." Hurt, *Moral Hazard*, *supra* note 37, at 769. She thus contends that Google's IPO was a "promising breakthrough in the market for IPOs in that the company showed the investment banks that it will engage in an IPO on its terms and according to its rules." *Id.*

clearly has failed to avoid underpricing.[277] On its first-day of trading Google's shares shot up 18 percent in value. Table 3 demonstrates how Google's stock subsequently has skyrocketed in value:

TABLE 3
GOOGLE IPO RETURNS, 2004-2005[278]

DATE[279]		PRICE	RETURN
2004	Aug. 19	$85.00/$100.34	18.05%
	Sept. 19	$117.49	38.22%
	Oct. 19	$147.94	74.05%
	Nov. 19	$169.40	99.29%
	Dec. 19	$180.08	111.86%
2005	Jan. 19	$197.30	132.12%
	Feb. 19	$197.95	132.88%
	Mar. 19	$180.04	111.81%
	Apr. 19	$191.40	125.18%
	May 19	$239.18	181.39%
	June 19	$280.30	229.76%
	July 19	$309.90	264.59%
	Aug. 19	$280.00	229.41%
MEAN		$215.94	145.72%

Admittedly, Google's stock has exhibited unusual volatility. In the year after the IPO, favorable earnings reports escalated the stock price, which experienced a setback when employees and initial investors were permitted to sell their holdings, but then resumed an upward surge.[280] Nevertheless, over the same time period traditional IPOs have experienced only an 11.1 percent first-day return.[281]

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[277] *But see* Hurt, *Moral Hazard*, *supra* note 37, at 769 ("With the price of Google shares then soaring a *modest* 50 percent over the next six weeks, one is left to wonder whether even with the auction model, the shares were underpriced.") (emphasis added).

[278] Data from http://moneycentral.msn.com/investor/charts/chartdl.asp?Symbol=goog&DateRangeForm=1&PT=5&CP=1&C5=8&C6=2004&C7=7&C8=2005&C9=0&ComparisonsForm=1&CE=0&CompSyms=&DisplayForm=1&D4=1&D5=0&D7=&D6=&D3=0&ShowTablBt=Show+Table (last visited Feb. 1, 2006).

[279] There was no trading on the 19th day of September and December, 2004, as well as of February, March, and June, 2005. The closing price on the last trading day prior to the 19th was used.

[280] *See, e.g.*, Choo, *supra* note 252, at 426 nn.87-88, 434 (noting that Page and Brin sold approximately 500,000 shares at the time of the offering, and that prominent venture capital firms were in the process of cashing in over $5 billion in Google stock by the time the last lock-up agreement had expired). Since the fourth quarter of 2005, Google's stock has dropped precipitously due to (perhaps unduly) elevated expectations.

[281] *See supra* notes 69-74 and accompanying text (Table 1, U.S. IPO Returns, 1980-2005). *But cf.* Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 37) ("In

These results largely have been replicated by a French variant of Google's IPO, the *Mise en Vente*.[282] In this type of an auction the issuer meets with investment banks to set the final offering amount and a reserve price approximately a week before the IPO.[283] Prospective investors then submit bids and limit orders, which a central government body converts into a demand curve.[284] On the day of the IPO the company sets the final offering price, which is the same for all investors, as well as a price ceiling; any bids above this ceiling result in no allocation.[285] The purpose of the reserve and ceiling is to induce investors to "place bids that reveal their true valuation of the IPO firm,"[286] since "the issuing stockholders bear in principle the price risk as well as the very small risk that the issue cannot be sold at the minimum

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addition, if the [Google] share price was underpriced, the underpricing was negligible compared to underpricing that could be expected of such an IPO in the hands of Wall Street investment bankers."). Hurt suggests that a fairer comparison would be between Google and "similarly popular technology IPOs," and pointing to Dreamworks Animation SKG, which experienced a 38 percent first-day return. *See id.* at 28. Such a comparison, however, is hardly principled and is too limited to have any real utility.

[282] Biais & Faugeron-Crouzet, *supra* note 168, at 12. French issuers actually have a choice of three IPO types, two of which are auction-based: the *Offre à prix ferme*, or fixed-price offering, and the *Mise en Vente* or *Offre à prix minimal*, or French auction. *See, e.g.*, François Derrien & Kent L. Womack, *Auctions v. Bookbuilding and the Control of Underpricing in Hot IPO Markets*, 16 REV. FIN. STUD. 31, 34-7 (2003); Bruno Husson & Bertrand Jacquillat, *French New Issues, Underpricing and Alternative Methods of Distribution*, *in* A REAPPRAISAL OF THE EFFICIENCY OF FINANCIAL MARKETS 349, 351 (Rui M. C. Guimarães et al., eds., 1989) [hereinafter Husson & Jacquillat, *French New Issues*]. The fixed-price offering is akin to the bookbuilding method in that the issuer and underwriter negotiate the offering price; prospective investors place orders and then receive allocations on a pro rata basis. Derrien & Womack, *supra*, at 34. The third type of IPO method is orthodox bookbuilding, or *Placement Garanti*, which is actually more popular than the auction-based methods. *See id.* at 36. This paper only focuses on the *Mise en Vente* as it is the only one that incorporates bids into the pricing process, as was the case with Google's IPO and the OpenIPO. *See supra* note 261 and accompanying text; *infra* note 297 and accompanying text.

[283] *See, e.g.*, Derrien & Womack, *supra* note 282, at 34-35; Husson & Jacquillat, *French New Issues*, *supra* note 282, at 351. *See also* Bruno Biais et al., *An Optimal IPO Mechanism*, 69 REV. ECON. STUD. 117, 119 (2001) ("[T]he firm sets a reservation price and investors submit bids."). The pricing process begins months earlier, but consists only of discussions between the firm and its underwriter. Husson & Jacquillat, *French New Issues*, *supra* note 282, at 351.

[284] *See, e.g.*, Husson & Jacquillat, *French New Issues*, *supra* note 282, at 351 ("[T]he banks and the brokers gather the bids . . . and transmit them to the '*Société des Bourses Françaises*' (the governing body of the Paris Bourse–the SBF thereafter) which centralizes and process the bids."). *See also* Biais & Faugeron-Crouzet, *supra* note 168, at 12 ("As in the Book Building method, there is no formal explicit algorithm mapping demand into prices. But price adjustment in the *Mise en Vente* exhibits strong empirical regularities . . . ."). Biais and Faugeron-Crouzet ultimately conclude that "the *Mise en Vente* and the Book Building methods have similar incentive properties and can reach similar outcomes." *Id.* at 14. *But see infra* note 289.

[285] *See* Derrien & Womack, *supra* note 282, at 35 ("All bids greater than the maximum price are eliminated. Although there is no written rule, it appears that this maximum price is chosen so that 'unrealistic bids' are eliminated.").

[286] *Id.*

price."[287] Oversubscribed offerings can result in a postponement of the IPO or allocation on a pro rata basis.[288]

There are a small number of empirical studies examining underpricing in the *Mise en Vente*. An analysis of these IPOs from 1992 to 1998 by François Derrien and Kent Womack has found an average first-day return of 9.68 percent.[289] A more expanded study by Bruno Biais and Marie Faugeron-Crouzet has found average first-day returns of 13 percent from 1983 to 1996.[290] Similarly, a study from 1984 to 1991 by Bernard Belletante and Remy Paliard has found those returns to average 16.4 percent.[291]

Comparative analysis of these studies' results reveals that the *Mise en Vente* does not clearly outperform traditional U.S. IPOs. The *Mise en Vente* IPOs examined by Derrien and Womack did average less first-day returns than the 14.84 percent for U.S. IPOs during that period.[292] But from 1983 to 1996 U.S. IPOs averaged first-day returns of only 10.80 percent, which was less than the average for *Mise en Vente* IPOs found by Biais and Faugeron-Crouzet.[293] Similarly, the average first-day returns for French auctions from 1984 to 1991 was more than eight times the 2.4 percent average of U.S. IPOs during that time.[294] These mixed

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[287] Husson & Jacquillat, *French New Issues*, *supra* note 282, at 351. Meanwhile, the company's investment bank remains in the background, prepared to purchase or sell the securities if their price requires stabilization. *See* Bertrand C. Jacquillat et al., *French Auctions of Common Stock: New Issues, 1966-1974*, 2 J. BANKING & FIN. 305, 307 (1978).

[288] *Id.*

[289] Derrien & Womack, *supra* note 282, at 36. Interestingly, the most effective method is the *Offre à prix ferme*, or fixed-price offering, which averaged first-day returns of 8.88 percent over the same period, while the French bookbuilding method averaged first-day returns of 16.89 percent. *Id.* French underwriters, however, conduct road shows and meetings with investors over a markedly more compressed timeframe than their U.S. counterparts do. *See id.* at 37. Moreover, French firms "tend to choose their regular bank as their lead underwriter," in contrast to the competitive beauty pageant that is a hallmark, and arguably a strength, of American underwriters. *Id.* at 58. Accordingly, the underpricing data for French issuers using the bookbuilding method are likely an inferior reference point.

[290] Biais & Faugeron-Crouzet, *supra* note 168, at 16. An analysis of 60 *Mise en Ventes* from 1966 to 1974 found first-day returns of 2.69 percent that increased to 9.89 percent after the first-year. *See* Jacquillat et al., *supra* note 287, at 311-12. Prior to 1983, however, "only 2 to 10 with an average of 7 companies went public every year in France." Husson & Jacquillat, *French New Issues*, *supra* note 282, at 350. From 1983 to 1986 those first-day returns increased to 4.00 percent, as compared to a 4.50 percent first-day returns for French issuers using the bookbuilding method. *Id.* at 360. As a reference point, first-day returns for U.S. IPOs from 1983 to 1986 averaged 6.56 percent. Ritter, *supra* note 2, at 9.

[291] Benoît F. Leleux, *Post-IPO Performance: A French Appraisal*, 14 FIN. 79, 85 (1993) (citing Bernard Belletante & Remy Paliard, *Does Knowing Who Sells Matter in IPO Pricing? The French Second Market Experience*, 14 CAHIERS LYONNAIS DE RECHERCHE EN GESTION 42 (1993)).

[292] *Compare* Ritter, *supra* note 2, at 9, *with* Derrien & Womack, *supra* note 282, at 36.

[293] *Compare* Ritter, *supra* note 2, at 9, *with* Biais & Faugeron-Crouzet, *supra* note 168, at 16.

[294] *Compare* Ritter, *supra* note 2, at 9, *with* Leleux, *supra* note 291, at 85.

results can be summarized fairly by the conclusion reached by Biais and Faugeron-Crouzet for their own study, which is that the *Mise en Vente* appears to experience underpricing "very similar to those [underpricing levels] observed in the United States in the context of the Book Building procedure."[295]

Google's IPO is not the only domestic exception to bookbuilding. Since 1999 Hambrecht has taken firms public using a patented auction mechanism known as OpenIPO.[296] Prospective investors submit bids one to two weeks prior to the offering's effective date, and Hambrecht proceeds to calculate a clearing price.[297] As with Google, OpenIPO issuers typically reserve the discretion to set a final offering price different than the clearing price.[298] At the same time Hambrecht reserves the right to screen bids for fraud:

> W.R. Hambrecht + Co may reject bids that it believes could have a manipulative, disruptive or otherwise adverse affect [sic] on the offering and reserves the right, under exceptional circumstances, to alter the method of allocation described here to ensure a fair and orderly distribution of the issuing company's shares.[299]

When the offering is over-subscribed, Hambrecht allocates shares on a discretionary pro-rata basis.[300]

The OpenIPO touts four primary benefits for investors. First, individual and institutional investors enjoy equal access to participating in an IPO.[301] Second, these investors are permitted to submit multiple,

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[295] Biais & Faugeron-Crouzet, *supra* note 168, at 16. During the period examined by Biais and Faugeron-Crouzet the first-day return for all IPOs averaged 10.8 percent. Ritter, *supra* note 2, at 9. For the *Mise en Vente*, price adjustment, or the ratio of final offering price to reserve price, averaged 17.4 percent. Biais & Faugeron-Crouzet, *supra* note 168, at 16.

[296] *See* W.R. Hambrecht + Co., *OpenIPO: Frequently Asked Questions*, http://www.wrhambrecht.com/ind/auctions/openipo/faq.html (last visited Feb. 1, 2006) (describing the method as "[b]ased on an auction system designed by Nobel Prize-winning economist William Vickrey"). The patentability of this process, however, is questionable. *See infra* note 382. Hambrecht also advised Google during its IPO. *See* Nocera, *supra* note 34, at 42.

[297] *See* W.R. Hambrecht + Co., *OpenIPO: How To Place A Bid*, http://www.wrhambrecht.com/ind/auctions/openipo/bid.html (last visited Feb. 1, 2006). *See also* Hambrecht, *OpenIPO: Pro-Rata Allocation*, http://www.wrhambrecht.com/ind/auctions/openipo/prorata.html (last visited Feb. 1, 2006); Hambrecht, *Sample Auction (Flash demo)*, http://www.wrhambrecht.com/ind/auctions/openipo/faq.html# (last visited Feb. 1, 2006).

[298] *See, e.g.*, W.R. Hambrecht + Co., *OpenIPO: How It Works*, http://www.wrhambrecht.com/ind/auctions/openipo/index.html# (last visited Feb. 1, 2006).

[299] *See* W.R. Hambrecht + Co., *Sample Auction*, http://www.wrhambrecht.com/ind/auctions/openipo/pro_guide.html# (last visited Feb. 1, 2006).

[300] *See* W.R. Hambrecht + Co., *OpenIPO: Pro-Rata Allocation*, http://www.wrhambrecht.com/ind/auctions/openipo/prorata.html (last visited Feb. 1, 2006).

[301] W.R. Hambrecht + Co., *OpenIPO: How It Works*, http://www.wrhambrecht.com/ind/auctions/openipo/index.html# (last visited Feb. 1, 2006).

multi-tiered bids that indicate variable interest levels in different share prices.[302] Third, all investors receive the same price.[303] And, finally, shares are allocated on an equal and impartial basis.[304]

Since 1999 Hambrecht has completed fifteen OpenIPOs.[305] Table 4 lists their final offering size and price:

TABLE 4
OPENIPO OFFERING AMOUNT & PRICE, 1999-2005[306]

OFFERING DATE	FIRM	OFFERING AMOUNT ($M)	OFFERING PRICE
04/09/99	Ravenswood	$11.5	$10.50
06/22/99	Salon.com	$25.0	$10.50
12/08/99	Andover.net	$82.8	$18.00
05/17/00	Nogatech	$42.0	$12.00
01/25/01	Peet's Coffee & Tea	$26.4	$8.00
05/02/01	Briazz	$16.0	$8.00
05/29/02	Overstock.com	$39.0	$13.00
09/25/03	Red Envelope	$30.8	$14.00
10/30/03	Genitope	$33.0	$9.00
08/05/04	New River Pharmaceuticals	$33.6	$7.50
03/15/05	BofI Holding	$35.1	$11.50
05/02/05	Morningstar	$140.8	$18.50
07/14/05	Cryocor	$40.8	$11.00
09/28/05	Avalon Pharmaceuticals	$28.9	$10.50
11/17/05	Dover Saddlery	$27.5	$10.00
MEAN		$40.9	$11.47
MEDIAN[307]		$76.2	$13.00

[302] *Id.*

[303] W.R. Hambrecht + Co., *OpenIPO: Potential Benefits*, http://www.wrhambrecht.com/ind/auctions/openipo/benefits.html (last visited Feb. 1, 2006).

[304] *Id.*

[305] Hambrecht was retained for a sixteenth OpenIPO by an online bookseller, Alibris, but that was aborted. *See, e.g.*, .Alan J. Berkeley et al., *Some Background and Simple FAQs About Dutch Auctions and the Google IPO*, SK003 ALI-ABA 239, 243 (2004) ("There was apparently little response, and Alibris announced it was withdrawing the offering proposal. One has to wonder if the Alibris offering could have proceeded and succeeded if there was a traditional active marketing effort through well compensated investment bankers . . . .").

[306] Firm (Offering Amount $M) and Offering Price data from W.R. Hambrecht + Co., http://www.wrhambrecht.com/ind/auctions/completed.html (last visited Feb. 1, 2006). Pro rata distribution percentage data from W.R. Hambrecht + Co., http://www.wrhambrecht.com/ind/auctions/index.html (last visited Feb. 1, 2006). Date and Return data for all firms except Ravenswood from Hoover's Online, *supra* note 2. Date and Return data for Ravenswood from *Wall Street Journal*, Apr. 12, 1999, at 1, and NASDAQ, *Daily Stock Price Record*, Oct. 8, 1999.

[307] The median for returns was calculated with absolute values.

Table 5 summarizes their performance to date, arranged chronologically:

TABLE 5
OPENIPO RETURNS, 1999-2005[308]

OFFERING DATE	FIRM	PRO RATA DBN[309]	FIRST-DAY RETURN	3-YR. RETURN[310]
04/09/99	Ravenswood	89%	3.62%	(2.37%)
06/22/99	Salon.com	84%	(5.00%)	(99.05%)
12/08/99	Andover.net	97%	252.11%	4.00%
05/17/00	Nogatech	---	(21.58%)	(3.33%)
01/25/01	Peet's Coffee & Tea	72%	17.25%	113.00%
05/02/01	Briazz	70%	0.38%	(98.25%)
05/29/02	Overstock.com	60%	0.23%	199.62%
09/25/03	Red Envelope	56%	3.93%	---
10/30/03	Genitope	89%	11.11%	---
08/05/04	New River Pharm.	98%	0.00%	---
03/15/05	BofI Holding	82%	0.00%	---
05/02/05	Morningstar	65%	8.38%	---
07/14/05	Cryocor	59%	0.90%	---
09/28/05	Avalon Pharm.	---	0.00%	---
11/17/05	Dover Saddlery	---	0.01%	---
MEAN[311]		76.75%	18.09%	74.23%
MEDIAN[312]		76.50%	126.06%	101.00%

[308] Firm (Offering Amount $M) and Offering Price data from W.R. Hambrecht + Co., http://www.wrhambrecht.com/ind/auctions/completed.html (last visited Feb. 1, 2006). Pro rata distribution percentage data from W.R. Hambrecht + Co., http://www.wrhambrecht.com/ind/auctions/index.html (last visited Feb. 1, 2006). Date and Return data for all firms except Ravenswood from Hoover's Online, *IPO Central - IPO Performance*, http://www.hoovers.com/busines-information (last visited Feb. 1, 2006). Date and Return data for Ravenswood from *Wall Street Journal*, Apr. 12, 1999, at 1, and NASDAQ, *Daily Stock Price Record*, Oct. 8, 1999.

[309] E-mail from Matthew Regan, Director of Brokerage Services, W.R. Hambrecht + Co., to Peter B. Oh, Assistant Professor of Law, William Mitchell College of Law (Aug. 22, 2005) (on file with author).

[310] E-mail from Jay R. Ritter Cordell Professor of Finance, University of Florida Warrington College of Business, to Peter B. Oh, Assistant Professor of Law, William Mitchell College of Law (Aug. 1, 2005) (utilizing data from Center for Research in Securities Prices) (on file with author). Returns for Andover.net, Nogatech, and Ravenswood are for less than three years. Andover.net and Ravenswood were acquired by other corporations, respectively, in June, 2000, and July, 2001. Nogatech merged with another corporation in October, 2000.

[311] The mean for returns was calculated with absolute values.

[312] The median for returns was calculated with absolute values.

Hambrecht has conducted roughly two OpenIPOs per a year. These OpenIPOs have been distributed roughly throughout Hambrecht's six-year existence, with no unusual decrease or increase in number during this entire period.[313]

As a preliminary matter, there are significant caveats to this data. The paucity of total OpenIPOs obviously accords each firm's performance unduly significant distortive weight. For instance, the average first-day returns for all OpenIPOs drops from 18.09 percent to 1.37 percent if one excludes Andover.net, as some might be inclined to contend on the basis of firm-specific reasons.[314] While the data could be restyled in such ways, the better approach is to regard Table 5 in its entirety as just a small statistical sample with a limited capacity to support causal inferences–either for or against Dutch IPOs. This is particularly the case in light of the OpenIPO's novelty. The first two offerings conducted by Hambrecht–Ravenswood and Salon.com–experienced low first-day returns.[315] These results may be attributable to any number or combination of factors, ranging from relatively accurate pricing to market apprehension about the specific firms or the process itself; certainly this last factor comports with investor expectations for a first-day pop and the suggested explanation for the offering price set by Andover.net, the third OpenIPO conducted by Hambrecht.[316]

Moreover, all of the data spans a period of time in which there were dramatically variable market conditions. Five OpenIPOs–Andover.net, Nogatech, Peet's Coffee & Tea, Ravenswood, and Salon.com–occurred during the anomalous internet bubble period, when investors and venture capitalists were particularly exuberant.[317] Accordingly, even though these OpenIPOs' average first-day returns of 49.28 percent were superior to the 63.3 percent of all bubble IPOs, the comparison is less illuminating than the fact that both types of IPOs suffered from extremely severe

[313] Broken down by year, the number of OpenIPOs is as follows: 3 (1999), 1 (2000), 2 (2001), 1 (2002), and 2 (2003), 1 (2004), and 3 (2005). *See supra* notes 308-310 and accompanying text (Table 4, OpenIPO Returns, 1999-2005). *See also* Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 10) ("As these numbers make clear, very few companies launch online IPOs, barely one or two a year.").

[314] *See, e.g.*, Biais & Faugeron-Crozet, *supra* note 168, at 5 (noting that, in Andover.net's offering, "OpenIPO actually set the IPO price at a significant discount relative to the market clearing price, more in line with the rules governing the book building or the *Mise en Vente* than with those of the Dutch auction"). *But see, e.g.*, Berkeley et al., *supra* note 305, at 242 (reporting that Andover.net lowered its clearing price "to reduce the possibility of after market disappointment following offering exuberance and in an effort to build a loyal shareholder base"). Admittedly, this might be a sufficiently principled basis to exclude Google's IPO as well. But that principle consists of a practice by (and, more precisely, the intent of) issuers using auction-based IPOs, rather than a feature of the method itself.

[315] *See supra* notes 308-310 and accompanying text (Table 4, OpenIPO Returns, 1999-2005).

[316] *See supra* note 106 and accompanying text. *But see* Berkeley et al., *supra* note 305, at 242 ("Of course, companies that select the Dutch auction approach are likely to self-select and be predisposed to the approach for collateral social reasons, be attracted by the novelty, and be willing to extend it extra tolerance.").

[317] *See supra* notes 154-159 and accompanying text.

underpricing.[318] The same caution applies to the four post-bubble OpenIPOs–Briazz, Genitope, Overstock.com, and Red Envelope–whose average first-day returns of 3.91 percent are superior to the 11.29 percent of all traditional IPOs from 2001 to 2005, but are more meaningful as reflections of that period's generally scarce venture capital and offerings.[319]

In any event the performance results for OpenIPOs are mixed. By one account, Bill Hambrecht has said "that an auction with a first-day pop of 10% or more is a failure."[320] According to this objective metric, OpenIPOs on average have failed. From a comparative standpoint, OpenIPOs have outperformed traditional IPOs over Table Four's entire timeframe, 1999 to 2005, in terms of both first-day returns, 18.09 versus 43.87 percent, and three-year returns, 74.23 versus 110.23 percent.[321] The results become less clear, however, when one segregates the internet bubble data on the basis that involve peculiar dynamics.[322] Non-bubble OpenIPOs[323] do average a significantly lower first-day return, 3.84 percent, than traditional IPOs, 7.72 percent, over the same period;[324] but the average three-year return for these OpenIPOs, 136.96 percent, is over six times that of traditional IPOs, 20.37 percent.[325] The available data thus suggests that OpenIPOs–both non-bubble and overall–may be as, if not more, susceptible to unusually dramatic price changes–either positive or negative–than traditional IPOs.

Arranging the data by offering size provides another interesting perspective. The offering price for the average OpenIPO is $11.47 with a modest offering amount of $40.9 million, which drops to $33.7 million if one excludes the sizable Morningstar offering.[326] While nine of the

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[318] For instance, even during the height of the internet bubble, SEC Commissioner Laura Unger cautiously observed that the doubling of Peet's Coffee & Tea's stock during the first week of trading, while "belying the notion that an auction ensures that the issuing company raises the maximum amount of money that the market will bear," also "perhaps prov[es] that secondary market in IPOs is still vigorous." Laura S. Unger, *Raising Capital on the Internet*, 69 U. CIN. L. REV. 1205, 1207-08 (2001).

[319] *See supra* note 80 and accompanying text.

[320] Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 26). Arguably the benchmark should be Hambrecht's commission rate. *See, e.g.*, Ritter & Loughran, *supra* note 71, at 8 ("[G]iven the use of bookbuilding, the joint hypothesis that issuers desire to maximize their proceeds and that underwriters act in the best interests of issuers can be rejected whenever average underpricing exceeds [the standard commission rate of] seven percent.").

[321] Ritter, *supra* note 2, at 9. The comparison of three-year returns includes OpenIPO companies that were either acquired or merged beforehand, *see supra* note 310, and obviously does not include any post-2002 IPOs.

[322] *See supra* note 17.

[323] These are all the OpenIPOs that did not occur during the internet bubble period.

[324] Ritter, *supra* note 2, at 9.

[325] *Id.*

[326] *Cf. supra* note 314. *But cf.* Christopher Windham, *Dutch Auction IPOs Could Lure More Takers; Attraction Grows as Google Hits $300 a Share*, 17 INV. DEALERS DIG. 13, 14 (2005) ("Equities observers believe Morningstar's IPO more accurately portrays a successful Dutch auction IPO.").

twelve OpenIPOs experienced first-day returns under five percent, the three largest OpenIPOs–Andover.net, Morningstar, and Nogatech–all experienced significant pops or drops on the first-day of trading.[327] This at least comports with numerous studies finding auction returns may be affected by larger offerings, which may include more risk-seeking or uninformed investors.[328]

In sum the empirical evidence on auction-based IPOs hardly constitutes resounding proof of their superiority over traditional bookbuilding. Of the three groups analyzed, the most comprehensive data set comes from the *Mise en Vente*. And the two most comprehensive studies of these auction-based French IPOs yield first-day returns inferior to those from all U.S. IPOs over the same period.[329] Clearly, these results also have not been even approximated by Google's IPO, the largest such U.S. auction-based offering.[330] The offering size, along with peculiar legal snafus,[331] limits that issue's utility as a case study or even a single data point.[332] But the degree of underpricing is consistent with the data for OpenIPOs in suggesting that larger offerings tend to suffer from greater levels of inaccurate pricing and larger fluctuations in value over the long-run.[333] Comprehensive data eventually may be available to test reliably these tentative conclusions. At the very least, however, the data presented here fails to demonstrate conclusively that auction-based IPOs price newly issued shares more

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[327] There is no correlation between the size of the offering and the amount of underpricing. While only slightly smaller than Nogatech's, the Overstock.com and Cryocor OpenIPOs experienced minimal underpricing.

[328] *See, e.g.*, Anita Indira Anand, *Is the Dutch Auction IPO a Good Idea?* (Sept. 2005) (manuscript at 11-12) ("Retail shareholders . . .have a greater impact on pricing in a Dutch auction than they would have in a traditional underwritten offering. Because of their lack of sophistication, these investors can make the market less efficient."), *available at* http://ssrn.com/abstract=794464. *See also generally* Ann E. Sherman, *Global Trends in IPO Methods: Book Building Versus Auctions with Endogenous Entry* (Dec. 2004) (finding auctions with larger pools of bidders are susceptible to more inaccurate pricing), *available at* http://ssrn.com/abstract=276124.

[329] *See supra* notes 290-291, 293-294, and accompanying text.

[330] *See supra* note 276 and accompanying text.

[331] *See, e.g.*, Hurt, *What Google Can't Tell Us*, *supra* note 37 (manuscript at 33) ("Unfortunately, Google does not make a perfect poster child for auctions, either pro or con, because of Google's uniqueness as an issuer. Among other characteristics, the Google offering was one of the largest in U.S. history."); Windham, *supra* note 326, at 14 ("[T]he Google brand was widely recognized and thus already on the radar of most investors. 'This aspect made the IPO very unusual,' says Jay Ritter . . . who as a consultant advised Google to use the Dutch auction method."). In particular Google's cachet with household investors may have given the company unusual leverage in negotiating with investment banks. *See, e.g.*, Fleischer, *supra* note 34 (manuscript at 20-25) (describing Google's popularly geekish and unorthodox corporate image); Hurt, *Moral Hazard*, *supra* note 37, at 769 ("Unlike many start-ups, Google did not have to court investment banks or rely on VC relationships to make introductions. Because of this power Google was uncommonly able to determine unilaterally who would underwrite the IPO and how the IPO would proceed.").

[332] *See supra* notes 268-276 and accompanying text.

[333] *See supra* note 328.

accurately than traditional bookbuilding, to the extent that underpricing is undesirable.[334]

Far more certain is that the practice of auction-based IPOs does not square with the remaining claims of their chief proponents. Prospective investors' bids for Google, the *Mise en Vente*, and the OpenIPO are a significant, but ultimately only contributory, factor in the ultimate offering price. Issuers in all these auction-based IPOs reserve, and almost invariably exercise, a discretionary right to set this price.[335] Moreover, Google's ultimate allocation of shares both frustrated and surprised bidders,[336] which is consistent with the variable pro rata percentages across all OpenIPOs.[337] These two attributes of domestic auction-based IPOs severely compromise their popular image as a more democratic process.[338] And while all successful bidders do receive the same offering price, not everyone is assured of qualifying to be a bidder. Reserve requirements for opening an account, as was the case in Google, can be prohibitively expensive for retail investors.[339] And while opening access to individual and institutional bidders avoids any systemic spinning, this concern largely seems pyrrhic due to the new and proposed NASD regulations.[340]

B. *Strategic Bidding*

Unlike English or ascending-bid auctions, Dutch and French bidders do not expose themselves to the risk of a true "winner's curse." This is because the lowest bid wins a Dutch auction, and in a Dutch IPO the lowest bid theoretically determines the clearing and offering price for all winning investors.[341] As the ultimate winner never pays more than

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[334] *See supra* notes 107-110 and accompanying text.

[335] *See supra* notes 266-267, 285-286, 298, and accompanying text.

[336] *See supra* note 33.

[337] *See supra* note 309 and accompanying text. Data on pro rata percentages for the *Mise en Vente* are not available.

[338] A more fundamental question, beyond the scope of this paper, is whether greater democracy in the IPO process is desirable, much less efficient. Anita Anand has provided persuasive challenges in this regard. Specifically, she contends that Dutch IPOs may be inferior to bookbuilding in price discovery due to increased noise from greater inclusion of unsophisticated retail investors. *See* Anand, *supra* note 328 (manuscript at 10-12, 22-24). She also contends that offering markets, when understood as a public good, already are well-protected by existing fiduciary duties. *See* Anand, *supra* note 328 (manuscript at 32-34); *see also supra* note 126. I agree with Anand that completely displacing bookbuilding with Dutch IPOs, as some have advocated, *see supra* notes 39, 44, and accompanying text, is unnecessary (if not unjustified), especially when the "most efficient offering mechanism will surely vary by issuer," Anand, *supra* note 328 (manuscript at 33).

[339] *See, e.g.*, Choo, *supra* note 252, at 418-27.

[340] *See supra* notes 132-136 and accompanying text.

[341] In Dutch IPOs issuers invariably reserve the discretion to set the final offering price, but this price usually takes into account prospective investors' bids as a proxy for market demand. *See supra* notes 266-267, 298, and accompanying text.

anyone else,[342] a bid reflects a belief about what an IPO share's ultimate offering price will be, and not that prospective investor's true valuation.[343] There is thus no regret in the orthodox sense.

Dutch IPO bidders instead risk their allocations. Prospective investors who submit a bid higher than the clearing price may receive only a portion of the requested share allocation. Indeed, that may be the case even for prospective investors who submit a bid that matches the clearing price.[344] Unfortunately, the mechanism for allocating shares is opaque, since neither Google nor Hambrecht has publicized their respective processes,[345] presumably to avoid facilitating the means for committing fraud.[346] In this vein both Google and OpenIPOs feature policies reserving the right to ignore bids that appear to be part of a manipulative price strategy.[347]

There are, however, other ways to undermine a Dutch IPO. The linchpin is the extent to which an issuer factors prospective investors' bids into the clearing price. Even when an issuer reserves the right to set that price,[348] the role given to a prospective investor's preferred price and allocation is a central point of distinction between the Dutch IPO and the bookbuilding methods.[349] Indeed, this is a characteristic often cited in support of the claim that the method can democratize the public offering process.[350]

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[342] Bids less than or well above the final clearing price will yield no allocation. To be sure, such a bidder will experience regret, but not of the winner's sort.

[343] *But see* Dorton, *supra* note 235, at 1391 ("[B]idders in an auction have incentives to value the securities accurately. In an appropriately designed auction, the fear of losing a desirable purchase opportunity discourages undervaluation. Any tendency to overvalue the securities is countered by the fear of paying more than the securities are worth.").

[344] *But see* Anand, *supra* note 328 (manuscript at 13) (contending that bids in excess of one's true valuation may increase the probability of actually receiving an allocation, and may be a manipulative strategy).

[345] *But see* Biais & Faugeron-Crozet, *supra* note 168, at 14 (mathematically defining the price function in a *Mise en Vente*).

[346] Google, *Form S-1*, *supra* note 238, at 25. Hambrecht also protects its process with a patent. *See infra* note 249.

[347] *See* Google, *Amended Form S-1*, *supra* note 28, at 34; W.R. Hambrecht + Co., *Sample Auction*, http://www.wrhambrecht.com/ind/auctions/openipo/pro_guide.html# (last visited Feb. 1, 2006).

[348] *See supra* notes 266-267, 298, and accompanying text.

[349] *See supra* notes 42, 249, 302, and accompanying text.

[350] William Hambrecht, for instance, has presented the Dutch IPO as a method that "replac[es] arbitrary pricing and preferential allocation with a system that objectively establishes the full demand curve for an IPO and allocates to those investors willing to pay the highest price." William R. Hambrecht, *Request for Comment on the Proposed Rule Governing Allocations and Distributions of Shares in Initial Public Offerings*, http://www.wrhambrecht.com/ind/strategy/bill_pov/200401/wrhco20040107.pdf 6 (Jan. 7, 2004); *see also* Hambrecht, *supra* note 11, at 2-3 (advocating that "underwriters use an open auction or some other mechanism that allows non-preferential allocation to determine the full demand curve for an offering and to price the IPO based on that information").

Democracy is not cheap, and its price comes in a corresponding ability of prospective investors to bid their allocations strategically.[351] Various models have demonstrated that, "under certain scenarios, . . . a rational bidder will profit from lowering the amount of shares it offers to buy in the IPO."[352] In essence requesting a smaller allocation can affect the market demand, thereby altering the clearing price to increase the strategic bidder's utility.[353] Bidders should engage in this strategy when that increased utility exceeds the costs of going into the aftermarket and purchasing the remaining shares to meet her original demand.[354] To accomplish this bidders must estimate the equilibrium price in an untainted auction, gauge market elasticity, and request a sizable allocation of shares, all of which "[f]airly sophisticated investors, such as investor bankers, are well positioned to calculate" and do.[355] In this way bidders can manipulate the allocation process, possibly resulting in underpriced shares and diminished issuer proceeds.[356]

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[351] This is consistent with the relationship between risk and value. *See supra* notes 343-344 and accompanying text.

[352] Mira Ganor, *A Proposal to Restrict Manipulative Strategy in Auction IPOs* 13 (July 2004), *available at* http://ssrn.com/abstract=52243; *see also* Biais & Faugeron-Crozet, *supra* note 168, at 5 ("In [the Dutch] auction, bidders can tacitly collude by placing demand functions such that the market clearing price is very low, and such that, any attempt to bid more aggressively, to gain market share, would push prices too high to be attractive.").

[353] *See, e.g.*, Biais & Faugeron-Crozet, *supra* note 168, at 5 ("[T]he optimal strategy of the investors is to shade their bids rather than to 'make a bid at the maximum price at which they are comfortable owning shares of the issue' as advised on Open IPO's website."). Provided P_h, the price at which an investor truly values a share, exceeds P_{IPO}, the price that an untainted auction would produce, "the bidder must not lower his bid by more than half of his original amount to maximized the profits from the strategy: $Q_d < \frac{1}{2}Q_h$." Ganor, *supra* note 352 (manuscript at 18).

[354] Ganor, *supra* note 352 (manuscript at 16) ("[T]he strategy always assures a profit. This is because the bidder buys the same amount of shares, only now he does this in two stages–first in the auction and later in the aftermarket -- but he pays a lower price for some of the shares, and he pays the same price he would have paid without the strategy, for the rest of the shares."). Conducting an IPO via an auction thus meets the two conditions for profitable manipulation, "first, trading must cause the price of the relevant security to rise; and second, the manipulator must be able to sell at a price higher than the price at which the manipulator purchase." Daniel R. Fischel & David J. Ross, *Should the Law Prohibit "Manipulation" in Financial Markets?*, 105 HARV. L. REV. 503, 512 (1991). *But see generally* Steve Thel, *$850,000 in Six Minutes—The Mechanics of Securities Manipulation*, 79 CORNELL L. REV. 219 (1994) (contending that manipulation is not self-deterring, and that trades occasionally can affect prices). These conditions pertain to aftermarket trading, but the point here is that an auction introduces the problem of manipulation at the pre-IPO stage in a way that arguably is not self-deterring.

[355] Ganor, *supra* note 352 (manuscript at 17); *see also* Biais & Faugeron-Crozet, *supra* note 168, at 11-12 (contending that "the residual supply function faced by each investor is rather inelastic" in a pure Dutch auction). Ganor rightly points out that "[s]ome variations on the Dutch IPO auction make it even easier for the investors to calculate these variables." *Id.* at 18 n.30 (citing Christine Hurt, *Moral Hazard*, *supra* note 37, at 54 ("During [the Wit Capital Corporation] auction, any Internet user could view the aggregate demand in the auction at each price point, making the pricing of the shares virtually transparent.")).

[356] *See, e.g.*, Ganor, *supra* note 352 (manuscript at 20).

This reduced allocation strategy works around an auction-based IPO's primary antifraud devices. The strategic bidder only scales back the requested allocation of shares, and not the requested price, which may make detecting such strategic bidding rather difficult.[357] An issuer might be able to compare a prospective investor's bid across various IPOs, but this may incur prohibitively high search and enforcement costs. More visible is when the strategic bidder goes into the aftermarket to purchase additional shares, but, "without the bidder trading on the days following the IPO, the restricted strategy cannot be detected . . . ."[358] The same holds true for a lock-up agreement or regulatory restriction on aftermarket purchases. Such prohibitions would diminish the number of strategic bidders, but there still would be some whose expected utility would exceed the cost of waiting until their right to purchase shares is restored. And instituting a reserve price is likely to be ineffective.[359] Since the clearing price is a function of the prospective investors' bids, a reserve price might distort the demand curve and thus is a risky prophylactic maneuver.[360]

The reduced allocation strategy, however, may enjoy only limited success with existing types of Dutch IPOs.[361] To be successful, strategic bidders first must be assured of receiving an allocation; this is because the strategy requires a precise comparison between the number of shares the bidder would receive in an untainted auction versus what the bidder expects to receive in the tainted auction.[362] Only when equipped with this knowledge can the strategic bidder profit from reducing the requested allocation.[363] This is easily accomplished in an English IPO, where the bidder with the highest valuation simply submits the highest price,[364] the dominant strategy for obtaining an optimal Pareto equilibrium.[365] In the case of both Google and the OpenIPO, however, allocations are based on a opaque formula in which market demand is just a variable.[366] Payment is thus not purely a function of bids, and so

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[357] *See id.* ("[T]he strategy manifests itself only as an offer for fewer shares, and Q_h, the real amount the bidder would ask for without the strategy, cannot be proven.").

[358] *Id.*

[359] *See supra* note 198 and accompanying text.

[360] As Google demonstrated, altering the clearing price in the eleventh hour can engender heavy trading on the first day that may drive the share price either upwards or downwards, a negative signal for a Dutch IPO. *See supra* note 320 and accompanying text.

[361] The analysis from both Ganor as well as Biais and Faugeron-Crozet concerns Dutch IPOs and properly focuses on valuation instead of price. Both of Ganor's illustrations, however, envision a strategic bidder with the highest valuation of an IPO's shares, a scenario that is dramatically more complicated in a Dutch rather than English format. The Dutch IPO, for instance, involves multiple sealed-bids that make it extremely difficult for a strategic bidder to know other people's valuations.

[362] *See supra* note 353 and accompanying text.

[363] *See supra* note 354 and accompanying text.

[364] *See* Ganor, *supra* note 352 (manuscript at 10-11, 13-15) (presenting two illustrations in which the strategic bidder values the shares the most).

[365] *See supra* note 189 and accompanying text.

[366] *See supra* notes 266-267, 298, and accompanying text.

English and Dutch IPOs cannot be equated pursuant to the RET.[367] Further, the formula's opacity,[368] combined with the current paucity of Dutch IPOs, makes reverse-engineering difficult. This erodes the precision with which bidders can reduce their requested allocations. And by opening access to all investors, Dutch IPOs allow heterogeneous and irrational bids that cast some doubt on the ability of strategic bidders to reliably assess market elasticity and predict the final offer price.

A simpler and superior scheme would be to form a bidding ring. An elementary ring might involve prospective investors merely setting up a mechanism, such as a website, by which they can identify each other and share bidding information.[369] That mechanism would collect and disseminate data on the number of parties interested in submitting bids as well as their preferred allotment and valuation of IPO shares. This data in turn would facilitate the ability of all ring members to estimate market demand and execute a reduced allocation strategy.[370] And, as the members would simply be exchanging data, and not coordinating bids, such an elementary ring would not require an agreement.[371] Accordingly, detecting such a tacit strategy would be extremely difficult.[372]

More sophisticated rings might involve coordinated collusion strategies. Prospective investors[373] could agree to submit multiple bids,[374] either as individuals or as a group, of different requested allocations and prices. These bids can be of the actual or phantom sort,[375] and spreading them can accomplish two objectives. First, ring members can minimize the risk of receiving meager or partial allocations. And, second, the bids can manipulate the demand curve.[376]

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[367] *See supra* note 183 and accompanying text.

[368] *See supra* notes 266-267, 298, and accompanying text.

[369] Sealed-bids were used for Google and in all OpenIPOs.

[370] *See supra* note 355 and accompanying text.

[371] More sophisticated rings might prefer an agreement or some kind of arrangement to ensure that the members supply reliable bid information

[372] To be sure, an agreement would enhance the ring's ability to enforce itself, and thus be stable. *But see supra* note 221. But a simple and noncommittal arrangement stands a better chance of attracting a larger pool of institutional and retail investors, and thus more complete market demand information.

[373] There is no reason why only prospective investors might be interested in forming a bidding ring. Issuers also could submit actual or phantom bids to drive down the clearing price.

[374] Both Google and the OpenIPO permit prospective investors to submit multiple bids.

[375] *See supra* notes 210-212 and accompanying text. Issuers also can submit "shill" bids, in which either they or their associates attempt to drive up the price and generate market demand.

[376] This manipulation is not restricted to lowering the clearing price. Affluent repeat investors could benefit from a higher clearing price, which might diminish market demand and thus allow only purchasers of significant blocks of shares to take advantage of pricing spreads. Moreover, highly sophisticated investors might attempt to manipulate the demand curve in an effort to glean more information about the issuer's allocation formula and private self-valuation.

The problem inheres within every bidder's profit function. Provided the expected short-run or long-run return exceeds a prospective investor's IPO valuation, there is an incentive to participate in a bidding ring. In the short-run a ring member can benefit from either a simple discrepancy in valuation or an anticipated first-day pop. In the long-run a ring member can benefit from future business with other members, either another IPO ring or some other unrelated venture. Arguably, these incentives may apply most strongly to retail investors, who are often too disparate and infrequent participants in IPOs to act in a risk-averse or reputation-preserving manner.[377] At the same time institutional investors may be better positioned to conduct the sort of subsequent, or knockout, auction necessary to distribute the ring's proceeds.

Regardless, bidding rings capitalize on a primary advantage of auction-based IPOs. Under the bookbuilding method pre-IPO allocations are made on a discretionary basis to a select group of individual and institutional investors.[378] Dutch IPOs, however, provide access to all investors; this creates a dual market in which non-ring members intermingle with, and thus disguise the presence of, ring members.[379] Broadening the pool of prospective investors diversifies the number and types of submitted bids, which suggests that bidding rings may be more likely to occur in bigger IPOs. As a result, such IPOs may be more prone to polarized results, in which ring members succeed at the expense of legal bidders. Accordingly, institutional investors might suffer less than retail bidders, who tend to be disproportionately uninformed and unsophisticated.[380] Bidding rings, therefore, threaten to limit the ability of auction-based IPOs to deliver more democratic access.

While scarce,[381] some evidence of bidding rings does exist. Priceline.com, for instance, features a patented online Dutch auction process for travel-related services.[382] Bidders name the maximum price and quantity they are willing to purchase, and the company's engine matches these sealed-bids to the available supply. This process, however, has been circumvented to an extent by an elementary bidding ring. A separate website, www.biddingfortravel.com, has emerged

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[377] Again, to the extent that such investors are one-time or limited players in a bidding ring, there is a corresponding decrease in its capacity for self-enforcement and stability.

[378] *See supra* notes 65-68 and accompanying text.

[379] *See supra* notes 210-212 and accompanying text.

[380] *See supra* notes 328, 338, and accompanying text.

[381] *See, e.g.*, Thel, *supra* note 354, at 280-81 ("Aside from being diverse and transitory, the details of common manipulative techniques are hard to discover. The success of many manipulative schemes often depends upon the target's ignorance . . . [t]hus, manipulative practices are likely to be disguised, and accordingly, they are hard to study.").

[382] *See, e.g.*, Eugene R. Quinn, Jr., *Abusing Intellectual Property Rights in Cyberspace: Patent Misuse Revisited*, 28 WM. MITCHELL L. REV. 955, 956-57 (2002) (noting that "[t]his patent purports to give Priceline.com the exclusive right to what is known as a Dutch auction, something that is hardly new or unobvious. . . . Apparently, the fact that a Dutch auction has never been done online makes this particular business method patentable.").

whose primary goal is "to promote informed bidding when using priceline.com's (US) travel products."[383] Individuals post information ranging from failed and winning bids to re-bidding to anecdotal evidence about the engine's mechanics.[384] While the forum does prohibit bidders from attempting to re-sell winning bids,[385] contacting each other or even setting up an alternative place to conduct a knockout auction is hardly formidable.

In sum the use of auction-based IPOs introduces a unique set of manipulative tactics. Both the reduced allocation strategy and bidding rings are premised on features specific to auctions. By incorporating bids into the demand curve, issuers provide prospective investors an incentive to engage in strategic behavior, either by individually reducing their requested allocations or jointly sharing information and profits. These tactics, however, are largely inapplicable to issuers that utilize the bookbuilding method. Through road shows and meetings underwriters construct a market demand curve based on information from pre-selected investors;[386] because they tend to be known and repeat customers, they have a reputational interest in providing reliable information in exchange for issuer information or preferential treatment. To be sure, the bookbuilding method is not immune from manipulation or fraud. But auction-based IPOs introduce a different set of potential problems that should be discounted from this alternative method's proponents' claims and considered within any fair comparative assessment.

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[383] BiddingforTravel.com, http://p070.ezboard.com/bpricelineandexpediabidding (last visited Feb. 1, 2006).

[384] *See, e.g.*, *Beware of the Priceline Raise Your Bid Screen*, http://p070.ezboard.com/fpricelineandexpediabiddingbiddingtips.showMessage?topicID=4.topic (last visited Aug. 25, 2005) (advising bidders to disregard priceline.com's warning about unreasonably low bids on the basis that the engine does not take into consideration periods of low airline load factors or low hotel occupancy levels); *Tips on How to Rebid Right Away*, http://p070.ezboard.com/fpricelineandexpediabiddingbiddingtips.showMessage?topicID=22.topic (last visited Aug. 25, 2005) (providing instructions on how to re-bid on flights successfully).

[385] *See Requests to Re-Sell Are Off Topic and Will Be Removed*, http://p070.ezboard.com/fpricelineandexpediabiddingpostingguidelines.showMessage?topicID=23.topic (last visited Aug. 25, 2005) ("Effective immediately, it is the policy of BiddingForTravel.com that the posting of any future requests to re-sell a winning bid are off topic and any such requests will be removed.").

[386] *See supra* notes 63-68 and accompanying text.

CONCLUSION

The movement for auction-based IPOs is a coalition of two groups. Some support this alternative method out of dissatisfaction with abusive allocation practices and astronomical underpricing levels during the internet bubble period. Others support the method for its purported capacity to deliver a more efficient, egalitarian, and equitable offering process.

Neither group's set of arguments, however, presents a convincing case for auction-based IPOs. Critics of bookbuilding have rushed to broad conclusions inferred from anecdotal and incomplete data that fail to engage extensive financial literature justifying underpricing and certain preferential allocation practices. Further, the data on and mechanics of auction-based IPOs present a qualified and mixed picture in comparison to traditional IPOs. And whether Dutch or French, modified or pure, auction-based IPOs are uniquely vulnerable to certain manipulative practices and bidding rings.

The soundest conclusion for now is that we have not advanced beyond the findings of the blue-ribbon committee commissioned by the SEC. Presently there is no clear reason to displace the existing bookbuilding method. At the same time auction-based IPOs still represent an interesting possibility that bears closer examination. Any appraisal of this alternate method should consider comprehensive sets of available data, interpret those results carefully, and utilize sound inferences. When one considers the substantial stakes issuers, investors, and underwriters have in the public offering process, demanding concrete proof about an alternative method seems not only reasonable, but appropriate. This article supplies the first step towards that goal.