

Why Don't Issuers Get Upset About Leaving Money on the Table in IPOs?

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Based on a 2002 *Review of Financial Studies* article with Tim Loughran of Notre Dame

For the 10 years from July 1, 2009 to June 30, 2019, the average first-day return (offer price to first close) on U.S. IPOs has been 16%

For VC-backed IPOs, it has been even higher, an average of 21%

Does Underpricing Harm the Shareholders of an Issuing Firm?

The Effect of Underpricing on the Wealth and Ownership of Pre-issue Shareholders

Assumptions:

Pre-issue shares outstanding:	78 million shares
Gross proceeds of IPO:	\$390 million
Post-issue market cap:	\$1,404 million
# of shares sold by pre-issue shareholders:	zero

	<u>Strategy 1</u>	<u>Strategy 2</u>
Offer price and number of shares offered:	39 m at \$10.00	30 m at \$13.00
Market price per share:	\$12.00	\$13.00
Money left on the table:	\$78 million	zero
Post-issue shares outstanding:	117 million	108 million
Post-issue wealth of pre-issue shareholders:	\$936 million	\$1,014 million
Post-issue % of firm owned by pre-issue shareholders:	66.7%	72.2%

During July 2009-June 2019, over \$43 billion was “left on the table” by 1,155 operating companies going public in the U.S. (Banks, ADRs, and IPOs with an offer price < \$5 are not included, and overallotment shares are not included)

Money left on the table = number of shares sold \times ($P_{\text{close}} - \text{OP}$)

The average amount left on the table (\$37 million) is more than twice the fees paid to underwriters and represents, on average, 5% of the post-issue market cap of the firm

Why are IPOs underpriced, on average?

Real estate agents and underwriters

Both are middlemen, and they get paid a fixed percentage of the selling price, such as 6% for a house and 7% for a moderate-size IPO

What are underwriters getting in return for the \$37 million in profits per IPO that they are handing out to money managers, hedge funds, etc.?

Underwriters gain from leaving money on the table because buy-side clients compete for favorable allocations

Most IPOs are heavily oversubscribed (demand exceeds supply), and underwriters can then choose which of their clients receive share allocations

Underwriters should desire a higher offer price given that percentage gross spreads are largely fixed at 7% on moderate size IPOs, so a higher offer price generates higher underwriter revenue, but there are two benefits of a lower offer price for underwriters:

- 1) Lower offer prices reduce marketing costs since it is easier to find buyers
- 2) Potential IPO investors will overpay for commissions to improve their priority of getting shares in hot IPOs

Underwriter incentives are misaligned with those of issuers

If hedge funds and other IPO investors overpay on commissions (soft dollars) by 30 cents for every dollar of money left on the table that they get, when underwriters raise an offer price by \$1 per share they gain 7 cents in gross spread revenue but lose 30 cents in soft dollar revenue

With bookbuilding, underwriters can allocate underpriced shares to their most profitable hedge fund clients

With an auction or a direct listing, underwriters do not have the ability to allocate shares to their most profitable clients

Why aren't corporate executives upset about leaving so much money on the table?

Ceridian HCM's April 2018 IPO: 21 million shares sold at \$22 per share. Closing price of \$31.21 implies that \$193 million was left on the table. Of that \$193 million left on the table, \$120 million came out of the pocket of Thomas H. Lee Partners and another \$64 million was from Cannae Partners.

It appears that management of Ceridian was quite satisfied with the initial public offering. Proof: they retained Goldman Sachs and JP Morgan as the top bookrunners for the November 2018 follow-on offering.

It doesn't appear that Ceridian is a major exception

An academic study found that issuing firms do not view a large amount of money left on the table as an important consideration in choosing the underwriter for a follow-on offering

The prospect theory explanation for the puzzle of why issuers don't object to leaving money on the table

Prospect theory assumes that issuers/managers focus on the change in their wealth, rather than on the level of the wealth

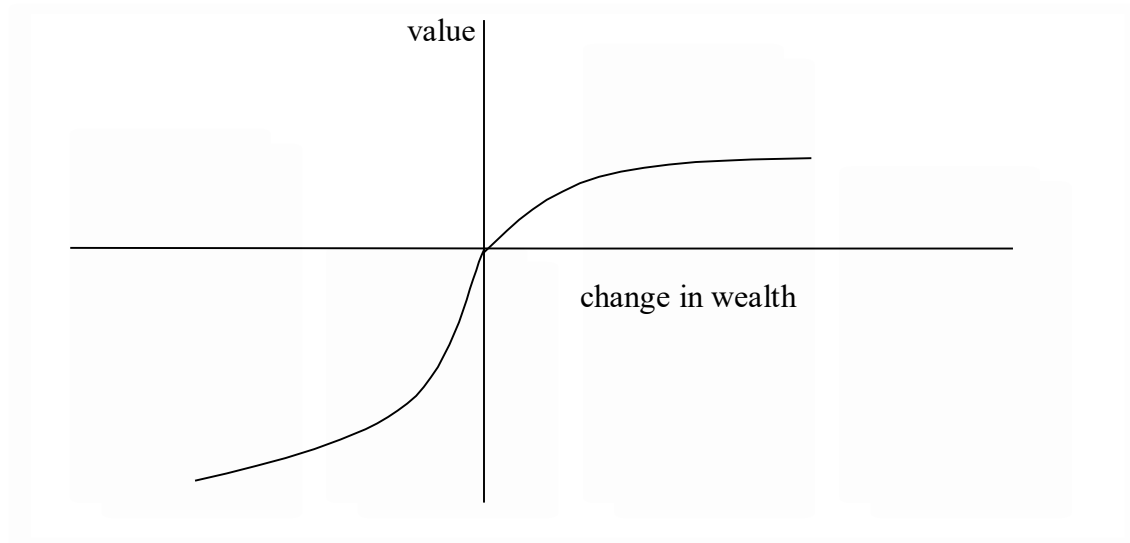


Figure 1--Prospect theory's value function, representing an individual's preferences over gains and losses relative a reference point

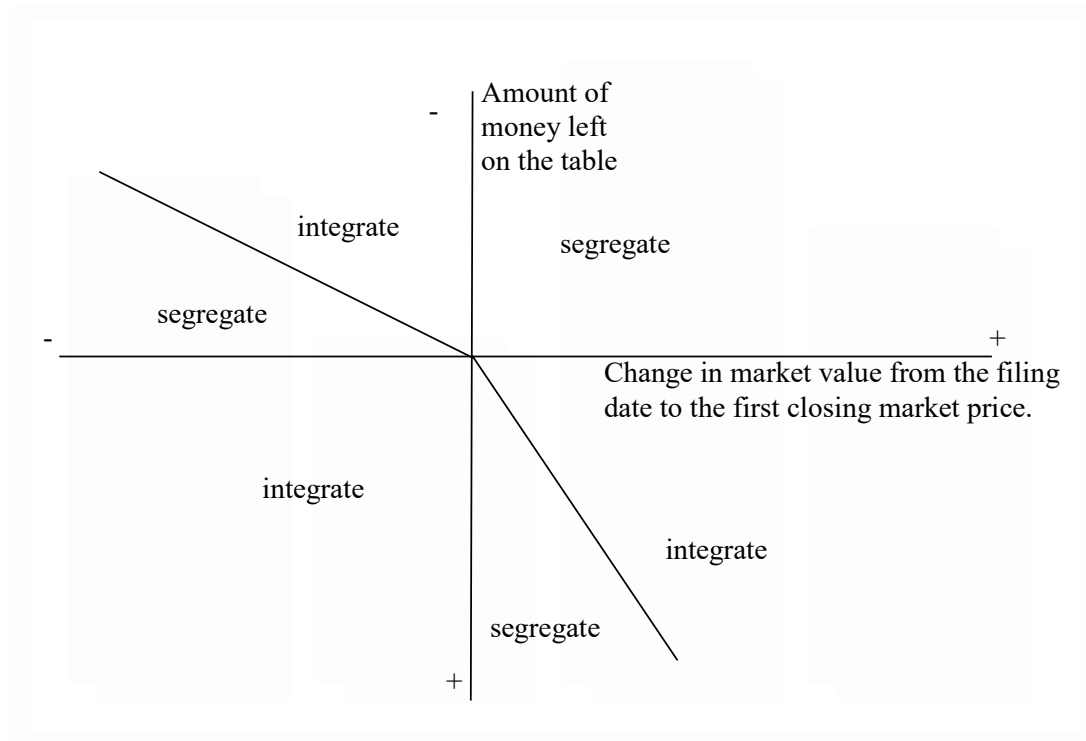


Figure 2--This figure displays the regions of integration and segregation for an individual who incurs both gains and/or losses based upon revisions in valuation from the filing date to the first closing market price, and due to money left of the table

In many IPO situations, managers (i.e., issuers) will integrate the two events from the first day. That is, **issuers will sum the wealth loss from leaving money on the table (bad news event) with the much larger wealth gain from the first-day returns (good news event).**

Underwriters take advantage of this correlation of the amount of money left on the table and the unanticipated wealth changes.

Continuing with the Thomas H Lee (Ceridian) example,

Time Period	Stock Price	Shares Owned	Paper Wealth
Two weeks before going public	\$19-\$21 filing range	66.9 million	\$1.34 billion (expected)
First close	\$31.21	66.9 million	\$2.09 billion

Would many people be upset if they found themselves in the situation of Thomas H Lee Partners, with a \$750 million increase in their paper wealth in two weeks?

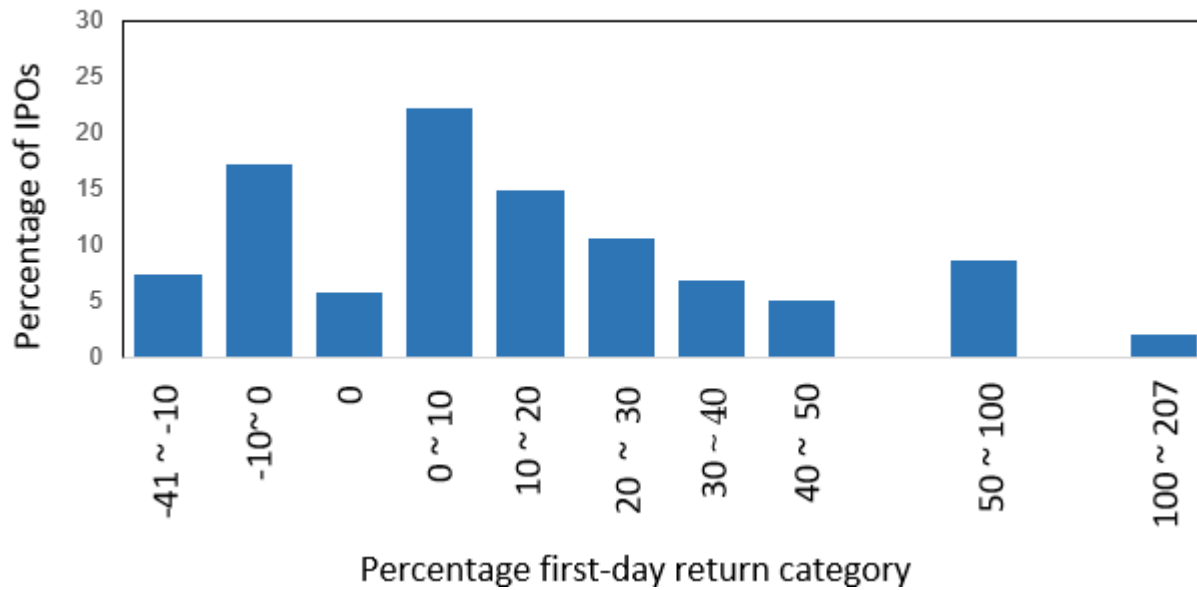


Figure 1-- Histogram of first-day returns (percentage return from offer price to first day close) for 1,155 operating company IPOs from July 1, 2009-June 30, 2019

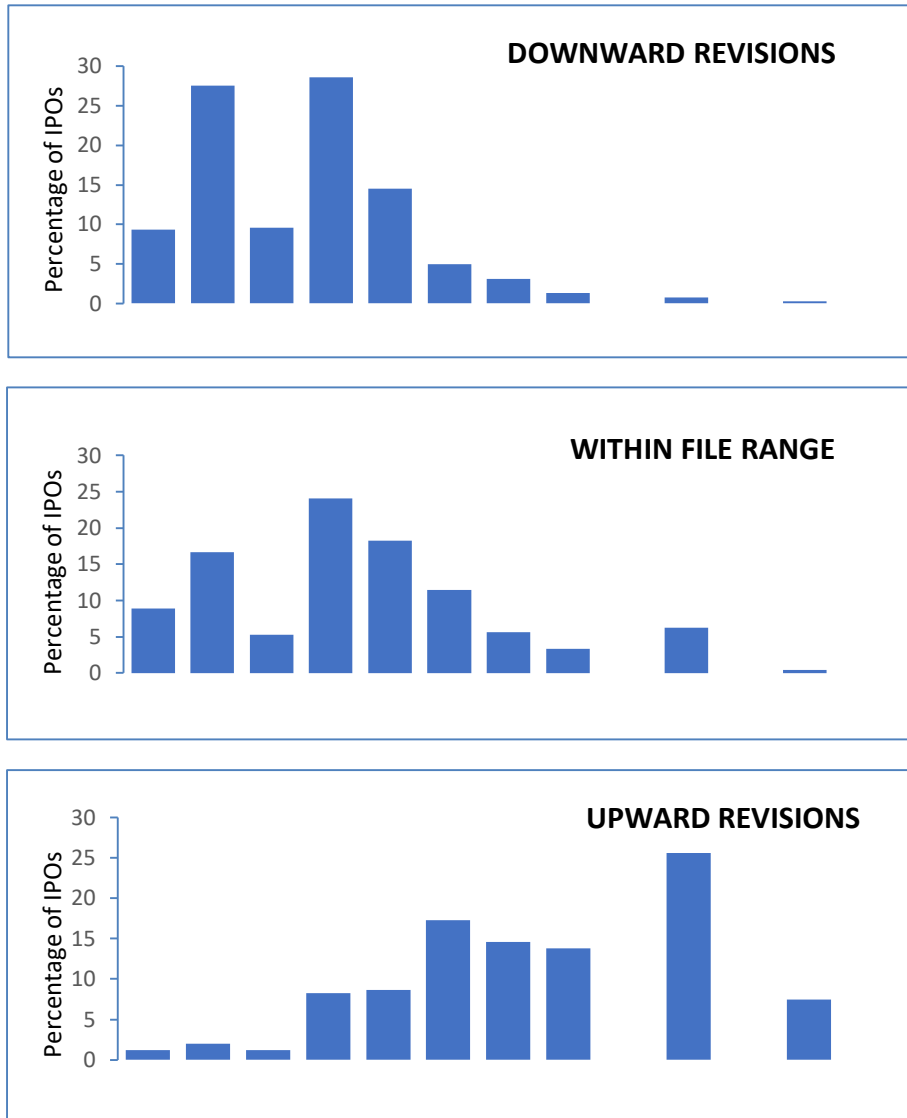


Figure 2--Conditional distributions of first-day IPO returns, July 2009-June 2019

Mean First-day Returns, the Amount of Money Left on the Table, and Revaluations from the Filing for IPOs from July 2009-June 2019, Categorized by the Final Offer Price Relative to the File Price Range
(Commercial banks included, minimum file price midpoint of \$8)

	No. of IPOs	First-day Returns		Averages, in millions		
		Mean	Percent Positive	Proceeds	Money Left on the Table	Revaluation from Midpoint
OP<Low	399	4.0%	54%	\$167 m	\$4 m	-\$166 m
Middle Range	546	12.1%	72%	\$231 m	\$20 m	\$85 m
OP>High	254	43.9%	96%	\$453 m	\$123 m	\$1,020 m
All	1,199	16.1%	71%	\$257 m	\$37 m	\$199 m

Revaluation (change in paper wealth of pre-IPO shareholders) is calculated as the change in value from the midpoint of the file price range to the first close for retained shares + the change in value from the midpoint to the offer price for secondary shares offered

First-day returns are predictable based on the market return during the three weeks prior to the offering

Following a market rise, IPOs that are priced will have higher than expected first-day returns

Following a market fall, firms that come to the market will have lower expected first day returns

IPOs Categorized by 3-week Prior Nasdaq Returns, July 2009-December 2018

Item	Number of IPOs	Median First-day Return	Median Money Left on the Table	Median Prior 3-week Nasdaq Ret
Prior < 0.0%	380	7.2%	\$8.0 million	-1.8%
Middle Range	358	8.6%	\$9.4 million	1.1%
Prior > 2.5%	402	9.2%	\$10.0 million	4.1%
All	1,140	8.3%	\$9.0 million	1.2%

Minimum file price range of \$8, minimum offer price of \$5, commercial banks included

Average Costs of Going Public by Underwriter, VC-backed IPOs, July 2009-June 2019

Assuming IPO Priced at \$10/share, % Discount is Issuer Net Relative to Market Price

No. IPOs	Underwriter	Avg. Underpricing	Avg. Gross Spread	Issuer Net	Market Price	% Discount
110	Goldman Sachs	33.8%	6.6%	\$9.34	\$13.38	30%
117	Morgan Stanley	29.1%	6.7%	\$9.33	\$12.91	28%
97	JP Morgan	22.3%	6.9%	\$9.31	\$12.23	24%
42	Jefferies	24.2%	7.0%	\$9.30	\$12.42	25%
50	Merrill Lynch	23.1%	6.9%	\$9.31	\$12.31	24%
15	Piper-Jaffray	16.1%	7.1%	\$9.29	\$11.61	20%
13	Cowen	15.8%	7.0%	\$9.30	\$11.58	20%
19	Barclays	14.7%	6.4%	\$9.36	\$11.47	18%
17	Stifel	10.6%	7.0%	\$9.30	\$11.06	18%
41	Citigroup	9.7%	6.7%	\$9.33	\$10.97	15%
13	Deutsche Bank	8.3%	6.8%	\$9.32	\$10.83	14%
11	UBS	7.1%	7.0%	\$9.30	\$10.71	13%
35	Credit Suisse	3.5%	6.9%	\$9.31	\$10.35	10%
14	SVB Leerink	2.0%	7.0%	\$9.30	\$10.20	9%
52	Others	10.7%	7.0%	\$9.30	\$11.07	16%
646	All	21.1%	6.8%	\$9.32	\$12.11	23%

What Happens a Year Later?

Performance of 646 VC-backed IPOs, July 2009-June 2019

	N	Avg. First-day Return	<u>Avg. Subsequent 1-year Return</u>	Style-adjusted
Big 3 Underwriters	324	28.7%	16.2%	-0.3%
Other Underwriters	322	13.6%	11.3%	6.0%
All	646	21.1%	13.7%	3.0%

1-year returns are measured from the first close and are only included for 522 IPOs from before December 31, 2017

Style-adjusted returns subtract the return on a seasoned firm of the same post-issue market cap and market-to-book ratio

The Big 3 underwriters (GS, MS, and JP Morgan) did the majority of tech deals and the other underwriters did the majority of biotech deals

Conclusions

Mental accounting is important:

- Issuers focus on changes in wealth

- Issuers integrate the gain in paper wealth with the opportunity cost of leaving money on the table

Underwriters have an incentive to underprice

- because they can receive indirect compensation: soft dollars

Going public is too costly on average because of the excessive money left on the table for a minority of issuers

A direct listing or auction can remove the misaligned incentives