

The New Issues Puzzle

Loughran and Ritter (1995, JF)

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Abstract: IPO/SEO Firms are Underperforming

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ABSTRACT

Companies issuing stock during 1970 to 1990, whether an initial public offering or a seasoned equity offering, have been poor long-run investments for investors. During the five years after the issue, investors have received average returns of only 5 percent per year for companies going public and only 7 percent per year for companies conducting a seasoned equity offer. Book-to-market effects account for only a modest portion of the low returns. An investor would have had to invest 44 percent more money in the issuers than in nonissuers of the same size to have the same wealth five years after the offering date.

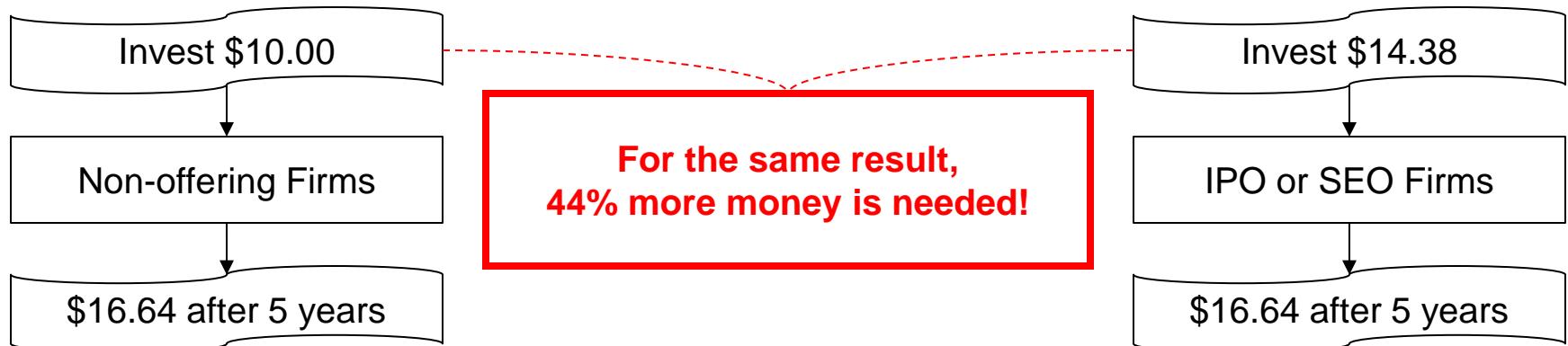
Abstract of Abstract

1. After IPO/SEO \Rightarrow 5-year stock return ↓

- After IPO return=5%/year
- After SEO return=7%/year

2. B/M effect can only partially explain this

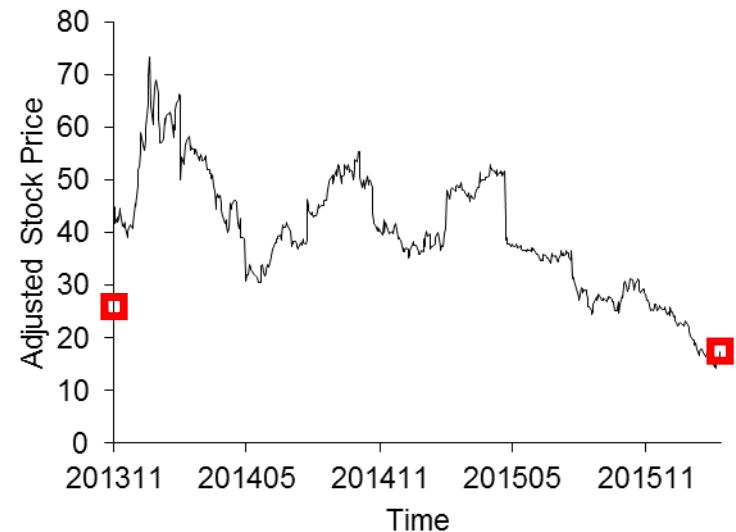
- Size effect cannot



Living Example? Twitter IPO

Twitter IPO Price was \$26

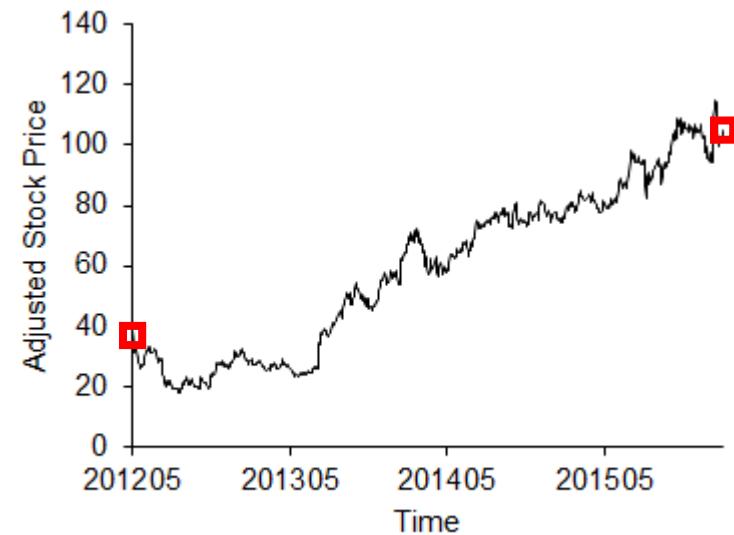
Now it is \$17.46 (-33%)



Counterexample? Facebook IPO

FB IPO Price was \$38

Now it is \$105.20 (+177%)



Ingredient

- IPO: 4,753 offerings, 1970–1990
 - Closed-end funds, real estate investment trusts, and American Depository Receipts are excluded
- SEO: 3,702 offerings, 1970–1990
 - All utility offerings are excluded
- Returns: CRSP daily returns
 - 5 years=1,260 trading days (except indices)
- Matching firms: $t-1$ yearend Market cap
 - Closest but higher than (non-issuing) firms
 - In delisting or other situations, returns (or firms) are altered or truncated well (no survivorship or look-ahead bias here)

Recipe

- Buy-and-hold return R_{it}

$$R_{it} = \left[\prod_{t=start}^{\min[T, delist]} (1 + r_{it}) - 1 \right] \times 100\%$$

- Average T -year buy-and-hold return (the year τ cohort)

$$R_{\tau,T} = \frac{1}{n} \sum_{i=1}^n R_{iT}$$

- Wealth relatives (ratios of average gross returns)
 - Smaller values imply more underperformance

$$\text{Wealth Relative} = \frac{\text{Gross Return of IPO or SEO Stocks}}{\text{Gross Return of Matching Stocks}}$$

Figure 1: There is Up & Down in # of Offerings

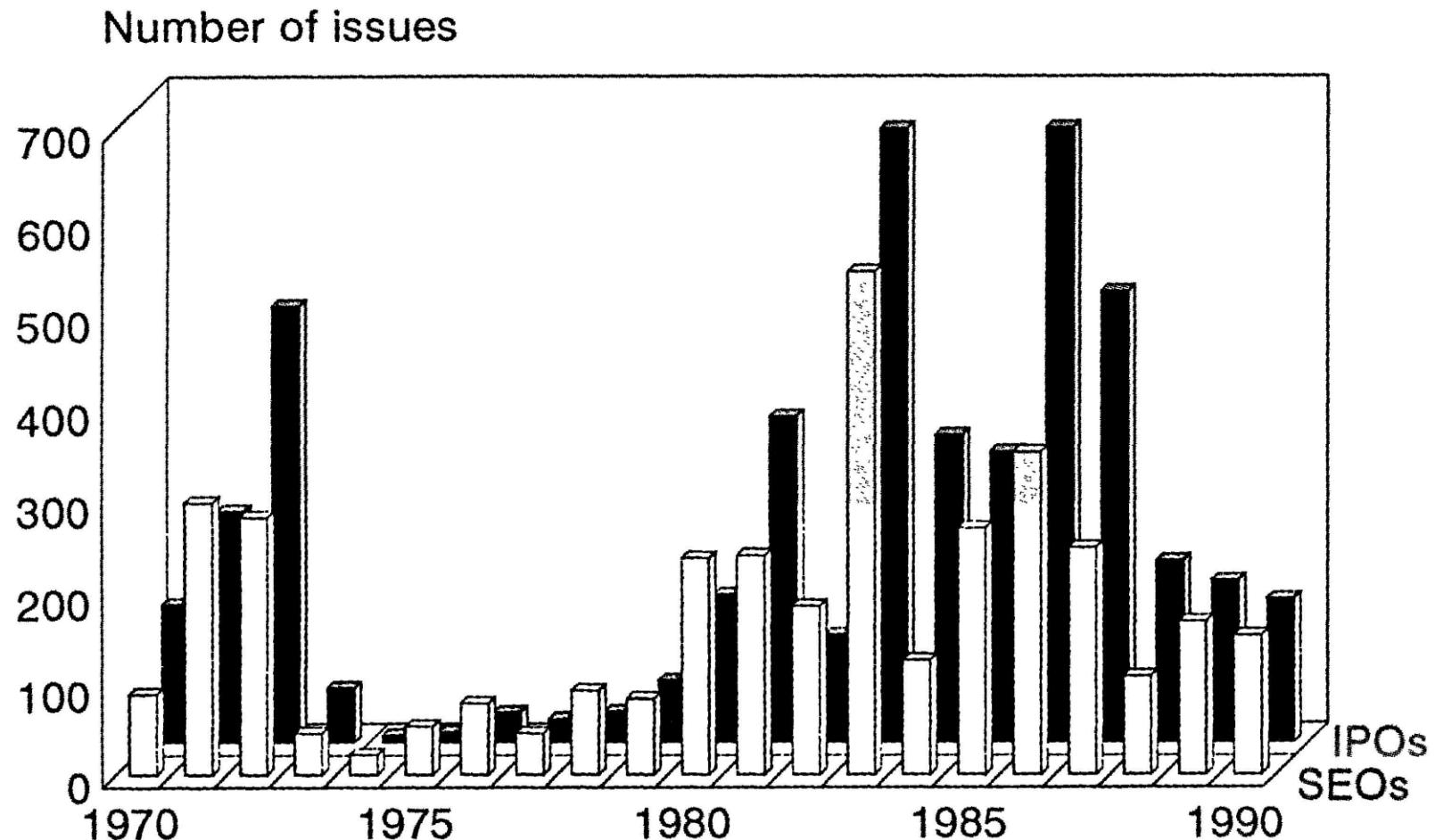


Table 1: Size-matching firms beats IPO Firms

Cohort Year	Number of IPOs	3 Years			5 Years		
		Mean Buy-and-Hold Returns (%)		Wealth Relative	Mean Buy-and-Hold Returns (%)		Wealth Relative
		IPOs	Matching Firms ^b		IPOs	Matching Firms ^b	
1970 ^a	151	-20.9	-12.9	0.91	-46.3	-20.0	0.67
1971 ^a	252	-55.6	-27.3	0.65	-31.6	6.1	0.64
1972 ^a	473	-47.2	-10.8	0.59	-18.2	33.4	0.61
1973	60	-33.6	29.5	0.51	0.8	104.4	0.49
1974	8	73.2	87.5	0.92	234.4	173.0	1.22
1975	12	59.3	106.5	0.77	117.9	127.3	0.96
1976	33	135.3	81.3	1.30	259.4	205.0	1.18
1977	26	151.3	126.2	1.11	173.8	234.0	0.82
1978	34	131.0	87.5	1.23	217.9	227.0	0.97
1979	68	63.0	80.6	0.90	52.6	193.1	0.52
1980	162	80.1	123.4	0.81	-2.1	188.0	0.34
1981	354	6.3	90.5	0.56	14.9	194.7	0.39
1982	118	21.4	83.9	0.66	76.7	137.6	0.74
1983	665	21.4	55.4	0.78	3.8	67.2	0.62
1984	334	48.1	60.0	0.93	44.0	82.2	0.79
1985	316	5.7	28.9	0.82	9.5	58.6	0.69
1986	666	5.3	29.9	0.81	9.3	33.4	0.82
1987	489	-10.4	0.3	0.89	6.2	14.0	0.93
1988 ^c	198	17.5	26.1	0.93	80.8	60.3	1.13
1989 ^c	177	44.3	20.6	1.20	44.4	25.3	1.15
1990 ^c	157	22.7	42.7	0.86	22.7	42.7	0.86
1970–90	4,753	8.4	35.3	0.80	15.7	66.4	0.70

Table 2: Size-matching Firms Beat SEO Firms

Cohort Year	Number of SEOs	Prior Return (%)	3 Years			5 Years		
			Mean Buy-and-Hold Returns (%)			Mean Buy-and-Hold Returns (%)		
			SEOs	Matching Firms ^b	Wealth Relative	SEOs	Matching Firms ^b	Wealth Relative
1970 ^a	88	-6.2	-11.1	-4.2	0.93	-29.2	-4.7	0.74
1971 ^a	296	59.2	-50.7	-29.9	0.70	-35.0	16.3	0.56
1972 ^a	280	43.1	-49.3	-19.5	0.63	-22.0	25.9	0.62
1973	45	-1.4	-34.6	3.2	0.63	-15.7	37.9	0.61
1974	22	-1.0	50.1	74.0	0.86	91.0	155.0	0.75
1975	53	70.3	50.9	81.1	0.83	107.6	162.4	0.79
1976	78	80.8	35.8	45.6	0.93	135.5	136.4	1.00
1977	45	40.3	147.8	103.2	1.22	181.2	178.3	1.01
1978	92	65.2	83.5	101.5	0.91	126.1	266.5	0.62
1979	83	59.0	54.9	70.8	0.91	90.0	193.5	0.65
1980	236	99.0	69.4	140.7	0.70	43.7	214.2	0.46
1981	239	92.0	9.6	77.8	0.62	36.9	178.2	0.49
1982	184	53.3	51.3	113.2	0.71	90.6	207.9	0.62
1983	545	138.8	17.4	70.5	0.69	20.3	95.9	0.61
1984	125	16.6	49.3	80.2	0.83	73.4	105.4	0.84
1985	268	57.7	11.9	60.3	0.70	24.2	84.0	0.68
1986	350	68.7	11.3	30.8	0.85	23.2	32.4	0.93
1987	247	51.7	1.4	13.7	0.89	37.5	40.2	0.98
1988 ^c	107	18.2	16.5	23.1	0.95	65.2	63.4	1.01
1989 ^c	167	65.8	17.6	16.3	1.00	31.0	31.1	1.00
1990 ^c	152	45.1	37.2	42.5	0.96	37.2	42.5	0.96
1970–90	3,702	72.3	15.0	48.0	0.78	33.4	92.8	0.69

Offering in Hot Market \Rightarrow More Underperform?

$$\hat{\rho}(\text{IPO}, 5\text{YWR IPO}) = -0.26, \text{ IPO} \uparrow \Rightarrow \text{RETURN} \downarrow$$

$$\begin{aligned}\hat{\rho}(\text{PRIOR, SEO}) &= 0.66, \text{ PRIOR} \uparrow \Rightarrow \text{SEO} \uparrow \\ \hat{\rho}(\text{SEO}, 5\text{YWR SEO}) &= -0.29, \text{ SEO} \uparrow \Rightarrow \text{RETURN} \downarrow\end{aligned}$$

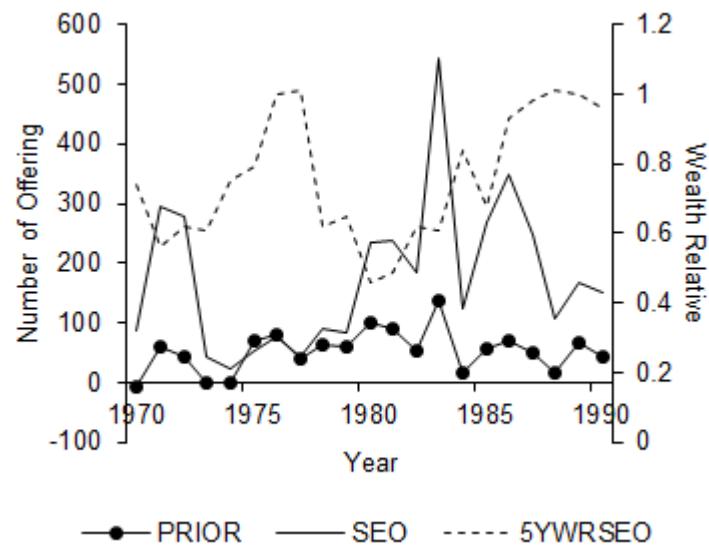
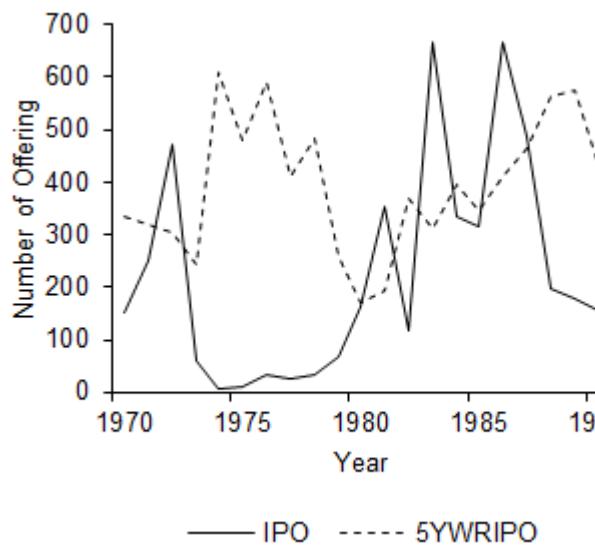


Table 3: 5-year Patterns of Gap after Offerings

	First 6 Months	Second 6 Months	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Geometric Mean, Years 1–5
Panel A. Firms Going Public								
(1) IPO firms (%)	3.1	−1.1	1.6	3.6	5.0	4.0	11.6	5.1
(2) Matching firms (%)	3.0	3.4	6.1	14.1	13.3	11.3	14.3	11.8
(3) <i>t</i> -Statistic for difference	0.13	−5.50	−3.51	−8.01	−6.45	−5.61	−1.67	−11.37
(4) Sample size	4,082	4,351	4,363	4,526	4,277	3,717	3,215	4,753
Panel B. Firms Conducting SEOs								
(5) SEO firms (%)	5.6	0.5	6.6	0.1	7.5	9.1	11.8	7.0
(6) Matching firms (%)	5.7	6.8	12.9	12.3	16.2	17.7	17.4	15.3
(7) <i>t</i> -Statistic for difference	−0.22	−9.00	−5.59	−12.24	−8.08	−7.35	−4.50	−16.80
(8) Sample size	3,469	3,550	3,561	3,614	3,496	3,154	2,805	3,702

Figure 2.1: 5-year Patterns of Gap after IPO

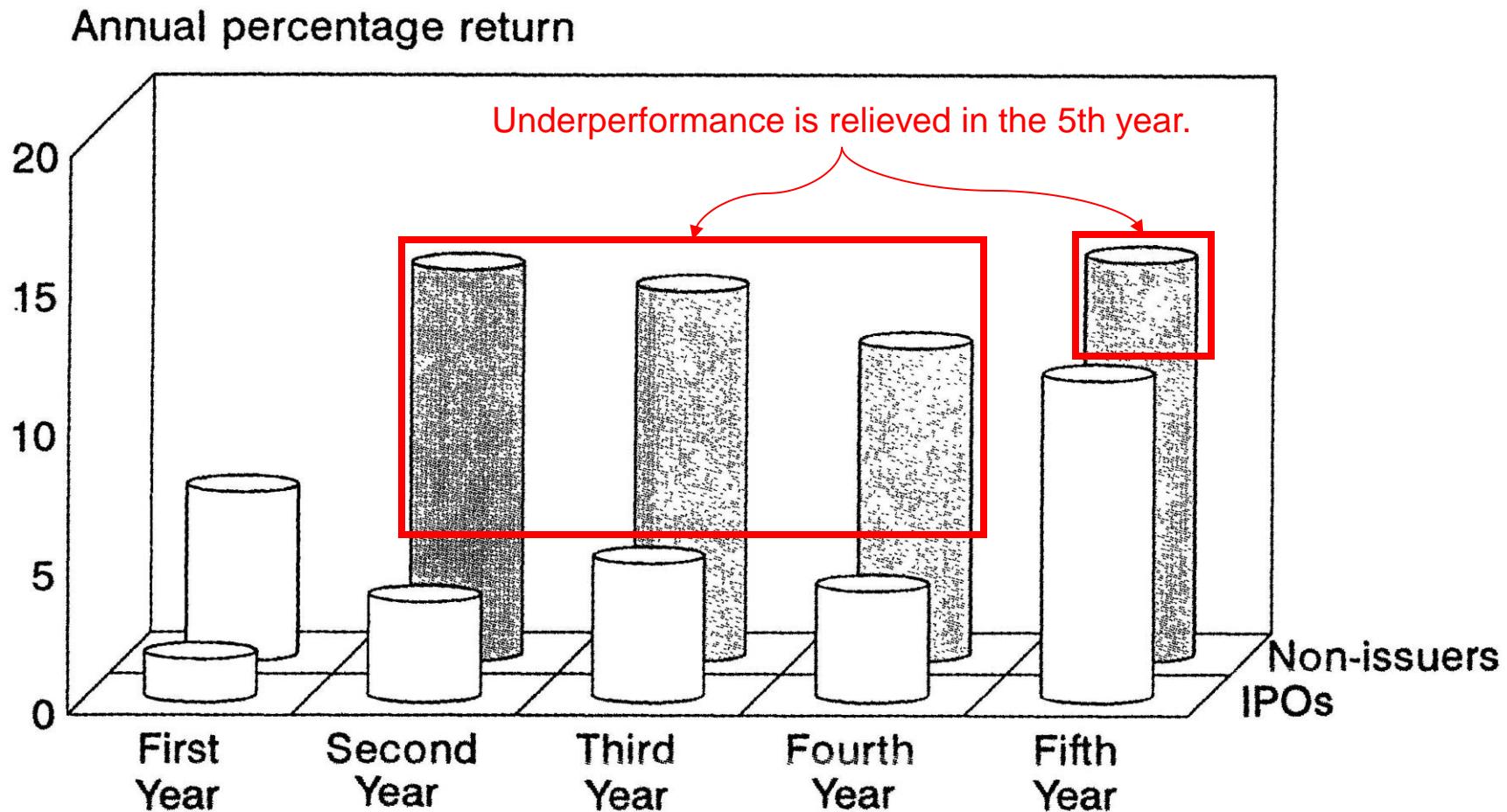


Figure 2.2: 5-year Patterns of Gap after SEO

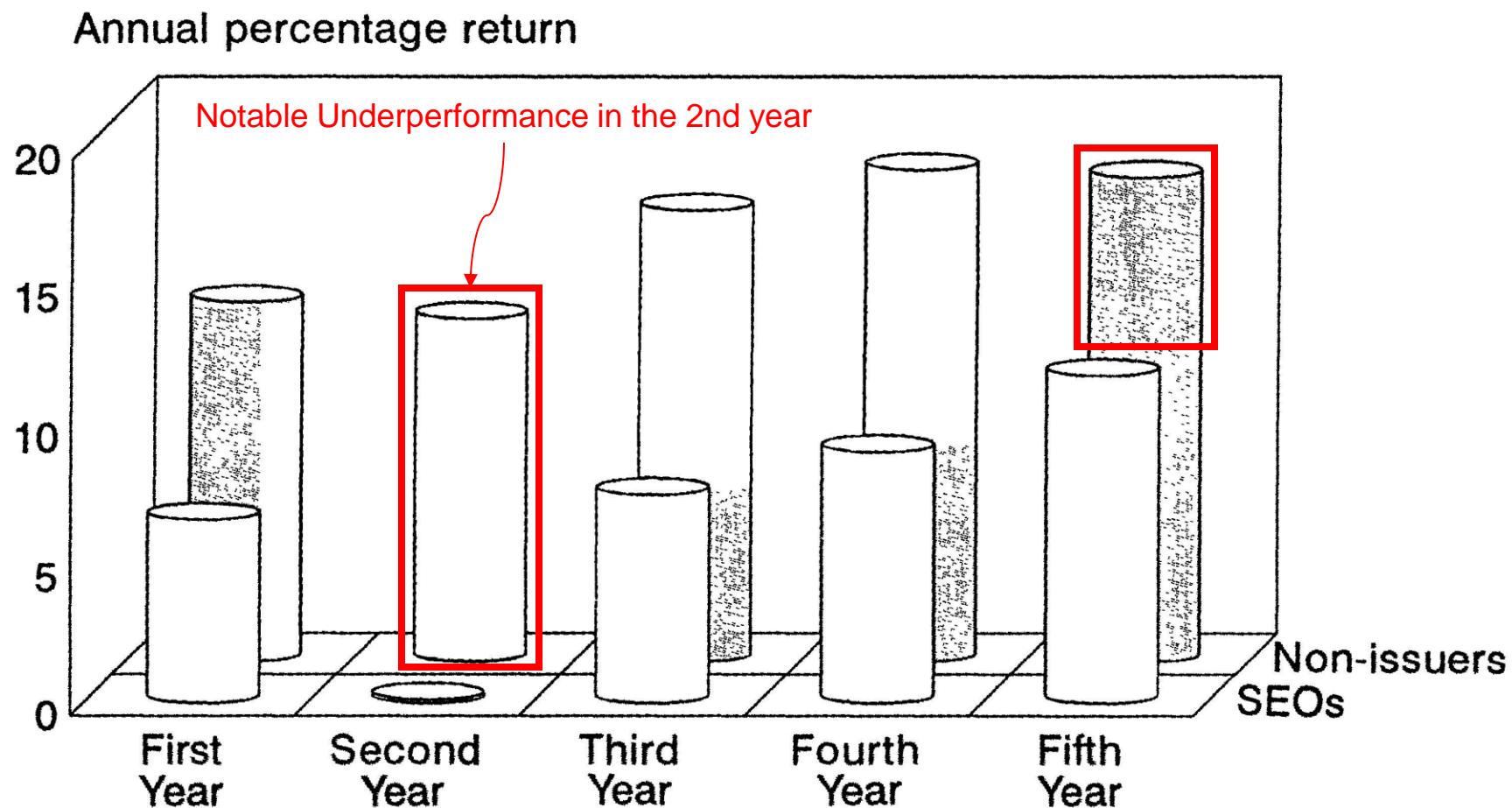
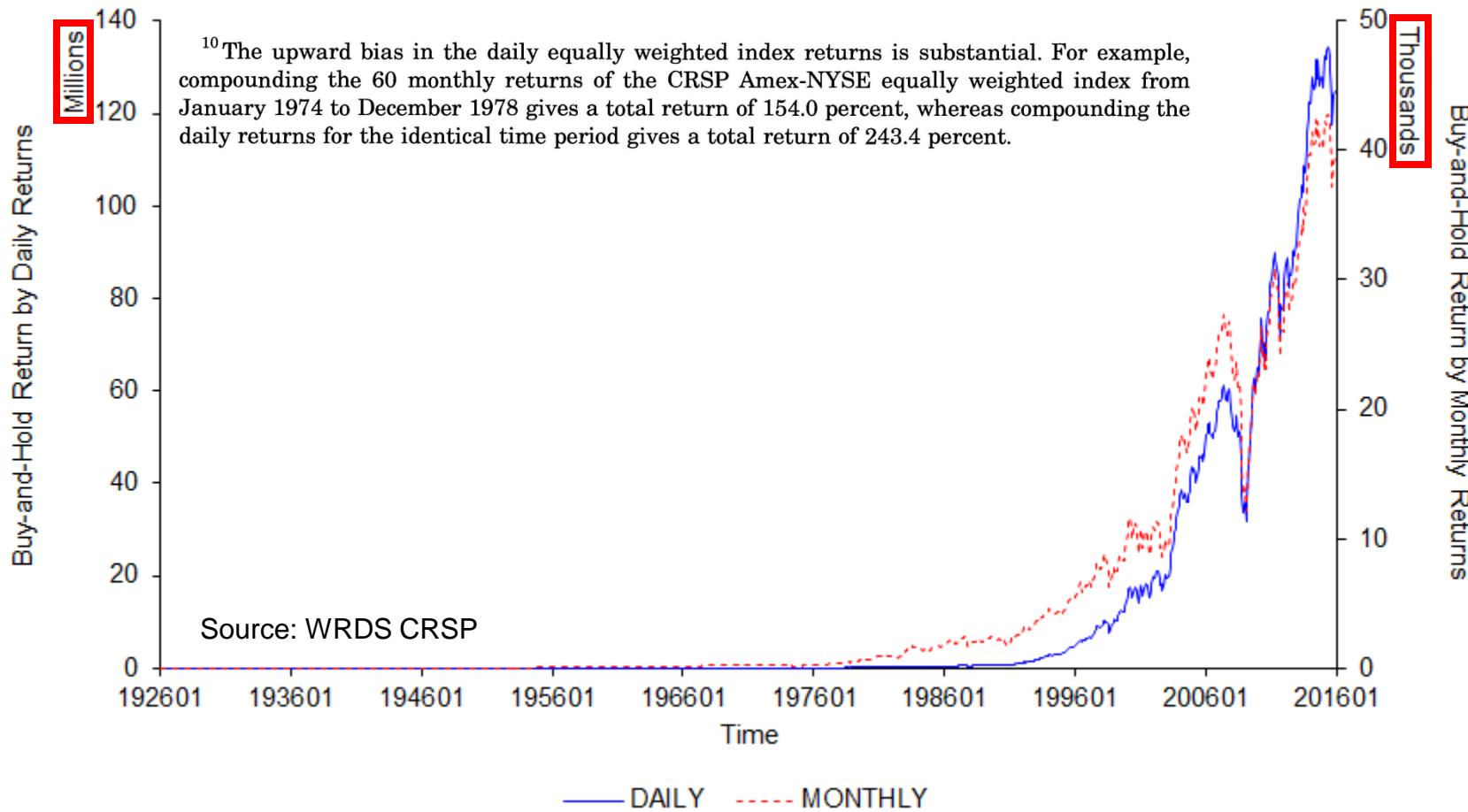


Table 4: All Indices Beat the IPO/SEO Firms

Benchmark	Average 5-Year Return (%)		
	Issuers	Benchmark	5-Year Wealth Relative
Panel A. Initial Public Offerings			
Size-matched firms	15.7	66.4	0.70
CRSP Amex-NYSE EW index	15.7	48.8	0.78
CRSP Amex-NYSE VW index	15.7	57.3	0.74
Standard & Poor's 500	15.7	38.3	0.84
CRSP Nasdaq EW index (3,886 firms)	25.2	47.5	0.85
CRSP Nasdaq VW index (3,886 firms)	25.2	54.2	0.81
Panel B. Seasoned Equity Offerings			
Size-matched firms	33.4	92.8	0.69
CRSP Amex-NYSE EW index	33.4	67.7	0.79
CRSP Amex-NYSE VW index	33.4	66.3	0.80
Standard & Poor's 500	33.4	43.0	0.93
CRSP Nasdaq EW index (3,042 firms)	46.9	75.2	0.84
CRSP Nasdaq VW index (3,042 firms)	46.9	66.4	0.88

Upward Bias ($1 \rightarrow$): Daily (124m)>Monthly (39k)



Upward Bias: Without Scale Adjustment...

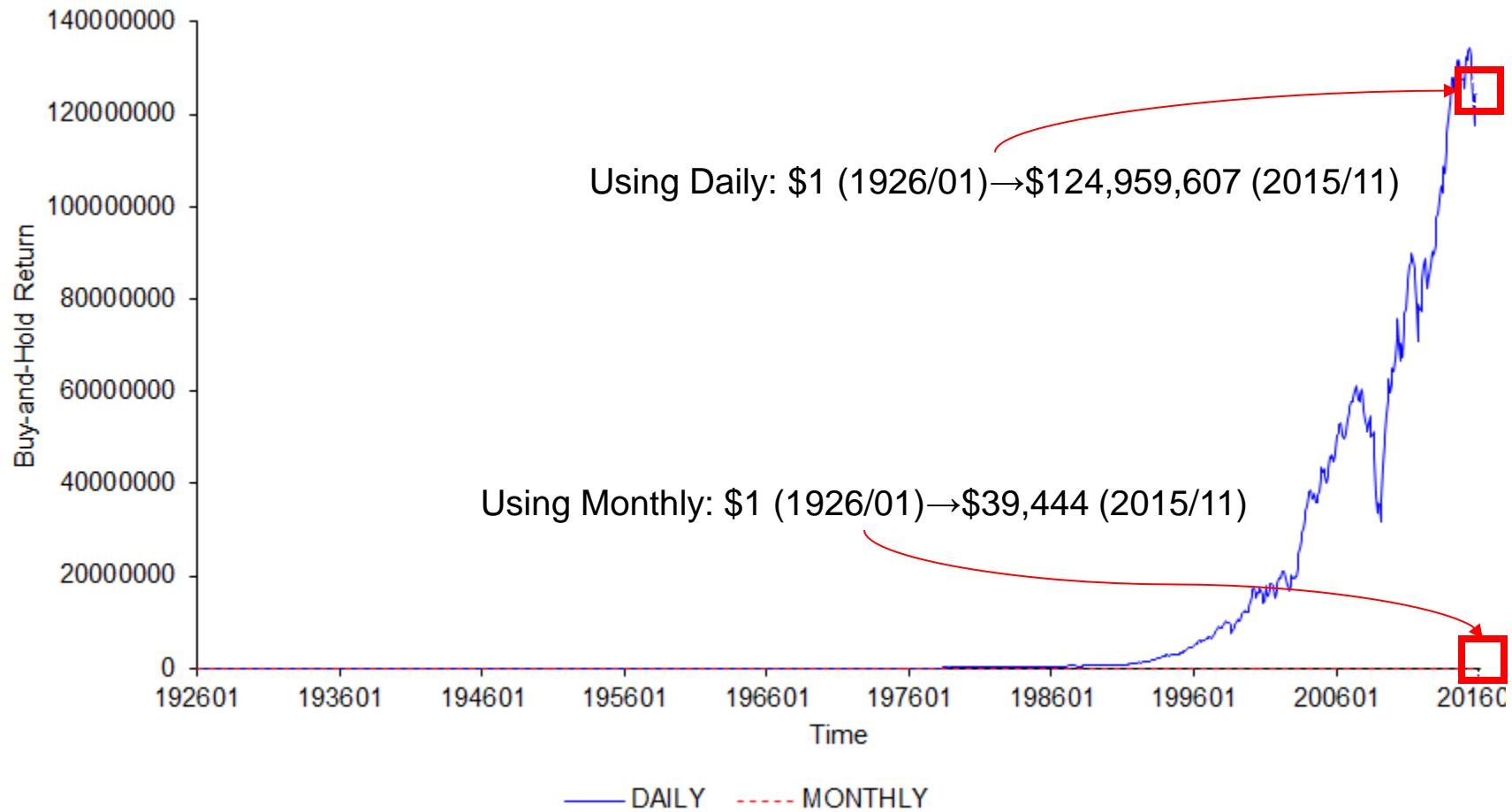


Table 5: Robust after Using Value-weight? Yes

Panel A. Initial Public Offerings	
(1) Dollar value (1991 purchasing power) of IPOs valued at first CRSP-listed price	\$117.6 billion
(2) Dollar value (1991 purchasing power) of returns on IPOs	\$39.8 billion
(3) Dollar value (1991 purchasing power) of returns on matched seasoned firms	\$78.8 billion
(4) Value-weighted percentage return $[(2) \div (1)] \times 100\%$	33.8%
(5) Value-weighted wealth relative $[(1) + (2)] \div [(1) + (3)]$	0.80
Panel B. Seasoned Equity Offerings	
(6) Dollar value (1991 purchasing power) of SEOs valued at first CRSP-listed price	\$176.8 billion
(7) Dollar value (1991 purchasing power) of returns on SEOs	\$67.9 billion
(8) Dollar value (1991 purchasing power) of returns on matched seasoned firms	\$145.6 billion
(9) Value-weighted percentage return $[(7) \div (6)] \times 100\%$	38.4%
(10) Value-weighted wealth relative $[(6) + (7)] \div [(6) + (8)]$	0.76

Table 6: Robust after Erasing IPO Effect? Yes

Length of Time Since IPO at Date of SEO	Number of SEOs	3 Years			5 Years		
		Mean Buy-and-Hold Returns (%)			Mean Buy-and-Hold Returns (%)		
		SEOs	Matching Firms	Wealth Relative	SEOs	Matching Firms	Wealth Relative
5 or fewer years	1,141	2.3	34.4	0.76	19.5	66.9	0.72
More than 5 years	2,561	20.7	54.1	0.78	39.5	104.4	0.68
Total	3,702	15.0	48.0	0.78	33.4	92.8	0.69

Table 7: Robust after Controlling Reversal? Yes

Samples are extreme winners (excess return $\geq 50\%$ last year)

	Sample Size	Mean 5-Year Buy-and-Hold Return (%)			Wealth Relative
		Firms	Index		
Issuers	896	26.4	74.6		0.72
Nonissuers	5,219	98.3	71.9		1.15

Table 8: Robust in the Cross-section? Yes

$$r_{it} = \alpha_0 + \alpha_1 \ln MV_{it} + \alpha_2 \ln(BV/MV)_{it} + \alpha_3 ISSUE_{it} + e_{it}$$

Model	Average Parameter Values				Avg. R^2	No. of Months
	Intercept	$\ln MV$	$\ln BV/MV$	$ISSUE$		
All months (1)	1.70 [3.46, 59%]	-0.05 [-0.91, 50%]	0.30 [4.57, 65%]	-0.38 [-3.68, 40%]	0.019	240
January only (2)	12.94 [5.88, 95%]	-1.46 [-6.12, 5%]	0.55 [1.47, 60%]	0.00 [0.01, 45%]	0.039	20
Feb.–Dec. only (3)	0.68 [1.55, 55%]	0.08 [1.45, 55%]	0.27 [4.40, 66%]	-0.42 [-4.03, 39%]	0.017	220
All months (4)	1.42 [3.67, 63%]	B/M absorbs ≈25%		-0.49 [-3.98, 37%]	0.004	240
All months (5)	1.58 [3.10, 59%]	-0.05 [-0.84, 51%]	0.33 [4.82, 66%]		0.016	240
Periods following light volume (6)	3.45 [4.63, 71%]	-0.26 [-3.12, 42%]	0.20 [1.80, 59%]	-0.17 [-1.19, 44%]	0.021	120
Periods following heavy volume (7)	-0.05 [-0.08, 47%]	0.16 [2.11, 59%]	0.39 [6.30, 72%]	-0.60 [-3.98, 35%]	0.016	120

Poor after IPO during Hot Market

Table 9: Robust in the Time-series? Yes

$$R_{pt} - R_{ft} = \alpha + b[R_{mt} - R_{ft}] + sSMB_t + hHML_t + e_t$$

Portfolio
Return from
Issuing Firms

Risk-free or
Matching
Portfolio Return

	Coefficient Estimates				R^2_{adj}
	<i>a</i>	<i>b</i>	<i>s</i>	<i>h</i>	
	Panel A Value-Weighted Portfolio Returns				
(1) Large nonissuers	0.03 (1.0)	1.02 (159.9)	-0.05 (-5.0)	0.00 (0.1)	0.99
(2) Large issuers	-0.21 (-1.9)	1.03 (40.0)	0.19 (5.0)	-0.19 (-4.2)	0.92
(3) Return difference (2) - (1)	-0.24 (-2.0)	0.01 (0.2)	0.24 (5.7)	-0.19 (-3.9)	0.19
(4) Small nonissuers	-0.08 (-1.3)	0.97 (63.9)	1.19 (51.9)	0.31 (11.8)	0.98
(5) Small issuers	-0.34 (-3.0)	1.12 (41.0)	1.36 (33.1)	-0.01 (-0.3)	0.95
(6) Return difference (5) - (4)	-0.26 (-2.6)	0.15 (6.4)	0.17 (4.9)	-0.32 (-8.0)	0.51
	Panel B Equally Weighted Portfolio Returns				
(7) Large nonissuers	0.08 (1.8)	1.07 (101.5)	0.52 (32.5)	0.18 (10.1)	0.99
(8) Large issuers	-0.27 (-2.8)	1.16 (50.8)	0.80 (23.0)	-0.21 (-5.3)	0.96
(9) Return difference (8) - (7)	-0.36 (-4.2)	0.10 (4.9)	0.28 (9.3)	-0.39 (-11.3)	0.62
(10) Small nonissuers	0.02 (0.2)	0.91 (35.1)	1.34 (34.2)	0.36 (8.2)	0.94
(11) Small issuers	-0.45 (-3.1)	1.05 (31.0)	1.50 (29.2)	0.09 (1.6)	0.92
(12) Return difference (11) - (10)	-0.47 (-5.0)	0.14 (6.4)	0.16 (4.7)	-0.27 (-7.1)	0.48

Summary and Conclusions

- **Investing in IPO/SEO firms are hazardous**
- This underperformance is robust after controlling
 - Weighting scheme (both equal- & value-)
 - Size & book-to-market
 - Other IPO effects
 - Return reversal
 - Beta
- Consistent with Market Timing story
 - Baker and Wurgler (2002, JF) after this paper

Summary and Conclusions (cont'd)

A. The Misvaluation of IPOs

- Overvaluation by investors who believe next Microsoft
 - Jain and Kini (1994): CF-to-assets ratio↓ during IPO time
 - Mikkelsen and Shah (1994): sales↑ but cash-flow does not
 - Lerner (1994): cycles in IPO volume, window of opportunity
 - Loughran (1991): IPO long-run poor performance

B. The Misvaluation of SEOs

- Continuing overvaluation (investors' irrationality?)
- Cannot explained well by existing literatures
 - Lucas and McDonald (1990), Choe, Masulis and Nanda (1993)

C. Related Evidence and Implications

- UK: Marsh (1979), Levis (1993)
- International: Loughran and Rydqvist (1994)
- Announcement period returns are seemingly biased

Don't Bet on Poor IPOs/SEOs

IV. Summary and Conclusions

Investing in firms issuing stock is hazardous to your wealth. Firms issuing stock during 1970 to 1990, whether an IPO or an SEO, have been poor long-run investments for investors. The average annual return during the
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their operating performance. The market appears to overweight this recent improvement and underweight long-term, mean-reverting tendencies in operating performance measures. The market is systematically misestimating the autocorrelation of earnings growth. Consequently, at the time of issue, market prices reflect the capitalization of transitory operating improvements.

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issuing volume produced wealth relatives close to 1.0 as well. An out-of-sample test of the windows of opportunity hypothesis is whether the issuing companies from the high-volume period of 1992 to 1993 will underperform in the long run. This hypothesis predicts that these stocks will be a disaster for investors.

Don't Bet on Poor IPOs/SEOs



Q&A Session

Thanks for Listening