

A partial defense of the giant squid

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For those who have been meditating at a Buddhist monastery over the last year, the giant squid in the title refers to Goldman Sachs Inc. Matt Taibbi writing in Rolling Stone magazine¹ characterizes the investment bank as: “a great vampire squid wrapped around the face of humanity, relentlessly jamming its blood funnel into anything that smells like money.” The article is (to put it mildly) a colorful polemic hurled at Goldman Sachs accusing it of essentially creating and profiting from various financial bubbles since the onset of the Great Depression.

Taibbi’s rhetoric was not well received in the mainstream business press. Reactions were dismissive (along the lines of: simplistic analysis; he’s not a real business reporter!), indignant (basically objecting to the article’s over-the-top language), defensive (all of them do it, why pick on Goldman?) but seemed not to engage with the substance of Taibbi’s accusations. In fact, an ‘audit’ done by the Columbia Journalism Review’s Dean Sparkman largely validates Taibbi’s substantive claims².

One of these claims relates to the tech sector bubble of the late 1990s. With the benefit of hindsight, it is clear that many of the high-tech IPOs launched in this period were based on dubious valuations. Goldman was certainly active in IPO underwriting and had the highest ranking in terms of underwriter reputation [Carter et al. (1998)]³. The firm also had its share of high-profile misfires (for example: Webvan, Etoys) when the dot.com mania peaked and crashed in the spring of 2000. Goldman was also arguably involved in activities such as spinning and laddering⁴; the latter has the effect of artificially pumping up the stock prices of IPO firms in the aftermarket. But was Goldman a particularly egregious offender in a climate in which underwriting best practices had slipped precipitously?⁵ And how should this be evaluated?

As it turns out, we were involved in researching high-tech firms that had an IPO in the late 1990s. We found significant positive momentum and sharp reversals within a six-month aftermarket window⁶. When we were doing the study, underwriter reputation was not a central concern – it was only one of several control variables we employed. However, in the wake of the Taibbi article and the considerable controversy it has generated, we thought it would be interesting to revisit our sample to see if we could uncover any interesting facts related to underwriter identity.

The set up

Our primary sample was drawn from ipo.com, which lists the universe of U.S. IPOs with dates, offer prices etc. classified in a number of categories. We chose all IPOs from January 1, 1998

through October 30, 1999 in the following sectors: biotechnology, computer hardware, computer software, electronics, Internet services, Internet software, and telecommunications. This resulted in a sample of 301 high-tech IPO firms. We stopped at October 30, 1999 because we wanted to study medium-term aftermarket price behavior beyond the IPO date while excluding the market correction that commenced in 2000 [Jaggia and Thosar (2004)].

In Figure 1, we provide selected descriptive statistics relating to our sample broken down by three lead underwriter reputation tiers: top, medium, and bottom. The top-tier underwriters are those that received the highest score of 9 in the Carter et al. (1998) ranking system. These are: Goldman Sachs, Credit Suisse First Boston (renamed Credit Suisse), Hambrecht & Quist, and Salomon Smith Barney. The medium-tier underwriters are those with a score between 8.75 and 8.99, while the bottom tier includes all firms with a score below 8.75.

There do not appear to be any obvious differences between IPO firms represented by top-tier underwriters and the others in terms of objective quality criteria. If anything, metrics such as: the level of initial underpricing, percentage of profitable firms, and firm age

Variables	Underwriter reputation		
	Top-tier	Medium-tier	Bottom-tier
Cumulative market-adjusted return (CMAR) at the end of six months	44.71 (140.91)	19.95 (101.88)	-16.55 (57.23)
Percentage change from offer to market open price	65.74 (72.26)	68.38 (105.15)	43.66 (73.18)
Percentage of firms with positive net income in pre-IPO year	21.11 (41.04)	16.90 (37.61)	24.64 (43.41)
Revenue in pre-IPO year (\$ millions)	83.71 (285.64)	50.71 (200.94)	75.84 (397.87)
Offer size (\$ millions)	134.48 (176.86)	126.97 (490.20)	48.60 (47.48)
Percentage of firms with green-shoe (over-allotment) option	64.44 (48.14)	54.23 (50.00)	55.07 (50.11)
Percentage of firms belonging to the Internet services or software categories	61.11 (49.02)	60.56 (49.04)	59.42 (49.46)
Firm age at IPO date (years)	4.45 (3.40)	5.61 (5.88)	5.90 (6.03)
Number	90	142	69

Notes:

- Standard deviations are in parentheses below the sample means.
- Top-tier underwriter firms are those assigned the highest point score of 9 in the Carter et al. (1998) system. This category includes Goldman Sachs. Medium-tier firms are those with a score of 8.75 - 8.99. Bottom-tier are all those below 8.75.
- A green-shoe provision gives the underwriter the option to purchase additional shares at the offer price to cover over allotments. Presence of the provision indirectly increases underwriter compensation.

Figure 1 - Selected descriptive statistics for IPO firms classified by underwriter reputation

1 Taibbi, M., 2009, “The great American bubble machine,” Rolling Stone magazine, issue 1082-83, July 2.
 2 See: Don’t dismiss Taibbi: what the mainstream press can learn from a Goldman take-down, The Audit, posted on the CJR website on August 08, 2009.
 3 Based on the ranking system developed in: Carter, R. B., F. H. Dark, and A. K. Singh, 1998, “Underwriter reputation, initial returns and the long-run performance of IPO stocks,” Journal of Finance, 53:1, 285-311.
 4 Spinning involves the underwriter allocating underpriced IPOs to favored executives – the quid pro quo being a promise of future business. Laddering involves allocations conditioned upon buyers agreeing to purchase additional shares of the IPO in the after-

market. The SEC sanctioned various underwriting firms including Goldman Sachs, which paid a fine of U.S.\$40 million without admitting wrongdoing. The firm also reportedly paid U.S.\$110 million to settle an investigation by New York state regulators.
 5 Taibbi quotes Professor Jay Ritter, a leading IPO researcher at the University of Florida: “In the early eighties, the major underwriters insisted on three years of profitability. Then it was one year, then it was a quarter. By the time of the Internet bubble, they were not even requiring profitability in the foreseeable future.”
 6 See: Jaggia, S., and S. Thosar, 2004, “The medium-term aftermarket in high-tech IPOs: patterns and implications,” Journal of Banking and Finance, 28, 931-950.

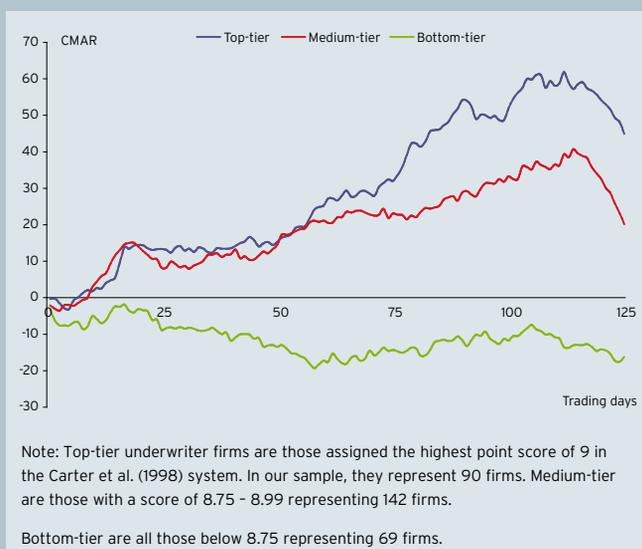


Figure 2 - Cumulative market-adjusted returns (CMAR) for IPO firms grouped by lead underwriter reputation

seem to favor the bottom-tier group. The average IPO offer size is considerably larger for the top-tier compared to the bottom-tier group, which is not surprising. One expects that superior reputation carries with it the ability to tap more extensive investor networks to raise larger chunks of capital at a given time. Also worth noting is that the top-tier group has the highest proportion of contracts with a green-shoe option. A green-shoe provision gives the underwriter the option to purchase additional shares at the offer price to cover over-allotments and thereby indirectly increases underwriter compensation.

A striking and somewhat surprising difference is in the cumulative market-adjusted returns (CMAR) registered by each group. To study this in greater detail, we graph (Figure 2) the CMAR for each group using the post-IPO day 1 open price as the base through trading-day 125 or approximately six months after the IPO date⁷. There are visual and arguably economically significant differences across groups. The bottom-tier group (green) immediately slips into negative territory and stays there for a six-month CMAR of -16.5 percent. The medium (red) and top (blue) groups display strong positive momentum and reach a CMAR peak of 40.5 percent (at day 114) and 61.5 percent (at day 112) respectively. The CMAR then tapers off possibly due to the onset of lock-up expiration pressures and at the end of six months ends up at 20.0 percent and 44.7 percent for the medium and top groups respectively.

This can be viewed in a number of ways. If the market is behaving rationally and recognizing 'true value' as time elapses, the 45 percent CMAR displayed by the top group represents serious underestimation of the initial IPO offer prices. It represents in

effect a wealth transfer from the founders and seed financiers of the firm to outside investors and this is over and above the initial underpricing of 66 percent for this group (Figure 1). Under normal circumstances, the underwriters could be justly accused either of incompetence in terms of valuation or extorting their IPO clients to enrich themselves and their favored customers.

On the other hand, if informed investors recognize that tech sector stock prices are inflated, unsustainable, and are in the market to exploit the 'greater fool,' the CMAR patterns may reflect the ability of certain underwriters through their analyst coverage, laddering arrangements, etc., to not only stabilize but pump up prices in the aftermarket until the wealth transfer from uninformed to informed investors is duly complete.

We decided that a closer disaggregated look at the top-tier group might be useful.

The defense

In Figures 3 and 4, we report descriptive statistics and CMAR patterns for the IPOs underwritten by top-tier firms. Hambrecht & Quist and Salomon Smith Barney are combined so as to represent a reasonable sample size; Credit Suisse and Goldman Sachs are reported separately.

A few metrics are worth noting. More firms represented by Goldman (27 percent) were profitable in their pre-IPO year than Credit Suisse

Variables	CS	GS	Rest
Cumulative market-adjusted return (CMAR) at the end of six months	80.09 (165.39)	27.51 (131.84)	30.55 (121.06)
Percentage change from offer to market open price	74.34 (75.17)	85.67 (81.23)	26.63 (28.61)
Percentage of firms with positive net income in pre-IPO year	14.29 (35.64)	27.03 (45.02)	20.00 (40.83)
Revenue in pre-IPO year (\$ millions)	41.34 (147.31)	37.32 (50.56)	199.81 (504.84)
Offer size (\$ millions)	101.97 (103.99)	155.59 (222.89)	139.63 (165.43)
Percentage of firms with green-shoe (over-allotment) option	67.86 (47.56)	86.47 (34.66)	28.00 (45.83)
Percentage of firms belonging to the Internet services or software categories	71.43 (46.00)	59.46 (49.77)	52.00 (50.99)
Firm age at IPO date (years)	4.01 (2.13)	5.03 (3.98)	4.07 (3.63)
Number	28	37	25

Notes:

- Standard deviations are in parentheses below the sample means.
- Top-tier underwriter firms are those assigned the highest point score of 9 in the Carter et al. (1998) system; CS = Credit Suisse, GS = Goldman Sachs, Rest = Hambrecht & Quist and Salomon Smith Barney
- A green-shoe provision gives the underwriter the option to purchase additional shares at the offer price to cover over allotments. Presence of the provision indirectly increases underwriter compensation.

Figure 3 - Selected descriptive statistics for IPO firms classified by top-tier underwriters

7 Let P_{it} represent the day 1 open price of the i th firm and let P_{m1} be the corresponding level of the market (Nasdaq) index. Similarly, P_{it} and P_{mt} represent the open price at day t of the i th firm and the market respectively. The CMAR of the firm at time t is calculated as: $CMAR_{it} = [P_{it}/P_{i1}] \div [P_{mt}/P_{m1}] - 1$. The time in question does not refer to calendar time, but to the time from the IPO date.

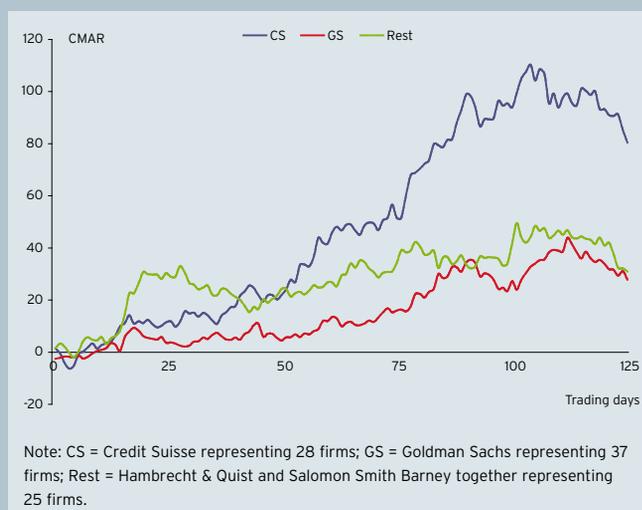


Figure 4 - Cumulative market-adjusted returns (CMAR) for IPO firms grouped by top-tier underwriters

(14 percent) and the rest (20 percent). Goldman firms were also marginally longer in business before the IPO date. On the other hand, Goldman firms were subject to greater initial underpricing on average. They also had a higher average offer size and were more likely to be subject to a green-shoe provision⁸. But the most suggestive statistic in our view is the six-month CMAR. The Goldman group's CMAR at 28 percent is significantly lower than that of the Credit Suisse group which racked up 80 percent. Thus aftermarket momentum (or manipulation if one were to take the cynical view) is lowest for firms represented by Goldman.

This is borne out by the CMAR patterns in Figure 4. The red line representing Goldman firms is virtually flat in the immediate aftermarket, when most purported price pumping takes place. The blue (Credit Suisse) and green (Hambrecht & Quist and Salomon Smith Barney) lines suggest higher levels of momentum and reversal within a six-month period – more of a bubble within a bubble pattern with the benefit of hindsight.

After all is said and done, the tech bubble is only one instance of a series of such events in recorded history. And, while these events result in a lot of wealth destruction, the firms left standing in the end usually signify technological and productivity gains to society, which may in the long-run exceed the Schumpeterian costs.

We do not profess to know how to execute such a cost-benefit analysis. Instead, we decided to undertake an outlier analysis within our sample. We carried out a case study-type analysis of the 20 firms that registered a six-month CMAR of more than 100 percent and were represented by top-tier lead underwriters. We were essentially projecting ourselves back in time before the crash and picking a small

IPO firm name/current or former ticker symbol	CMAR %	Lead underwriter	Status
Infospace Inc (INSP)	199.2	Hambrecht & Quist	B
Art Technology Group (ARTG)	255.4	Hambrecht & Quist	B
F5 Networks Inc (FFIV)	469.9	Hambrecht & Quist	A
Inktomi Corp (INKT)	142.7	Goldman Sachs	C
Ebay Inc (EBAY)	623.4	Goldman Sachs	A
Viant Corp (VIAN)	183.6	Goldman Sachs	D
Active Software Inc (ASWX)	248	Goldman Sachs	C
Allscripts Inc (MDRX)	103.9	Goldman Sachs	A
Tibco Software (TIBX)	182.8	Goldman Sachs	B
Inet Technologies (INTI)	119	Goldman Sachs	C
Juniper Network Inc (JNPR)	116.5	Goldman Sachs	A
NetIQ Corp (NTIQ)	141.9	Credit Suisse	C
Appnet Systems Inc (APNT)	158.4	Credit Suisse	C
Commerce One Inc (CMRC)	609.8	Credit Suisse	C
E.Piphany Inc (EPNY)	138.3	Credit Suisse	C
Phone.com Inc (PHCM)	141.4	Credit Suisse	C
Software.com Inc (SWCM)	237.3	Credit Suisse	C
Tumbleweed Software Corp (TMWD)	201.7	Credit Suisse	C
Liberate Technologies (LBRT)	487.2	Credit Suisse	C
Vitria Technology (VITR)	250	Credit Suisse	C

Notes:

- The above firms were represented by top-tier lead underwriters and experienced post-IPO six-month cumulative market-adjusted returns (CMAR) greater than 100 percent.
- Status (August 2009) definitions are given below:
- Successful ongoing enterprises; significant positive returns realized by early long-term investors.
- Viable ongoing enterprises.
- Merged, restructured or otherwise consolidated; significant impairment to early valuations.
- Defunct.

Figure 5 - Current status of selected IPO firms launched during the dotcom bubble era

subset of the likeliest candidates for success. How did they perform over the long-term? We traced the fortunes of these 20 firms from their IPO date up until the present (August 2009). We examined available financials, stock price performance, mergers, consolidations etc. Several firms were targets of class-action lawsuits filed by aggrieved stockholders claiming misstatements in the IPO prospectus and the like. Our findings are summarized in Figure 5, which is essentially a status report on each firm. We assigned each firm into one of following categories, or letter grades if you will.

- These are all firms that have survived and thrived. In our judgment, they all have successful business models and good prospects going forward. An investor who bought shares soon after the IPO date and held on to them till August 2009 would have realized significant positive returns. Only four of the 20 firms receive an A grade – three of these (Ebay, Juniper Network, Allscripts) were lead underwritten by Goldman Sachs. The fourth (F5 Networks) was underwritten by Hambrecht & Quist.
- The three firms in this category are viewed as viable ongoing enterprises. There is a fair amount of within-group variation. For

⁸ This may reflect Goldman's greater clout even within the top-tier group.

instance, Infospace (Hambrecht & Quist) has negative income in its latest financial year but still has a market capitalization of U.S.\$293 million. Early post-IPO investors who held on to their position would see a negative return. In contrast, Tibco Software (Goldman) is profitable, has a current market capitalization of U.S.\$1.61 billion, and a P/E multiple of 27. The only reason Tibco did not get an A grade is that early buy-and-hold investors would register a negative stock return.

- C The twelve firms in this group were severely impacted in the tech sector crash of 2000. While a small number survive with their original stock ticker symbol, none of these are profitable or actively traded. Most have merged, restructured, or otherwise consolidated. The common element is that early investors who had not divested before the crash would have suffered significant (if not quite total) losses. Goldman represented three firms in this group.
- D The one firm in this category (Viant; Goldman) declared bankruptcy in 2003 and is essentially defunct.

Hambrecht & Quist represented only three firms (1 A; 2 Bs), all of which survive and in aggregate delivered considerable value to early investors. Goldman's record is mixed with three As and a B balanced out with three Cs and a D. Credit Suisse has the poorest record in terms of our sample (9 Cs). None of the firms they represented were successful in weathering the tech sector shakeout. Thus, even among the small subset of IPO firms represented by top-tier underwriters and greeted with sustained enthusiasm by investors, ex-post analysis reveals considerable variation in the staying power of their business models.

Conclusion

A respected market observer recently commented: "When faced with market euphoria, whatever its source, financial institutions will always be confronted with the same stark choice: lower your standards or lower your market share."⁹

Goldman was certainly part of the general deterioration of underwriting standards but our analysis reveals that they did represent some very good firms and in terms of our CMAR analysis were a reasonably responsible player in the IPO aftermarket. Perhaps their quality control mechanisms were not quite so compromised. More recently, they seem to have recognized the risks stemming from subprime lending well ahead of their competitors, hedged with some success, and have emerged from the financial crisis more or less intact¹⁰. We doubt that Taibbi would set much store by this but there it is.

⁹ Jonathan A. Knee, senior managing director at Evercore Partners, in the New York Times, DealBook Dialogue, October 6, 2009.

¹⁰ Critics may point out that Goldman would likely have gone under (or at least taken large losses) if the U.S. taxpayer had not bailed out AIG and thereby its counterparties.