Revisiting the bubble: stock price performance of Australian IPOs 1999-2001

The idea of a stockmarket bubble and a crash remains for many a concept that only happens in textbooks. ADAM STEEN and KEITH TURPIE look through the remnants of the famous dotcom bubble and burst.

In a previous edition of JASSA, Steen and Turpie (2000) examined the initial post-listing stock price returns for Internet (dotcom) IPOs relative to all IPOs in Australia during 1999. Results indicated that by the close of the first day of trading, subscribers to the IPOs of Internet companies would have earned an average market-adjusted return of 60.84%, compared with 35.52% for an investment in non-Internet IPOs. The authors suggested that a possible explanation for the significant difference in returns was due to the presence of a ‘hot market’ or bubble.

By the beginning of 2000, many investors and commentators believed that stock prices, particularly those of Internet stocks, were inflated and that a market correction was imminent. The correction (popularly known as the ‘Tech Wreck’) occurred in mid April of that year. The subsequent fall in Internet stock prices raised the issue of long-run IPO performance.

This article examines the level of initial post-listing stock price returns of all IPOs listed on the Australian Stock Exchange (ASX) over the period January 1999 to August 2001. The aim of this is to determine whether the IPOs of 1999, particularly Internet issues, were inflated or overpriced and to determine the extent to which the performance of IPOs, specifically Internet IPOs, was adversely affected by the April 2000 market correction.

Market corrections and long-run IPO returns
In 1975, Ibbotson and Jaffe noted evidence of ‘fads’ in the US market for IPOs. They called these events ‘hot issue’ markets and noted that such markets are characterised by:

- Large numbers of offerings.
- Concentration of new issues in particular industries.
- Preponderance of smaller issues.
- Frequent oversubscription; and
- Abnormally high initial returns.

During these periods many poor quality IPOs are floated to take advantage of the market’s over-optimism (Shiller (1990), Ritter (1991)). In addition, Ritter (1991) found that the long-run performance of IPOs varied widely between industries.

One of the most frequently cited works on IPOs is by Ritter (1984) who investigated the level of underpricing of IPOs in the US ‘hot issue’ market of January 1980 to March 1981. Ritter reported that the average initial return on unseasoned new issues of common stock was 48.4 per cent, significantly higher than returns found in ‘non-hot’ or ‘cold’ markets. Further, Ritter found that this underpricing was almost entirely confined to issues of resource stocks. Allen and Faulhaber (1989) suggest that the impetus for this was not the state of the stock market but the general economic conditions of the time, in particular the 1979 oil crisis.

Such changes in economic conditions give rise to a transition in the IPO market. Numerous studies have subsequently confirmed the presence of ‘hot’ and ‘cold’ markets across time and location including the US (see for example Wise 1988; Marcial 1992;
Dark and Carter 1993; Helwege and Liang 2001), UK, Germany and South Korea (Ritter 1998).

Over the long run, research suggests that on average, IPOs earn lower returns than comparable existing, or seasoned firms for several years after listing. Ritter (1991) found that when considered over the period from issue to their third anniversary of listing, US IPOs on average substantially under performed a matched sample of seasoned firms, with significant variation in performance depending on the year and industry under consideration. Companies that went public in high volume or ‘hot’ years performed the worst. This finding was attributed to excessive positive investor sentiment during these periods.

Similar results have been found in Australian studies. Mustow (1994) and Allen and Patrick (1994) document under performance in post-listing returns of IPOs over a 3-year period of –25.38% and –112.8% respectively. The difference in the returns performance between these two studies may be due to the time periods being analysed. The earlier study may have covered a ‘hot issue’ market while the later did not. If the dotcom or Internet bubble was a ‘hot issue’ market, then we would expect that when market sentiment changed, the new Internet IPOs would significantly under perform non-Internet IPOs and the market as a whole.

**Methodology**

All new listings on the ASX between 1 January 1999 and 31 August 2001 were examined to determine whether they were a true IPO in the sense that they were the first equity issue to the market at large.

Hence, investment and property trusts, relistings, spin-offs, compliance listings, companies currently listed on a foreign exchange and issues of convertible securities were excluded from our sample. The period was chosen to obtain an even split of 16 months either side of 14 April 2000 market correction. Share prices were obtained from the SIRCA database. Company specific data were obtained from company prospectuses and the Connect4 database.

Of the 299 IPOs listed during the period, 98 were classified as Internet or Internet-related companies, determined from the description of the company’s business activities in the prospectus or the company details section of the Aspect DatAnalysis database.

Following accepted methodology, the initial return was defined as the first day gross return to an investor who acquired a share by subscribing to the IPO and who later sold it at the closing price on the first day of trading.

The abnormal return for each IPO, i, over the period t-1 to t is defined as

\[ AR_{it} = \frac{P_{it} - P_{it-1}}{I_{t-1}} - \frac{I_{t} - I_{t-1}}{I_{t-1}} \]

and;

\[ P_{it} = \text{the closing price of share } i, \text{ t periods after the initial offering where } t = \text{ day 1 to day 21 and months 2 to 12, and } t_0 \text{ is the offer date,} \]

\[ It = \text{the value of the All Ordinaries Accumulation index } t \text{ days or months after the offering,} \]

\[ t = 1, \ldots, T \]

The Average daily market Adjusted Return, AAR, (calculated to accumulate the abnormal returns for a portfolio of N companies at time t) is given as:

\[ AAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{it} \]

The sample mean AARt is a performance index reflecting the return (in excess of the market return) on an investment, divided equally among the N issues in the sample.

Where a company was subject to takeover prior to 12 months, any compensation paid to shareholders (either in equity or cash) was included in the calculation of return.

The cumulative market adjusted return (CAR) for the sample for day 1 to day 21 (and months 2 to 12) is:

\[ CAR_t = \sum_{t=1}^{T} AAR_t \]

**Results**

On Friday 14 April 2000 stock markets in the US experienced a major correction. The Australian market followed suit, falling 5.68% when the market closed on the following Monday. This correction has become known as the ‘Tech Wreck’. Table 1 shows descriptive statistics of Internet

<table>
<thead>
<tr>
<th>IPO Type</th>
<th>Pre/Post 14/4/2000</th>
<th>Number of IPOs</th>
<th>Amount Raised (Mean $m)</th>
<th>Total Assets (Mean $m)</th>
<th>Total Liabilities (Mean $m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Internet</td>
<td>Pre</td>
<td>81</td>
<td>33.64</td>
<td>33.15</td>
<td>25.83</td>
</tr>
<tr>
<td>Internet</td>
<td>Pre</td>
<td>55</td>
<td>24.08</td>
<td>16.02</td>
<td>7.35</td>
</tr>
<tr>
<td>Total</td>
<td>Pre</td>
<td>136</td>
<td>29.77</td>
<td>26.30</td>
<td>18.44</td>
</tr>
<tr>
<td>Non-Internet</td>
<td>Post</td>
<td>120</td>
<td>26.52</td>
<td>81.62*</td>
<td>40.52</td>
</tr>
<tr>
<td>Internet</td>
<td>Post</td>
<td>43</td>
<td>23.68</td>
<td>26.73</td>
<td>3.69</td>
</tr>
<tr>
<td>Total</td>
<td>Post</td>
<td>163</td>
<td>25.76</td>
<td>66.10</td>
<td>30.18</td>
</tr>
<tr>
<td>Total Sample</td>
<td></td>
<td>299</td>
<td>27.62</td>
<td>46.86</td>
<td>24.49</td>
</tr>
</tbody>
</table>

* Includes the Australian Wheat Board which had assets of around $2.7 billion.
and non-Internet IPOs pre and post 14 April 2000.

The table indicates that, in general, pre-correction Internet IPOs were smaller and raised less funds than non-Internet IPOs. The difference between the two groups in terms of total assets was statistically significant at the 10% level but no statistical difference in the amount raised was found. Surprisingly, the ‘Tech Wreck’ did not reduce the number of IPOs coming to market. In the 16 months pre-correction, 136 IPOs listed while 163 listed post-correction.

Chart 1 indicates that for the period January 1999 to August 2002, CARs for Internet stocks were higher than for non-Internet stocks. Overall, the 98 Internet stocks had a mean initial return of 47.40% (standard deviation 101.37%) while the 201 non-Internet stocks had a mean initial return of 25.05% (standard deviation 72.79%).

Normalising the sample and excluding cases where the initial return was more than three standard deviations from the mean (n=7) leaves 95 Internet IPOs with a mean initial return of 33.65% (standard deviation 62.51%), while the 197 non-Internet companies had a mean initial return of 17.13% (standard deviation 39.49%). Internet stocks had roughly twice the initial return compared with non-Internet stocks, with the difference in initial returns between the two groups being significant at the 5% level.

Table 2 provides details of initial return for all IPOs, pre and post correction. What is evident is that initial returns for all IPOs were dramatically lower post-correction (10.46%) than pre-correction (58.69%), statistically significant at the 1% level.

Mean returns pre-correction for Internet stocks (80.21%) were far greater than non-Internet stocks (44.08%). These results were reversed post-correction with Internet stocks returning 5.60% compared with non-Internet stocks 12.21%. Not surprisingly, therefore, there was no statistical difference in initial returns between Internet and non-Internet stocks. This is clear evidence of a ‘hot issue’ IPO market, particularly with respect to Internet stocks.

An analysis of variance with initial return as the dependent variable and binomial independent variables representing market correction and Internet or non-Internet stocks indicates that the market correction was highly significant (at the 1% level) in determining initial returns. However, the binomial variable representing Internet or non-Internet stocks was not significant in explaining differences in initial returns. This could be due to the few cases of extremely high initial returns. Once again we normalised the sample by excluding cases of extreme values. When the analysis of variance was recalculated, both the market correction and Internet/non-Internet variables were significant in explaining differences in initial returns (Adjusted R2 10.70%, F= 18.432 P<.0005).

Chart 2 tracks the performance of the market index over the sample period against IPO initial returns. While the market index recovered quickly following the April 2000 correction, IPO initial returns on average appear visibly lower, confirming the end of the ‘hot market’.

Chart 3 illustrates the long-run CARs performance of Internet, non-Internet and all IPOs listed for the two to 12 month period post-listing. CARs of Internet IPOs fell dramatically after month 4 and by the end of the year had returns lower than non-Internet IPOs.

This clearly illustrates that Internet stocks were initially overpriced compared with non-Internet stocks, and as the market re-evaluated their future, prices fell accordingly. (Statistically, the difference between the CARs of Internet and non-Internet IPOs was significant for the first five months.)
of trading). Unlike those of the Internet stocks, CARs of non-Internet IPOs were in excess of 20% for the full 12 months.

**Conclusion**
The figures show that the correction had a significant impact on the IPO market overall. On average, issues were generally smaller and initial returns lower post correction. These results are consistent with the general evidence of IPO ‘hot’ and ‘cold’ markets.

What is interesting is that while the market (as measured by the All Ordinaries Accumulation Index) recovered quickly after the correction, the IPO market did not. A possible reason for this result is that investors did not lose faith in the market per se but the IPO market specifically.

Over the longer run, investors in non-Internet stocks maintained a return in excess of 20% for the entire period. Returns on Internet stocks declined dramatically, but investors still would have seen a gain of 20% on their initial investment.

Purchasing Internet stocks post listing would have resulted in a substantial loss on average to the investor, while those that stayed clear of ‘dotcom’ IPOs would have fared much better. This, of course, is predicated on the presumption that they were lucky enough to get an allocation of the float in the first place.

**References**


Helwege, J. and Liang, N. (2002), 'IPOs in Hot and Cold Market,' Finance and Economics Discussion Series,


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