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Bengi Ertuna  
*Bogazici University*

Metin Ercan  
*Bogazici University*

Vedat Akgiray  
*Bogazici University*

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# **The Effect of the Issuer-Underwriter Relationship on IPOs: The Case of an Emerging Market**

**Bengi Ertuna<sup>+</sup>**  
**Boğaziçi University,**

**Metin Ercan<sup>++</sup>**  
**Boğaziçi University**

**and**

**Vedat Akgiray<sup>+++</sup>**  
**Boğaziçi University**

The aim of this paper is to investigate the impact of the issuer-underwriter relationship on the price performance of IPOs in the Turkish market. IPOs by related underwriters are found to exhibit higher levels of underpricing. Empirical evidence does not lend support for the certification effect. The outcome of higher underpricing may be due to deliberate underpricing by the related underwriter in order to make subsequent IPOs by the same group more attractive or may have to do with market recognition of potential conflict of interest.

The pricing behavior of initial public offerings (IPOs) has attracted widespread research attention both in developed and emerging markets. Explanations for the widely documented IPO underpricing phenomenon differ according to firm characteristics, market regulations and other contextual factors. Different factors are found to affect the magnitude and causes of underpricing across both developed and emerging markets. The main purpose of this paper is to investigate the impact of the issuer-underwriter relationship on the price performance of IPOs in one of the emerging market settings, namely Turkey. Emerging markets are characterized by severe agency and information asymmetry problems stemming from ineffective regulatory environment, weak minority shareholder protection,

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<sup>+</sup> **Bengi Ertuna** is an associate professor of finance in the School of Applied Disciplines at Boğaziçi University. Her research interests include small business finance, initial public offerings and corporate governance ([bengie@boun.edu.tr](mailto:bengie@boun.edu.tr)).

<sup>++</sup> **Metin Ercan** is Associate Professor of Finance at Bogazici University. He has published extensively in the areas of privatization, reform of the social security system, capital market development and the performance of the banking system in Turkey ([mercan@boun.edu.tr](mailto:mercan@boun.edu.tr)).

<sup>+++</sup> **Vedat Akgiray** is a professor of finance and the chairman of Financial Engineering Department at Bogazici University. His current research is in the area of stochastic modeling in risk management ([akgirayv@boun.edu.tr](mailto:akgirayv@boun.edu.tr)).

and the domination of family business groups (Sullivan and Unite, 2001). In a typical emerging market, financial institutions and regulatory framework are newly developing and market participants are relatively less experienced. The Turkish market resembles other emerging markets in many respects. Continual changes in regulations, information asymmetry issues, agency problems, and family control also prevail in the Turkish context (Guner et al.; 2000; Muradoglu, 2000; Yurtoglu, 2001). Thus, this setting presents itself as a valuable ground to investigate the role of the issuer-underwriter relationship in the IPO price performance.

Similar to previous empirical findings in the Turkish market (Guner et al; 2000; Kiymaz, 2000), persistent abnormal returns are also detected in this study. Differential IPO underpricing across related and unrelated IPOs may be due the certification effect and conflict of interest. When the issuer and the underwriter are related, the inherent information advantage might lead to a better certification and/or conflict of interest problem, all of which may have different effects on underpricing. Reputational concerns play a pivotal role in determining which effect will dominate. Evidence indicates greater underpricing when the underwriter and the issuer belong to the same group. Related IPOs are found to belong to larger issuing companies, involving greater amounts of proceeds and higher percentages of equity offered. The presence of greater underpricing in related issues does not lend support for the certification explanation of underpricing. When the IPOs are reclassified according to the lead underwriter's involvement with the related issue, significant differences are not observed among the abnormal returns in IPOs by different groups of underwriters. However, the highest abnormal returns belong to IPOs by underwriters conducting only-related issues.

In IPOs by underwriters engaging in both related and unrelated issues, defined here as the *mixed group*, related issues are found to exhibit significantly greater underpricing than that in unrelated issues. This further suggests the irrelevance of the certification effect in the Turkish context. However, this does not necessarily lend direct evidence for the conflict of interest explanation, as this effect largely depends on the market's ability to capture it. If such a conflict of interest is recognized by market participants, underpricing may occur in the form of additional compensation demanded by investors. This study raises an alternative explanation which warrants further investigation of group-driven motives for such an occurrence. When the lead underwriter and the issuer belong to the same group of companies, underpricing might be viewed as a mechanism through which prospective investors are enticed to participate in subsequent offers by the same group.

## **Previous Studies**

Empirical evidence from numerous studies on IPO's suggests the presence of three distinct patterns of price behavior in developed markets: initial underpricing, cycles in the extent of underpricing, and long-run underperformance (Ritter, 2002). Initial underpricing of IPOs is also widely documented in various emerging market settings (Loughran et al; 1995) including the Turkish market (Kiymaz, 2000; Guner et al; 2000). Another pattern observed in emerging markets is that underpricing exhibits a decreasing trend as financial markets evolve (Su and Fleisher, 1999).

Despite a general consensus on the presence of price patterns in the extant literature, different explanations and theoretical perspectives are presented. An important vein of explanations focuses on the information asymmetry argument. This explanation seems to gain more importance in emerging markets, where contextual characteristics contribute to the information asymmetries besides the usual IPO-inherent asymmetries.

The existence of informational asymmetry between informed and uninformed investors (Rock, 1986), and between underwriters and issuers (Baron, 1982) are initially put

forth as explanations for the well-documented abnormal return phenomenon. In the case of informational asymmetry between underwriters and issuers, the issuer's inability to perfectly monitor the underwriters' distribution efforts is claimed to result in greater underpricing. However, Muscarella and Vetsuypens (1989) fail to lend supportive evidence to this hypothesis. In their study of self-marketed offerings, where information asymmetry is presumed to be absent, they still document significant underpricing.

As an alternative explanation, third party certification is suggested to reduce underpricing by decreasing any ex-ante uncertainty about the firm value. If the underwriters inappropriately reduce the offer price by a considerable amount, they are likely to be punished by subsequent losses in market share (Dunbar, 1999). Such reputational concerns are claimed to produce a sufficient incentive to more fairly price the firm. Supportingly, venture capital backing (Megginson and Weiss, 1991; Brav and Gompers, 1997) and the existence of a banking relationship (James and Wier, 1990) are found to lower the extent of underpricing, largely due to the certification effect. However, the certification effect, which might reduce informational asymmetry between insiders and outside investors, becomes blurred when there is a potential conflict of interest between the certifying party and the issuer (Hamao et al; 2000). They point out that if outside investors perceive a potential conflict of interest, they would demand more underpricing as compensation. However, reputational concerns may alleviate this effect and a conflict of interest might not influence that much underpricing. How the market reacts to the combined effect of certification and conflict of interest would seem to determine the final outcome. While conflicts of interests do not seem to affect IPO pricing in the U.S. as reputational concerns dominate (Gompers and Lerner, 1999), the evidence on Japanese markets (Hamao et al; 2000) and on Philippines markets (Sullivan and Unite, 2001) indicate that the problem of conflicts of interest is taken as more relevant by market participants and this leads to greater underpricing.

The interaction between certification and conflict of interest becomes operational when the underwriter and the issuer are affiliated. In the presence of affiliation, the lead underwriter might have the incentive to market the issue more aggressively and to overstate the stock value (Hamao et al; 2000), leading to lower underpricing. On the other hand, Puri (1999) suggests that private information obtained through affiliation might have two opposing effects. First, it might cause a conflict of interest such that the underwriter may misrepresent the value of the issuing firm. Second, better pricing might be ensured as the underwriter certifies the firm value more accurately.

Affiliation is also said to exist when a venture capitalist who holds financial claims in the issuing firm's assets acts as the lead underwriter. However, empirical evidence is mixed on this issue. In the U.S. market, Megginson and Weiss (1991) report lower underpricing in IPOs where the venture capitalist is also the underwriter. They argue that lower initial returns can be taken as a sign of increased certification and reduction of information asymmetry between inside and outside investors. However, in Japanese and Philippine IPO markets, higher underpricing is documented in venture-backed IPOs (Hamao et al; 2000; Sullivan and Unite 2001) as market participants demand more underpricing to compensate for the perceived conflict of interest.

## **The Turkish Market**

The Istanbul Stock Exchange was legally established in 1981 with the enactment of the Capital Market Law. However, it became operational in 1986. In time, the development of the ISE became highly representative of an emerging market with rapid growth in terms of market capitalization, trade volume, and number of listed companies as well as high volatility in returns. At the beginning of 1986, 42 stocks were listed and the annual volume

of trade was \$13 million. The annual volume of trade topped \$181.9 billion in 2000. Not surprisingly, the market capitalization of the ISE grew fast. It increased from \$0.9 billion at year end 1986 to \$114 billion by the end of 1999, before declining to \$69.5 billion by the end of 2000. Developments in the ISE are presented in Table I.

Different amendments to the Capital Market Law since 1981 contributed to the development of regulations and procedures governing the IPO market in Turkey. Currently, the first stage of the IPO process starts with the registration of the prospective issuing company with the Capital Market Board (CMB), which is the regulatory institution for the financial markets in Turkey. The main focus at the registration stage is on assuring that adequate and non-misleading information is provided to the public. It should be noted that the CMB does not authorize but only permits prospective issuers to proceed with the IPO, ascertaining that all of the documents required by the related legislation are disclosed fully and correctly. All financial statements submitted to the CMB for registration must be approved by certified independent auditors. In the following stage, the prospective issuer has to sign a contract of intermediation with one or more of the underwriting firms authorized by the CMB. Both auditors and intermediary institutions can still be held legally responsible for their failure in providing fair and non-misleading information.

The CMB also sets the ground rules for the underwriting and sales procedures. Underwriting can be on the basis of either best-efforts or firm commitment. The latter may be designed as either a stand-by agreement or a full commitment agreement. Under the stand-by arrangement, the underwriter is obligated to assume in full and cash all unsold shares at the end of the selling process, while full commitment requires full payment for all the shares right before the selling process starts. In regard to capital adequacy, the CMB imposes certain restrictions on the amount that a given intermediary institution can underwrite. Financial responsibility from previous issues continues until all underwriting requirements are fulfilled by the underwriter. This illustrates the importance of the previous experience and reputation of the underwriter embedded in the IPO process. If the underwriting is carried out by a syndicate, the intermediary institution designated as the lead underwriter assumes all responsibility of the issue against all related governmental agencies including the CMB, the issuer, and the third parties.

The development of the IPO market in Turkey is presented in Table II. Since the inception of the IPO market in Turkey, 261 IPOs have been completed, generating total proceeds of over 6.3 billion U.S. dollars. There is no apparent time pattern in the IPOs, both in terms of the number of IPOs and the proceeds. The market has displayed an erratic pattern. 1990 and 2000 have been the most active years for IPOs. It may be noted that the large volume of IPOs in 1990 was mainly due to large scale privatization sales in that year. The activity in 2000 was largely due to the overoptimism prevailing in the economy in that period. However, the overoptimism of 2000 was reversed by the economic crisis of 2001, which can be noticed easily as only two IPOs took place between January 2001 and July 2002.

## **Data and Methodology**

The data includes all the IPOs since the start of the IPO market in Turkey, covering the period from January 1990 to July 2002. Excluding two IPOs by two soccer clubs<sup>1</sup>, the remaining total number of IPOs during this period is 259. The data on daily stock prices,

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<sup>1</sup> Two prominent but heavily indebted soccer teams rely on IPO as they realize club membership loyalty would override lack of economic attractiveness.

market index values, all firm and issue characteristics regarding the offers are obtained from the electronic database of the ISE.<sup>2</sup>

Initial price performance is measured by calculating three return figures. The first is the first-day raw return (RR1), calculated as the percentage difference between the offer price and the first day closing price. Second, market-adjusted rates of return are calculated by subtracting the return on the ISE index from that on the stock on the first (AR1), second (AR2), third (AR3) and fourth (AR4) day of trading after the offer. Third, these market-adjusted returns are cumulated to the end of the third, seventh and tenth day of trading to get the cumulative rates of return CAR3, CAR7 and CAR10, respectively.

The other variables used in the study are denoted and defined as AGE (the age of the issuing firm at the time of the IPO, expressed in years since the establishment), SIZE (the pre-IPO market value of the company), OFFPER (the percentage of total equity offered to the public), PROCEEDS (the number of shares sold times the offer price), LEADEX (the number of previous IPOs by the lead underwriter), LEADEXD (the total dollar value of previous IPOs by the lead underwriter), and UNDNUMBER (the number of underwriters participating in the IPO).

The relationship between the issuer and the underwriter is defined and explored in two dimensions. First, an IPO is designated as a *related* issue when the issuer and the underwriter belong to the same group of companies. In these cases, comparisons are made across related and unrelated issue categories. Second, underwriters are classified into three groups depending on the relatedness to the IPOs they conduct. The first group (the *mixed group*) contains those underwriting both related and unrelated issues. The second group and the third group contain those underwriting only related issues (*only-related group*) and those dealing with only unrelated issues (*only-unrelated group*), respectively. Comparisons are then made among these three groups.

## Empirical Findings

A first-step examination of the empirical evidence on the Turkish IPO market demonstrates that the initial price performance is similar to that in both developed and other emerging markets. Table III reports the average initial return performance of the IPO market in Turkey. Statistically significant abnormal returns, which are observed during the first two days, indicate the presence of underpricing. Daily abnormal returns beyond the second day are not statistically different from zero. The most pronounced daily return is observed in the first day and exceeds 11%, with and without market adjustment. The cumulative abnormal return reaches to 16.2% on the third day, increases to 20.4% on the seventh day, and levels off thereafter.

Before analyzing in detail the differences in price performance of IPOs by different categories of underwriters, some basic characteristics of related and unrelated issues are initially compared and the results are reported in Table IV. Although the average age (AGE) of the issuing companies of IPOs by related underwriters (14.77 years) is lower than that by unrelated underwriters (17.62), the difference is not statistically significant. Similarly, the differences between related and unrelated underwriters with respect to the number of underwriters in the syndicate (UNDNUMBER) and also with respect to the previous IPO value underwritten (LEADEXD) are not statistically significant. Unrelated underwriters, however, seem to have underwritten more IPOs in the past (LEADEX) than related underwriters. More importantly, both the average company value going public (SIZE) and also the percentage of equity offered to the public (OFFPER) via related underwriters are statistically significantly greater than those via unrelated underwriters. The average SIZE

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<sup>2</sup> Available at [www.imkb.gov.tr](http://www.imkb.gov.tr).

figures are \$418m and \$90m for related and unrelated issues, respectively. The two findings directly imply the PROCEEDS with related underwriters is significantly greater than that with unrelated underwriters. Furthermore, related underwriters seem to generate these greater volumes with a smaller number of underwriters in the syndicate (LEADEX) than unrelated underwriters.

The above findings suggest that related underwriters engage in the IPOs of larger companies with greater amounts of proceeds and a higher percentage of equity offered. Dealing with larger sized companies may imply an extra incentive (for example, higher underwriting revenues) for the related underwriter to process more information. Moreover, the existence of an equity relationship may mitigate any problems associated with information asymmetries between the underwriter and the issuer. Both of these factors would seem to imply a lower overall underpricing in IPOs conducted by related underwriters, provided that the information advantage leads to better certification. However, it should be noted that this information advantage can also be used against the interests of outside investors, who in turn may require extra compensation for this conflict of interest. Whether certification or conflict of interest is in effect is thus an empirical issue. If reputational concerns dominate, underpricing may be expected to be lower. On the other hand, if the conflict of interest problem is deemed to be more important, higher underpricing may be expected. The answer would then depend on the perceptions of the market participants. Another cause for underpricing might be due to strategic behavior by the lead underwriter. Such a pricing strategy may occur in both related and unrelated issues. However, it is possibly more pronounced when the underwriter and the issuer belong to the same group of companies. In such a setting, in addition to possible reputational concerns of the underwriter, group-driven factors might also be in effect. Such factors might result in deliberate underpricing, especially in earlier IPOs of the group. Making other group company subsequent offers more attractive and reallocating cash flow within the group can be mentioned as possible internally driven motives for such behavior.

To investigate the impact of the issuer-underwriter relationship on abnormal returns, different analyses are conducted for different subsamples of relatedness. Differences in abnormal returns between the IPOs by related and unrelated issues are initially examined and the results are reported in Table V. Both the average raw return and the average abnormal return during the first day after the IPOs by related underwriters are significantly greater than those by unrelated underwriters. Specifically, the first day average market adjusted return for related IPOs is 18.15%, while it is 8.70% for unrelated IPOs. However, beyond the first day of trading, no significant differences can be seen in either daily or cumulative abnormal returns. The higher underpricing in related issues is interestingly noticeable only in the first day of trading after the offering.

Higher underpricing in the presence of an equity relationship between the underwriter and the issuer seems to undermine the relevance of the certification and the reduced informational asymmetry explanations of underpricing. Therefore, these results might be attributable to the conflict of interest and/or strategic pricing explanations mentioned above.

To investigate the presence of strategic pricing in IPOs by related underwriters, a series of comparisons are made between different underwriter categories. When underwriters are classified into mixed, only-related and only-unrelated groups, underpricing is expected to differ across IPOs by these groups of underwriters. Especially, if group-driven factors are in effect, the highest underpricing is anticipated for IPOs by the only-related group of underwriters. Table VI displays the empirical differences in the average returns between the three groups of underwriters. Although average underpricing on the

first day of trading for the only-related-group is in the anticipated direction and magnitude, differences between the three groups are not statistically significant.

The case of the mixed group, which involves both related and unrelated issues by the same underwriter, may help clarify any possible motives of underpricing. Underwriters in the mixed group may have both internally and externally motivated intentions. For example, differential underpricing between related and unrelated issues by the same underwriter would suggest the presence of group-driven motives. According to a strategic pricing argument, underpricing is expected to be greater in related issues belonging to the mixed group. Of the 183 IPOs conducted by the mixed-group of underwriters, 48 belong to companies within the same group. Considering both raw and market adjusted returns in Table VII, the average first-day return is around 17% for related issues, while it is around 7% for unrelated issues and the difference is statistically significant. This finding is consistent with the strategic pricing argument. However, it should be noted that this difference may also be due to the learning effect in that underwriters could gain experience through time. To control for this learning effect, differences in the time of offering between related and unrelated IPOs are investigated and no significant differences are found in the timing of the two different groups. Specifically, related and unrelated issues do not significantly differ in terms of both calendar ranking and the year of issue. Finally, beyond the initial trading day, no further evidence of different pricing behavior is observed between related and unrelated issues by the mixed-group of underwriters.

It can be argued that if underwriters use underpricing as a means to generate further future demand for companies within the same group, the degree of underpricing may be expected to decline in subsequent offers. To check for this eventuality, the related issues, which represent about 25% of the total sample, are regrouped in order of occurrence in time. As the empirical evidence in Table VIII suggests, the extent of underpricing actually declines in time, albeit to a statistically insignificant degree. Nevertheless, the average abnormal return of the first related issue is 27.2%, which drops to 16.9% in the second offer, and then to 9.1% in the third and subsequent offers. If this trend is to continue into the future, statistical significance may also be eventually seen.

## **Conclusions**

This study provided new evidence of the underpricing of initial public offerings and investigated its possible causes in the Turkish equity markets, where a pattern of significant daily abnormal returns for the first two days of trading is observed. However, the extent of underpricing seems to depend on the relationship between the underwriter and the issuer. IPOs by related underwriters are significantly more underpriced than the others. When this finding is further detailed in line with the “conflict of interest” and “certification effect” arguments in the literature, both similarities and also differences are found between the Turkish markets and other markets of the world. The conflict of interest argument seems to be supported, while the presence of any certification effect is not clear.

In future work, it would be interesting to continue this research topic in two dimensions. The nature of any association between the underwriter and the issues may be set up with more detail. Second, a comparative international study based on the same assumed structure of relationship details may provide a common explanation for all of the countries.

## REFERENCES

- Baron, D.P, 1982, A Model of Demand for Investment Banking Advertising and Distribution of Services for New Issues, Journal of Finance, 37, 955-976.
- Brav A. and P. Gompers, 1997, Myth or Reality? The Long-run Underperformance of Initial Public Offerings: Evidence from Venture and Non-venture Capital Backed Companies, Journal of Finance, 52, 1791-1821.
- Dunbar, C.G., 1999, Factors Affecting Investment Bank Initial Public Offering Market Share, Journal of Financial Economics, 55: 3-41.
- Güner N., Z. Önder and S.Z. Rhodes, 2000, Underwriter Reputation and Short-run IPO Returns: A Re-evaluation for an Emerging Market, ISE Finance Award Series, 1, 85-112.
- Hamao, Y., F. Packer and J.R. Ritter, 2000, Institutional Affiliation and the Role of the Venture Capital: Evidence from Initial Public Offering in Japan, Pacific Basin Finance Journal, 8, 529-558.
- James C. and P.Wier, 1990, Borrowing Relationships, Intermediation and the Cost of Issuing Public Securities, Journal of Financial Economics, 28, 149-171.
- Kim, M. and J.R. Ritter, 1999, Valuing IPOs, Journal of Financial Economics, 53, 409-437.
- Kiyamaz H., 2000, The Initial and Aftermarket Performance of IPOs in an Emerging Market: Evidence from Istanbul Stock Exchange, Journal of Multinational Financial Management, 10, 213-227.
- Krigman, L, Shaw, W.H. and K.L.Womack, 1999, The Persistence of IPO Mispricing and the Predictive Power of Flipping, Journal of Finance, 54, 1015-1045.
- Lougran, T., J.R. Ritter and K. Rydqvist, 1994, International Public Offerings: International Insights, Pacific-Basin Finance Journal, 2, 165-199.
- Megginson W.L. and K.Weiss, 1991, Venture Capitalist Certification in Initial Public Offerings, Journal of Finance, 46, 879-903.
- Muradođlu G., 2000, Efficiency and Anomalies in the Turkish Stock Market, in D.B. Keim and W.T. Ziemba, eds.: Securities and Market Imperfections in Worldwide Equity Markets, (Cambridge University Press, Cambridge).
- Muscarella C.J. and M.R.Vetsuypens, 1989, A Simple Test of Baron's Model of Underpricing, Journal of Financial Economics, 24, 125-135.
- Puri, M.,1999, Commercial Banks as Underwriters: Implications for the Going Public Process, Journal of Financial Economics, 54, 133-163.

- Ritter J.R., 2002, Investment Banking and Securities Issuance, in G. Constantinides, M. Harris and R. Stulz, eds.: Handbook of Economics and Finance (North- Holland).
- Rock, K.,1986, Why New Issues are Underpriced, Journal of Financial Economics, 15, 187-212.
- Slovin, M.B. and M.E. Sushka, 1997, Implications of Equity Issuance Decisions within a Parent-Subsidiary Governance Structure, Journal of Finance, 52, 2, 841-857.
- Su, D. and B.M. Fleisher, 1999, Explainig IPO Underpricing in China, in B. Chen and Y. Feng, eds.: Financial Market Reform in China: Progress, Problems and Prospects (Westview Publishers).
- Sullivan, M.J. and A.A. Unite, 2001, The influence of Group Affiliation and the Underwriting Process on Emerging Market IPOs: The Case of Philippines, Pacific-Basin Finance Journal, 9, 487-512.
- Yurtoğlu, B., 2001, Turkey, in K.Gugler, ed.: Corporate Governance and Economic Performance (Oxford University Press).

**Table I**  
**The Development of the ISE**

Year	Volume of Trade		Total Market Capitalization	Annual Rate of Return
	Total	Daily Average		
	USD Million	USD Million	USD Million	% TL
1986	13	0.05	938	71
1987	118	0.47	3,125	294
1988	115	0.45	1,128	-44
1989	773	3.03	6,756	493
1990	5,854	23.70	18,737	47
1991	8,502	34.42	15,564	34
1992	8,567	34.13	9,922	-8
1993	21,771	88.50	37,824	417
1994	23,203	91.71	21,785	32
1995	52,357	208.59	20,782	47
1996	37,737	152.78	30,797	144
1997	58,104	230.57	61,879	254
1998	70,396	283.85	33,975	-25
1999	84,034	356.08	114,271	485
2000	181,934	739.57	69,507	-38

**Table II**  
**Size of the Turkish IPO Market**

	Number of IPOs		Proceeds	
	#	%	(1,000 USD)	%
1990	34	13.13	1,308,572	20.73
1991	21	8.11	343,979	5.45
1992	13	5.02	93,153	1.48
1993	16	6.18	152,447	2.41
1994	25	9.65	270,480	4.28
1995	28	10.81	245,85	3.89
1996	27	10.42	167,922	2.66
1997	29	11.20	419,802	6.65
1998	20	7.72	404,744	6.41
1999	9	3.47	87,413	1.38
2000	35	13.51	2,800,805	44.36
2001	1	0.39	243	0.00
2002*	1	0.39	18,783	0.30
<b>Total</b>	<b>259</b>	<b>100.00</b>	<b>6,313,626</b>	<b>100.00</b>

\* As of July 2002, excluding two IPOs by soccer clubs.

**Table III**  
**Initial Return Statistics**

	Mean	Std.Error	t -value	Sig.
RR1	11.01	1.59	6.89	0.000
AR1	11.04	1.58	6.99	0.000
AR2	3.57	1.03	1.03	0.001
AR3	0.88	0.59	1.50	0.135
AR4	0.76	0.40	1.88	0.061
CAR3	16.24	2.12	7.65	0.000
CAR7	20.43	3.14	6.52	0.000
CAR10	20.19	3.31	6.11	0.000

RR1 indicates raw return on the first day of trading. AR1 represents market-adjusted return on the first day of trading. AR2, AR3 and AR4 are market adjusted returns on days two, three and four, respectively. CAR3, CAR7 and CAR10 denote cumulative market-adjusted returns at the end of the third, seventh and tenth day of trading, respectively.

**Table IV**  
**Differences in IPO Characteristics: Related - Unrelated Issues**

	Related Issues	Unrelated Issues		
	(n=64)	(n=195)	F-statistic	Sig.
Variables	Mean	Mean		
AGE (year)	14.77	17.62	2.21	0.138
SIZE (\$ thousand)	418,080	90,687	4.50	0.035
OFFPER (%)	29.40	23.27	5.17	0.024
PROCEEDS((\$ thousand)	51,026	15,631	4.57	0.033
LEADEX (number)	6.27	8.59	4.01	0.046
LEADEXD (\$ thousand)	165,697	172,050	0.03	0.863
UNDNUMBER (number)	3.45	4.53	0.07	0.798

AGE: age of the issuing firm at the time of the IPO; SIZE: pre-IPO market value of the company; OFFPER: percentage of total equity offered to the public; PROCEEDS: number of shares sold times the offer price; LEADEX: number of previous IPOs by the lead underwriter; LEADEXD: total dollar value of previous IPOs by the lead underwriter; UNDNUMBER: number of underwriters participating in the IPO.

**Table V**  
**Differences in Abnormal Returns: Related – Unrelated Issues**

Variables	Related Issues	Unrelated Issues	F-statistic	Sig.
	(n=64)	(n=195)		
	Mean	Mean		
RR1	17.78	8.77	6.07	0.014
AR1	18.15	8.70	6.85	0.009
AR2	1.78	4.16	0.99	0.321
AR3	0.35	1.06	0.27	0.603
CAR3	20.95	14.69	1.63	0.203
CAR7	24.31	19.16	0.50	0.479
CAR10	25.45	18.46	0.83	0.362

RR1 indicates raw return on the first day of trading. AR1 represents market-adjusted return on the first day of trading. AR2, AR3 and AR4 are market adjusted returns on days two, three and four, respectively. CAR3, CAR7 and CAR10 denote cumulative market-adjusted returns at the end of the third, seventh and tenth day of trading, respectively.

**Table VI**  
**Differences in Abnormal Returns across Different Groups of Underwriters**

	IPOs by Underwriters			F-value	Sig.
	Mixed Group	Only Related Group	Only Unrelated Group		
	(n=183)	(n=15)	(n=55)		
	Mean	Mean	Mean		
RR1	9.75	22.81	11.19	1.68	0.188
AR1	9.71	22.98	11.40	1.79	0.169
AR2	2.98	0.16	2.39	0.64	0.528
AR3	1.09	-2.96	1.22	1.23	0.294
CAR3	14.91	19.50	14.52	0.15	0.859
CAR7	19.60	16.95	17.63	0.05	0.952
CAR10	19.86	23.86	15.13	0.24	0.786

RR1 indicates raw return on the first day of trading. AR1 represents market-adjusted return on the first day of trading. AR2, AR3 and AR4 are market adjusted returns on days two, three and four respectively. CAR3, CAR7 and CAR10 denote cumulative market-adjusted returns at the end of the third, seventh and tenth day of trading, respectively.

**Table VII**  
**Differences in Abnormal Returns within the Mixed Group**

	IPOs by Mixed Group		F-value	Sig.
	Related Issues	Unrelated Issues		
	(n=48)	(n=135)		
	Mean	Mean		
RR1	16.64	7.30	5.92	0.016
AR1	16.98	7.12	6.93	0.009
AR2	2.06	3.30	0.56	0.455
AR3	1.03	1.11	0.00	0.959
CAR3	21.01	12.73	2.59	0.109
CAR7	25.18	17.61	0.91	0.341
CAR10	25.09	17.99	0.73	0.394

RR1 indicates raw return on the first day of trading. AR1 represents market-adjusted return on the first day of trading. AR2, AR3 and AR4 are market adjusted returns on days two, three and four, respectively. CAR3, CAR7 and CAR10 denote cumulative market-adjusted returns at the end of the third, seventh and tenth day of trading, respectively.

**Table VIII**  
**Differences in Abnormal Returns in Related Issues**

	First related	Second related	Third or more related	F-value	Sig.
	(n=26)	(n=15)	(n=23)		
	Mean	Mean	Mean		
RR1	26.86	16.39	8.99	1.53	0.224
AR1	27.19	16.92	9.13	1.66	0.199
AR2	2.72	0.72	0.93	0.31	0.735
AR3	0.50	1.46	-1.05	0.53	0.591
CAR3	31.11	20.28	9.10	2.19	0.121
CAR7	32.09	32.19	8.41	1.86	0.164
CAR10	31.84	41.57	7.41	2.17	0.123

RR1 indicates raw return on the first day of trading. AR1 represents market-adjusted return on the first day of trading. AR2, AR3 and AR4 are market adjusted returns on days two, three and four, respectively. CAR3, CAR7 and CAR10 denote cumulative market-adjusted returns at the end of the third, seventh and tenth day of trading, respectively.

