IPO certification:
The role of grading and transparent books

Arif Khurshed [a,*], Stefano Paleari [b], Alok Pande [c], Silvio Vismara [b]

[a] *Manchester Business School*
University of Manchester

[b] *Department of Economics and Technology Management*
University of Bergamo

c Ministry of Communications and IT, Government of India

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Abstract

India has the unique distinction of grading its IPOs and demonstrating the IPO bookbuilding process to investors. In the context of this backdrop we investigate the certification role of these mechanisms in bookbuilt IPOs in India. We find that contrary to the expectations, grading does not affect the underpricing of IPOs. We also find that though grading was introduced to help retail investors, it is instead being used by informed institutional investors to make their investment decisions in Indian IPOs. However, the benefits of grading do pass on to the retail investors, albeit indirectly. We show that the transparency of the IPO bookbuilding process offers a much stronger certification signal to retail investors as compared to that of IPO grading. Known certification mechanisms such as the reputation of the sponsor or VC affiliation are of limited importance in the Indian IPO market.

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[*] Corresponding author: Crawford House, MBS East, University of Manchester, Manchester M139PL, UK; Tel: +44 (0)161 275 4475; Fax: +44 (0)161 275 4023; Email: Arif.khurshed@mbs.ac.uk, stefano.paleari@unibg.it, alokpiimb@gmail.com, silvio.vismara@unibg.it..
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1. Introduction

Initial Public Offerings (IPOs) are characterised by high levels of information asymmetry. Firms that plan to go public often use various certification mechanisms such as high quality underwriters, venture capital affiliations, high quality auditors and lockup agreements to reduce information asymmetry and to signal their quality to potential investors. Past research, which is mostly on developed markets, has studied the impact of these certification mechanisms on the pricing of IPOs[1]. Only recently the focus has shifted to developing economies such as India. A recent paper by Deb and Marisetty (2010) documents an interesting certification mechanism in Indian IPOs, namely IPO grading. From May 2007, Indian IPOs are compulsorily graded on a scale of 1 to 5 with 1 signifying poor fundamentals and 5 signifying very strong fundamentals. This grading is done by independent rating agencies and the grade is mentioned in the IPO prospectus. Deb and Marisetty assert that such a mechanism is unique to the Indian IPO market. They show that IPO grading has lead to lower underpricing and that retail investors show more interest in better

[1] For example, Beatty and Ritter (1986) and Carter, Dark and Singh (1998) among others, show that IPOs with highly reputable underwriters show lower initial returns. Barry, Muscarella, Peavey and Vetsuypens (1990) and Megginson and Weiss (1991) show that VC backed IPOs exhibit lower initial returns. However, a recent paper by Lee and Wahal (2004) shows the opposite results; VC backed IPOs exhibit higher initial returns. Beatty (1989) and Michaely and Shaw (1995) among others, show that IPO firms with top quality auditors show lower initial returns. Chemmanur and Paeglis (2005) show that IPO firms with good quality management show lower initial returns. Goergen, Khurshed and Renneboog (2009) show that IPOs with more stringent lockup agreements have lower initial returns.

graded IPOs where as institutional investors do not. In this paper we document another unique certification mechanism in Indian IPOs that is the outcome of a transparent bookbuilding process. We find that the Indian IPO bookbuilding process is the most transparent in the world in that the bookbuilding activity is shown live on stock exchange website with updates every 30 minutes. Retail investors observe the bidding behaviour of institutional investors in the opening days of the bookbuilding exercise and then decide if they wish to invest in the IPO or not. Early bids from institutional investors act as a certification mechanism for the quality of an IPO.

Using a sample of IPOs which is twice as large as the one considered by Deb and Marisetty (2010) and which covers a much longer period of time, we show that though the level of underpricing is lower in the post-grading regime (as documented by Deb and Marisetty), retail investors make their decisions to invest in an IPO based on another more powerful certification mechanism than grading, namely institutional investors' response during the bookbuilding process. Our results show that retail investors wait to see the initial bids from the more informed institutional investors before making their bids on the penultimate or the last day of the bookbuilding process. IPOs in which institutional investors show high levels of interest (through higher subscription levels) in the early stages of the bookbuilding process also see high level of retail subscriptions in the later stages of the bookbuilding process. Thus as a consequence of the transparency of the Indian bookbuilding process, retail investors use the bidding behaviour of institutional

investors as a certification mechanism. As expected, high levels of retail subscriptions have a strong positive effect on initial returns. Unlike Deb and Marisetty (2010), our results show that IPO grading does not show any statistically significant relationship with initial returns in the presence of retail subscription levels signifying that the certification provided by the early bids of institutional investor is a stronger signal for retail investors than that provided by grading. Other documented certification mechanisms such as VC affiliation and sponsor's high reputation do not work in Indian IPOs.

The rest of the paper is structured as follows. In section 2 we provide an overview of the literature on certification of IPOs. In section 3 we discuss the institutional features of the Indian IPO market in terms of IPO grading and the bookbuilding process. Section 4 discusses our testable hypotheses. In section 5 we discuss our data and methodology while in section 6 we present our results. Section 7 concludes.

2. IPO certification

IPO firms are associated with uncertainty and thus face significant challenges as they try to attract the attention of potential investors. While an IPO may enhance a firm's legitimacy, significant uncertainties remain about its capabilities (Fischer and Pollock, 2004). The challenge for an IPO firm is to convince a wide variety of potential investors that the firm is a good investment. To some extent, therefore, it is a matter of signals from the firm to the investment community about the quality of the firm.

Over the last two decades researchers have documented a number of certification mechanisms that IPO firms use in order to signal their quality to the market. Beatty and Ritter (1986), Carter and Manaster (1990) and Carter, Dark and Singh (1998) among others, document the use of highly reputable underwriters as a certification mechanism by IPO firms. These studies show that firms that use prestigious and well established underwriters show lower levels of initial returns. Hiring top investment banks as underwriters creates a perception in the market that the IPO firm must be of good quality. This perception partly reduces the need to underprice.

Another certification mechanism which has been the subject of numerous studies is venture capital affiliation. Barry et al (1990), Megginson and Weiss (1991) and Gompers (1996) among others, study the effect of VC affiliation on the level of underpricing of IPOs. Barry et al (1990) find that high levels of VC ownership, VC's longer spells on boards of investee firms and larger VC syndicates lead to lower first day returns. The authors conclude that VCs provide a good monitoring role in the firms in which they invest. Megginson and Weiss (1991) also find that the presence of VCs reduces underpricing. Interestingly in a recent paper Lee and Wahal (2004) demonstrate that the presence of VCs increases underpricing. The authors argue that this is because of the endogeneity involved- larger underpricing in a particular industry increases subsequent VC funding in that industry and also increases the reputation of the VC concerned in the market. Larger underpricing is also a *quid pro quo* to the underwriters in return for favourable allocations of shares in other hot IPOs. The timing of the IPOs studied is important. While Barry et al (1990) study

IPOs in the 1978-87 period, Megginson and Weiss (1991) do so for the 1983-87 period. In contrast, Lee and Wahal (2004) study IPOs for a much longer period (1980 to 2000).

Other IPO certification mechanisms have also been studied. Beatty (1989), Michaely and Shaw (1995) and Albring, Elder and Zhou (2007) study the effect of auditor quality on the level of underpricing of IPOs. They all report lower initial returns for IPOs with high quality auditors. Business group affiliations and lockup agreements have also been found to affect IPO initial returns. Dewenter, Novaes and Pettway (2001) find that the underpricing of group affiliated Japanese keiretsu companies is much higher than that of non affiliated companies. The authors argue that the complexity of a business group structure leads to higher information acquisition costs for investors who are compensated with underpriced shares. Marisetty and Subrahmanyam (2010) find similar evidence for Indian business group affiliated IPOs. Goergen, Khurshed and Renneboog (2009) show that for French IPOs, the more stringent a lockup agreement, the lower the underpricing.

Recently Deb and Marisetty (2010) document a new and interesting certification mechanism in the Indian IPO markets. This mechanism relates to IPO grades. Since May 2007 all IPOs in India have to undergo a mandatory grading exercise by independent rating agencies. Using a sample of 163 IPOs (48 of which are graded) that came to the market during 2006-09, the authors find that post 2007, Indian IPOs show lower levels of underpricing. They attribute this finding to the implementation

of compulsory IPO grading. The authors also find that retail investors in India show more interest in better grade IPOs (in terms of their subscriptions) while institutional investors only focus on a firm's leverage and earnings potential when making investment decisions.

In our paper we extend Deb and Martisetty's (2010) debate on certification of Indian IPOs by documenting another more powerful certification mechanism than grading, i.e. early bidding by institutional investors in the bookbuilding period.

3. Preparing a firm for an IPO in India

While planning an IPO in India, firms undergo the usual preparations such as hiring of advisers, pricing of shares, drafting of prospectuses and application to the stock exchange. Two interesting aspects of the Indian IPO process stand out, first, the compulsory grading of IPO firms and second, the transparency of the bookbuilding process. Below we discuss these two aspects in greater detail.

3.1 Grading of IPOs

Before the bookbuilding process, a firm preparing for an IPO in India goes through a grading process. This grading process was made mandatory by the Indian regulator SEBI (Securities and Exchange Board of India) from the 1st of May 2007. Currently there are 5 rating agencies in India and the IPO firm can choose any one of them. These rating agencies grade a firm on a scale of 1 to 5 with 1 indicating poor fundamentals and 5 indicating strong fundamentals when compared with the listed

peers[2]. This grade as well as its rationale (given by the rating agency) is required to be disclosed in the draft prospectus as well as all advertisements by the firm.

The primary aim of the grading exercise is to provide some information to the uninformed investors regarding the fundamentals of the firm going public. The fundamentals are based on a comparison with the listed firms in the market. The front page of the IPO prospectus carries information on the grade received by the firm with further details provided later in the document. The rating agencies emphasize that though investment decisions are based on (a) analysis of fundamentals, (b) analysis of returns and (c) investor's preferences, the grading of the IPOs addresses only the first of these issues. Therefore a high grade may not result in an investment decision if investors feel that the returns that they desire from the IPO and their investment preferences do not match.

The costs of grading are borne by the IPO firm. The firm cannot reject the grade granted to it by a rating agency but it can approach another rating agency. However, the firm must disclose in its prospectus all the grades that it has obtained. The grade also has a validity period (usually two months) and on expiry needs to be revalidated by the rating agency which takes into account any material developments for or against the firm before this revalidation.

[2] Prior to the 1st of May 2007 the regulator had required the grading of IPOs to be optional at the discretion of the firm going public. The grading of IPOs in India is carried out by credit rating agencies which are registered with the regulator. The assigned grade is an independent opinion by an agency which is not connected with the placement of the IPO shares. The firm going public must get a grade from at least one of these rating agencies.

The grading exercise starts at the time when the IPO firm files its draft prospectus before the regulators. In terms of the information content, the hired rating agency has more information about the firm than is reflected in the draft prospectus. It holds a series of meetings with the firm. These meetings are held at the level of the Chief Executive Officer(CEO) and Chief Financial Officer(CFO) besides the heads of the Strategic Business Units(SBUs). The rationale of the grade awarded by the rating agency is to be communicated to the firm and the firm is supposed to disclose this rationale in its prospectus. For example, Suryachakra Power, a power plant builder and operator conducted its IPO in 2007. It was awarded a grade of 2/5 indicating that the fundamentals of the issue were below average relative to similar listed firms in India. Its listing prospectus carried the following information on grading

"…The grading is constrained by the fact that the promoters do not have any prior experience in setting up and operating a biomass based power plant and significant raw material price uncertainty associated with biomass based power....
CRISIL notes the chequered track record of the promoters in running businesses in the past – specifically that two of their companies that were engaged in the aquaculture business are now defunct……."

(Taken from pages 8 and 9, Red Herring Prospectus, Suryachakra Power Corporation Limited)

At present there are five credit agencies registered with the market regulator SEBI who can carry out IPO grading. These are Credit Analysis and Research (CARE), ICRA, CRISIL, FITCH Ratings, and Brickwork. CRISIL is owned by Standard and Poor (S&P) while Moody's is the largest shareholder in ICRA Limited. It is noteworthy that S&P, Moody's and Fitch are recognized as Nationally Renowned

Statistical Rating Organizations (NRSRO) of the Securities and Exchange Commission (SEC) in the United States. CARE and Brickwork are domestic firms.

3.2 Transparency of the Indian bookbuilding process.

The IPO firm's underwriter first files a draft offer document with the regulator. This is called the Draft Red Herring Prospectus. A Draft Read Herring Prospectus contains all the vital information on the firm except for the price band and the number of shares to be sold. The firm simultaneously files a listing application with the stock exchanges (the Bombay Stock Exchange or the National Stock Exchange or both). The underwriter and the firm then go for road shows where they interact mostly with institutional investors to get an idea about the demand for their shares. It is during the course of these road shows that the underwriter decides about the pricing band. After the pricing band has been finalized, the underwriter files the final Red Herring Prospectus with the regulator. This prospectus contains the price band and details on the bookbuilding exercise.

According to the Indian regulatory setup, investors are divided into three categories and the allocation tranches of these categories are pre-defined. Institutional investors (known as Qualified Institutional Buyers or QIBs) are allocated no more than 50% of the offered shares. Non-institutional investors (NIIs), defined as individuals investing more than INR 100,000 in the issue, are allocated 15% of the offered shares. Retail investors, who can invest up to a maximum of INR 100,000 have to be allocated no less than 35% of the offered shares. In our study we focus on the

behaviour of institutional and retail investors (and ignore non institutional investors[3]) as they form the two extremes of the spectrum of financial literacy.

The bookbuilding process in India is an extraordinarily open process. For every IPO, the stock exchange shows a 'live' book with updates every half an hour (mandated by regulation). The stock exchange web site shows how many shares against each of the investor-categories have been applied for and the percentage of the issue that has been subscribed to. At the close of each bookbuilding day the website shows the cumulative bids for all the categories of investors at their respective prices. Hence, the timing and subscription pattern, for the different investor groups, is observable during the bookbuilding period. This attribute of the Indian IPO market allows investors to use online real-time information to decide on their subscriptions while the book is being built. Such an arrangement stands in contrast to the bookbuilding exercise in the US and European markets, where such detailed information about the book is almost never made public. The defining characteristic of the Indian IPO bookbuilding process is therefore its transparency.

4. Testable hypotheses

Given the unique nature of the Indian regulatory set up where many regulations have been framed for protecting the interests of retail investors with usually low

[3] NIIs are relatively small players in Indian IPOs as they can only subscribe to no more than 15% of the shares on offer.

levels of financial literacy (Deb and Marisetty 2010), we first test the validity of the documented certification mechanisms such as underwriter reputation and VC affiliation, in terms of their relationship with underpricing. We then test hypotheses on two new certification mechanisms, IPO grading (as proposed by Deb and Marisetty 2010) and the transparency of the bookbuilding process.

We first examine the hypothesis that the reputation of the sponsor acts as a certification mechanism and affects IPO underpricing. Carter and Manaster (1990) demonstrate that more reputable investment banks associate themselves with low risk offerings. Because the inherent risk is lower, such firms have lower underpricing. Carter, Dark and Singh (1998) also found that when reputed investment banks handle an IPO, the associated short-term underpricing is lower. However recent evidence on the relationship of underwriter reputation and underpricing is contrary to the one documented in the past. Loughran and Ritter (2004) find that during the internet bubble period, the prestige of the underwriter went hand in hand with leaving more money on the table. IPOs with high reputation underwriters were relatively more underpriced. It is understandable that while on the one hand the investment bank has the firm going public as its client, on the other hand its clients are institutional investors. If investment banks value their relationship with these institutional investors more than they do with the firm, then they would be leaving more money on the table, to be picked up by the institutional investors. Given the contradictory evidence on the relationship between underwriter

reputation and underpricing, our prediction of the relationship between underwriter reputation and underpricing is ambiguous.

Our second hypothesis relates to the certification by VCs. India has, in the latter half of 1990s, experienced a sound growth rate in its economy. This has attracted the attention of VCs. Recent figures show that during the period 2004-08 private equity investments in India grew by more than five times (Jain and Manna 2009). As discussed earlier, theoretically the evidence of the presence of venture capitalists on IPO underpricing is mixed. Lee and Wahal (2004) demonstrate that the presence of VCs increases underpricing refuting the earlier evidence of Barry et al (1990) and Megginson and Weiss (1991). We further argue that the presence of VCs is likely to act as a signal to the uninformed investors about the likely growth prospects and/or quality of a firm. This is likely to result in large subscriptions by these investors. Derrien (2005) shows that the presence of uninformed investors (noise traders) results in higher first day returns. In the light of conflicting evidence on the relationship between VC affiliation and underpricing, our prediction on the relationship between VC affiliation and underpricing is ambiguous.

As discussed earlier, one of the primary objectives of the grading exercise is to reduce information asymmetry between the issuers and investors. A high grade should signal a better quality. The grading exercise includes the overall effect of the business prospects, financial prospects, management quality and corporate governance of the firm. Thus the grade is an assessment by an independent agency

of the true value of the firm when compared to listed peers. Therefore the grade should reduce the *ex-ante* uncertainty about the firm going public and consequently should reduce underpricing of the graded issues with respect to the non graded issues. In line with the findings to Deb and Marisetty (2010) we hypothesise that the higher the grade awarded to a firm, the lower should be its underpricing.

Even though the rating agencies in India have started the grading of the IPOs only recently, they have been present in the debt markets in India for a long time. Therefore the rating agencies have a reputational capital to protect. Since CRISIL, ICRA and FITCH are owned by international players (such as Moody's and S&P) who would be more sensitive towards their reputational capital, we hypothesise that IPOs graded by CRISIL, ICRA and FITCH would be of higher quality and therefore will exhibit lower underpricing. In contrast, IPOs graded by CARE and Brickwork will show higher underpricing.

If grading is indeed a result of the analysis of fundamentals of a firm then grades should be conveying the same information to the uninformed investors, what the costly research would be conveying to institutional investors. The rating agencies are expected to give grades based on most of the parameters on which institutional investors do costly research. Taking an analogy from the debt markets, better credit

ratings do result in higher investments by institutional investors[4]. Hence we hypothesise that IPOs with higher grades should exhibit greater demand from institutional investors (QIB).

As information on bids during the bookbuilding exercise is 'real time' and costless, retail investors are expected to wait till the 'more informed' institutional investors reveal their sentiments (in terms of early bids or the lack of) towards an IPO. Therefore we hypothesise that retail investors follow institutional investors when making bids for IPO shares.

5. Data

The use of bookbuilding procedure to price IPO shares in India started in 1999. However firms have the choice of using a fixed price offering. We only include bookbuilt IPOs in our study. Our sample includes all the 301 bookbuilt IPOs on the Bombay Stock Exchange and the National Stock Exchange during the years 1999 to 2010(April). 97 of the 301 IPOs came to the market after May 2007 and carry grades. The data for this study come from several sources. We download IPO prospectuses from the website of SEBI, the stock market regulator. Each prospectus gives us details on the number of shares issued, issue price, age of the firm, the underwriter, the grade awarded to the firm, the name of the grading agency and the percentage of

[4] For example in the United States, Money Market mutual funds cannot invest in short term debt which has not been rated under the highest or second highest category (Security and Exchange Commission, 2003)

equity retained by the promoters in the IPO. We check for VC affiliation by assiduously going through all the prospectuses. Information on the bookbuilding exercise is downloaded from websites of the two main stock exchanges in India, the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE)[5]. These websites provide information on the start and close of the bookbuilding exercise and the day by day demand by different investor categories. We use PRIME database rankings of investment banks as our proxy of underwriter reputation. PRIME database ranks investment banks according to their market share. Investment banks which were in the first ten of PRIME rankings are considered to be having a reputational advantage over the other investment banks.

5.1 Estimation model and variables

We estimate the uncertainty-reducing effects played on underpricing by different signals, namely the underwriter reputation, the affiliation with venture capitalists, the IPO grade, and early subscriptions of informed institutional investors (QIBs). We introduce a set of control variable in the regression. The first is the amount of equity retained by a firm's promoters. The higher the percentage of equity retained by a firm's insiders, higher would be the degree of underpricing and vice versa. Leland

[5] The two main exchanges in India are the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE). There are 20 regional stock exchanges but the trading activity in such exchanges is very low. The BSE became a fully demutualized corporate entity on 19th August 2005. It is one of the oldest exchanges in the world having been established in 1875 as "Native shares and stock brokers association". The NSE was incorporated in 1992 as a fully demutualized entity although trading in the equity segment started only in 1994.

and Pyle's (1977) model predicts that the retention of a large amount of equity in the IPO by the firm sends out a signal that the firm is confident of its future cash flows whereas offloading a large amount of equity in the IPO gives the signal of expected bad news. More recently Brau and Fawcett (2006) surveyed Chief Financial officers (CFOs) and confirmed this hypothesis.

The second control variable is the age of the firm. The older a firm is, the higher are the chances that the market has some information about the operations of the firm. This helps the market reduce the *ex-ante* uncertainty about the firm. Beatty (1989) shows that the reduction in *ex-ante* uncertainty reduces the underpricing for the firm. Bubna and Prabhala (2010) find a negative, although insignificant correlation between firm age and underpricing in the Indian context.

The third control variable is the issue size. IPOs with large issue size are expected to be underpriced lesser as per the standard results in IPO literature. Besides these variables, we control for hot issue periods and industry by using year and industry dummy variables.

In order to study the effect of grading of IPOs on underpricing we use the traditional measure of underpricing where we measure underpricing as the return on the stock between the offer price and the first day closing price adjusted for the market return during the close of the book to the first day's trading. It is important to note that in India there is an average time of three weeks between the end of the bookbuilding exercise and the day of admission. Therefore we correct our measure of underpricing

for the market movements during this period. Table 1 summarises the definitions of the variables considered in our study.

[TAKE IN TABLE 1]

6. Results

Table 2 provides information on the level of IPO activity in India over the last 10 years. In the initial years of the bookbuilding exercise in India, only 10% of the firms chose to use the procedure to price their shares. With time, more firms chose to use bookbuilding and by 2005 nearly 65% of the IPOs were using bookbuilding. This increased to 86% in 2006 and 2007. For the last two years (2008-10) all IPOs in India have been bookbuilt. The table also shows that the current financial crisis has had a limited impact on the Indian IPO market. While the established IPO markets such as those of Europe and the US are almost closed for the last two years, there have been nearly 140 IPOs in India since the year 2007. We divide IPOs in terms of proceeds raised and find that nearly 80% of the bookbuilt IPOs in India raised less than INR 5 billion (1 $ = INR 45)

[TAKE IN TABLE 2]

Table 3 presents the distribution of grades assigned by various rating agencies. There is sufficient variation in grades achieved, not only within the ratings awarded by a rating agency but also across different agencies so there is little evidence of a self selection bias. The 3 highly reputable rating agencies (CRISIL, ICRA and FITCH)

have graded nearly half of the 97 IPOs that have been graded since 2007. None of the firms in our sample achieved a grade of 5 (the highest possible). Most of the firms (46%) received a grade of 3 (average fundamentals). A quarter of the firms received a grade of 2. Nearly 2 out of 10 firms in our sample received a grade of 4. The average grade awarded by the rating agencies is 2.77. We compare the average grade between agencies and find that the differences of the grades obtained across the agencies are not statistically significant.

[TAKE IN TABLE 3]

In Table 4 we provide details of underpricing of Indian IPOs over the last decade. At the height of the dotcom bubble, the level of underpricing was quite high (55% in year 1999). The post dotcom bubble crash years saw much lower underpricing levels in India. There were almost no IPOs in the years 2001-2002. The IPO run started in year 2004. The average underpricing in 2004 was 45%. There was a monotonic increase in the number of IPOs till the onset of the current global financial crisis. Year 2007 saw the highest number of IPOs over the last decade and the average level of underpricing was 34%. Years 2008 to 2010 (April) have seen relatively lower IPO activity and modest underpricing. In line with the evidence from IPO markets in Europe, Indian IPOs have also shown *overpricing* in the years 2009-10. The table also shows the results of the comparison of underpricing between graded and ungraded IPOs. Like Deb and Marisetty (2010) we do find that the average underpricing of graded IPOs is lower than that of ungraded IPOs but we are not convinced that it is

grading that has led to lower underpricing for the following reasons. First, in India, the general level of underpricing has been decreasing since 2003. Figure 1 shows that the level of underpricing has been decreasing since 2003 (except for 2006), much before the implementation of compulsory grading in May 2007. Second, the decrease in underpricing after 2007 may be due to a general macro-economic trend as has been seen post sub-prime crisis in most markets around the world. Third, the decrease in underpricing could be connected to grading in that grading has resulted in different types of firms coming for an IPO. Indeed the number of firms going public in 2008 and 2009 was lower than in previous years. This might be due to a positive selection in the decision to go public after the implementation of grading. Maybe most of the firms coming for an IPO carry relatively less risk (higher grades) and this has led to lower underpricing since 2007.

[TAKE IN TABLE 4]

In Table 5 we compare the underpricing levels and subscription patterns based on the grades achieved by IPO firms. Contrary to the conclusions presented by Deb and Marisetty (2010) we find that the mean (and median) levels of underpricing do not decrease as the grades go up. Surprisingly grade 1 IPOs show *overpricing*. However our results for grade 1 IPOs should be interpreted with caution as the sample size is relatively small.

We do find that retail subscriptions increase with grades with the mean subscription rising from 2.58 times oversubscription for grade 1 issues to 10.19 times

oversubscription for grade 4 issues. However the standard deviation also increases and a one way ANOVA test (not reported in the table) does not reveal any significant differences across groups with a p-value of 0.55 (not reported in the table) which indicates that the null of all groups having the same mean retail oversubscription cannot be rejected. This is again in contrast to the results by Deb and Marisetty (2010). The mean QIB oversubscription level in graded issues increases from 1.63 times in Grade 1 issues to 49.84 times in Grade 4 issues[6]. The oversubscription levels of the QIBs seem to be increasing monotonically with grades. Interestingly, a one way ANOVA test across the groups results in a F value of 2.45 with a associated p value of 0.08 which shows that the null of same mean across the groups has to be rejected at 10% level. Though, with limited statistical significance, the implication of this result is that the QIBs do seem to be increasing their subscriptions in IPOs with higher grades. So grading does seem to result in some value for QIB investors although the intention of the grading scheme was to provide valuable information to retail investors. Again, this result is opposite to the one reported by Deb and Marisetty, who argue that institutional investors do not rely on grading.

[6] The QIB investors did not subscribe at all in the IPO of Niraj Cement and subscribed by more than 185 times in the IPO of Religare Industries.

Among rating agencies, on average, CARE and ICRA (Moody's) grade IPOs with higher underpricing and retails subscription, while the three IPOs graded by Brickwork have been associated with *overpricing* and low levels of subscriptions.

[TAKE IN TABLE 5]

To summarise, the results of our tables 4 and 5 challenge the assertions of Deb and Marisetty (2010) that underpricing has decreased since grading was made mandatory in India in 2007 and that higher grades lead to lower underpricing. We test the relationship between grade and underpricing in our regression analysis presented later.

The transparency of the Indian bookbuilding data permits us to dissect the components of demand by investor type. We cumulate daily bids of retail and institutional investors for the first, second, penultimate and final day of the bookbuilding exercise. We ignore other days because some IPOs have their books open for 5 days, others for 7 days and for some even higher. Table 6 provides information on the subscription patterns of retail and institutional investors during the bookbuilding period. It is interesting to note that institutional investors submit their bids very early in the bookbuilding process. At an average, the QIB tranche of the IPO shares is *oversubscribed* by 17.2% by the end of the first day of the bookbuilding exercise. In comparison, at an average only 6.7% of the shares of the retail tranche get subscribed on the first day. Subscription level increases to 32.3% on the second day of the bookbuilding exercise. Retail investors reveal their full

demand either on the penultimate or the last day of the book. We argue that because of the transparency of the Indian bookbuilding exercise, retail investors observe institutional investor bids in the early days of the book and then make their investment decisions. A strong institutional response on the first or second day of the bookbuilding exercise acts as a certification mechanism for retail investors. We therefore find support for our hypothesis that retail investors observe institutional investors' behavior before making their bids for IPO shares.

[TAKE IN TABLE 6]

Table 7 presents the results of our regression analyses. Model 1 tests the relationship between underwriter's reputation (IBREP) and the first day underpricing. The coefficient of IBREP is insignificant. This shows that in the case of India, underwriter's reputation does not work as a certification mechanism to mitigate information asymmetry[7]. Model 2 assesses the certification role of VCs in Indian IPOs. We find that the presence of VCs has no significant effect on the level of underpricing[8] of Indian IPOs. Model 3 demonstrates the effect of grading on IPO underpricing. The results indicate that there is no impact of grading on the underpricing of IPOs. These results do not support the observations of Deb and

[7] The robustness of these results is checked by using Market Adjusted Abnormal Returns (MAAR) as a dependent variable with the same set of independent variables. Market adjusted abnormal returns are defined as {(1+Ri)/ (1+Rm)-1}.

[8] 34.66% of our sample firms were VC backed. This is quite similar to 37% VC backed IPOs in the sample of Lee and Wahal (2004).

Marisetty (2010) that grading reduces underpricing. In Model 4 we include the certification mechanisms considered in models 1-3. The results confirm that underwriter reputation, VC affiliation and grading are not related to IPO underpricing.

[TAKE IN TABLE 7]

Table 8 presents the effect of grading on the subscription patterns of different classes of investors. As can be seen from the table, the explanatory power of the models is quite low when explaining the subscription levels of retail investors. Interestingly the coefficient of IBREP-the reputation of the investment bank is significant in explaining the subscription of QIBs. This suggests that institutional investors use underwriter's reputation as a certification mechanism when applying for shares where as underwriter's reputation is not important for retail investors. This is expected. Institutional investor's response to an IPO already incorporates the role of underwriter's reputation. As retail investors follow institutional investors they do not pay attention to this certification mechanism. Further, we find that QIB subscription is also higher in large sized issues and issues with top grades. Once again our results show that retail subscriptions are not affected by grading.

[TAKE IN TABLE 8]

Having demonstrated that higher grades have a positive effect on the QIB subscription patterns we now investigate whether the transparency of the book is a stronger signal to retail investors than the grading of IPOs. For this purpose we look

at the day by day demand in graded issues. We evaluate whether retail investors in graded issues make their investment decisions either by observing the demand patterns of the QIBs one day before the closure of the book or do they make use of the grades assigned to a firm. Table 9 presents the results. The retail subscription levels (on the last day of the bookbuilding exercise) in graded IPOs are largely being determined by the QIB subscription levels on the penultimate day of bookbuilding. The role of grading becomes irrelevant[9]. Effectively, the grading exercise is not providing any additional information to retail investors than what is provided by the transparency of the bookbuilding process.

[TAKE IN TABLE 9]

To summarise, we find that the tradition certification mechanisms such as underwriter's reputation and VC affiliation do not work in the Indian IPO market. The role of grading in Indian IPOs is quite mixed. High grades do not lead to lower underpricing though retail subscriptions do increase with grades. Institutional investors rely on grading, a result which is contrary to the one presented by Deb and Marisetty (2010). We find that the transparent bookbuilding exercise in Indian IPOs

[9] The sample used here is limited to 97 graded IPOs (Table 9). This may introduce a selection bias in the sense that the relationship between grading and book transparency might be affected by self-selection when deciding on graded. Grading has been compulsory since May 2007 and may have changed the nature of the firms going public. To address this possibility, we use an instrumental variable measuring the 'propensity to be graded'. Following prior research on IPOs (see for instance Pollock et al., 2010), we employ the Heckman procedure (Heckman, 1979) to create the instrument. We run a probit regression on the whole sample of 295 IPOs to predict the probability of being graded. This regression is then used to create the selectivity instrument to be included among the baseline regressors in our regression models.

acts as a strong certification mechanism which is of immense help to relatively uninformed retail investors. Retail investors observe the bidding behaviour of institutional investors in the early stages of the bookbuilding exercise and wait till the penultimate or last day of the bookbuilding exercise before revealing their full demand. Institutional investors take underwriter's reputation, size and grading of IPOs when making their bids. Retail investors don't. Retail subscriptions on the last day of the bookbuilding exercise depend on the penultimate day institutional investor demand. Grading plays no role in retail subscriptions.

7. Conclusions

In this paper we examine the certification role of various signals in bookbuilt IPOs in India. We first test if documented certification mechanisms such as underwriter's reputation and VC affiliation play any role in explaining the first day returns of IPOs. We find that these mechanisms do not play any significant role in explaining underpricing of Indian IPOs. We then discuss the validity of a new certification mechanism (IPO grading) proposed by Deb and Marisetty (2010) and document the role of another, more relevant certification mechanism i.e. transparent bookbuilding exercise in India.

We find that IPOs in India which are handled by more prestigious underwriters do not leave more money on the table than the non prestigious ones. This does not support the results of Loughran and Ritter (2004) and Ritter and Welch (2002) for US IPOs. Second, Indian IPOs which have VC affiliation do not leave any more or less

money on the table than un-affiliated IPOs. We proceed to investigate if the recently introduced IPO grading process in India is able to reduce the ex-ante uncertainty and hence the first day returns of IPOs. Our results suggest that IPO grading has done little in reducing ex-ante uncertainty of IPOs firms and therefore there is no significant drop in the first day returns of Indian IPOs after the introduction of grading in 2007. On the contrary, the transparency of the bookbuilding exercise conveys significant information to retail investors.

We further investigate whether Indian investor groups are making use of IPO grading while making their investment decisions and find that the more informed institutional (QIB) investors do invest more in IPOs with higher grades. A puzzle for us was as to why the uninformed retail investors in India, for whom the grading process was designed, are not making use of grades. We find that retail investors find the unique regulatory feature of the transparency of the book to be a much stronger signal than the information provided by IPO grades. We suggest that there is sequential learning amongst Indian IPO investors. Institutional investors, through their research and the use of certification mechanisms such as high reputation underwriters, large IPOs and high grades, decide if they wish to invest in IPOs. They bid for shares in the early days of the bookbuilding exercise. Retail investors follow institutional investing patterns. Institutional investors come in early so as to entice retail investors into applying for shares. When a large number of retail investors bid for shares, IPOs are oversubscribed. This benefits institutional investors who can sell their allocations at a higher price during the first few days of trading.

Our results have important policy implications. The regulations in Indian IPO market have been designed to protect the interests of retail investors. The IPO grading exercise was therefore one of the means of providing retail investors with an unbiased opinion from an external rating agency. Our results show that retail investors' subscriptions are not driven by the grade awarded to the firm but by the demand patterns of the informed investors in such IPOs. Therefore retail investors can protect themselves from the "winner's curse" even without the grading exercise. Nevertheless, it seems to us that the grading exercise is pointing towards the right direction because the subscription patterns of informed investors are positively correlated with higher grade IPOs. At present this might be a second order effect for retail investors but in the longer run the retail investors would perhaps also get benefitted from the grading exercise because of their mimicking of the demand patterns of informed investors. Other developing markets should explore the feasibility of using transparent books to protect the interests of their IPO investors.

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Table 1 Description of the variables used in the study

Variable	Description
OP	Offer Price (INR*)
CP	Closing Price(INR)
IBREP	This variable is a proxy for the reputation of the book running investment banker. IBREP is set equal to 1 if the book-running investment banker is in the top 10 ranks of Prime Database, else it is set equal to 0. The Prime Database uses the market share of the investment bankers to determine these rankings
AGE	Number of years since incorporation of the firm to the year of the IPO
Eqt_RET	Percentage of equity retained by the owners of the firm
QIB_sub	The total shares subscribed by Qualified Institutional Buyers (QIBs) as a proportion of the total number of shares available to them for allocation. This is measured after the book has been built.
QIB_penultimate	The total shares subscribed by Qualified Institutional Buyers (QIBs) as a proportion of the total number of shares available to them for allocation till the penultimate day of bookbuilding.
Market return	(Closing value of S&P CNX Nifty on the day of listing-Closing value of S&P CNX Nifty on the day of book closure)/ (Closing value of S&P CNX Nifty on the day of book closure)
RET_sub	The total shares subscribed by Retail Investors as a proportion of the total number of shares available to them for allocation. This is measured after the book has been built.
RET_buildup	This variable indicates the last day buildup of the retail demand in terms of the number of shares subscribed by the retail investors on the last day of bookbuilding as a proportion of the total number of shares available to them for allocation
Grade	The actual grade (1 to 5) awarded to the firm by the rating agency
VC_Presence	A dummy variable which takes a value 1 if the Venture Capitalists have invested in an IPO and 0 otherwise
Underpricing	This is the measure of market adjusted underpricing used in the literature [(CP-OP)*100/OP]−Market return

*INR is the Indian Rupee (1$ is approximately equal to 45 INR)

Table 2: IPO activity (using the bookbuilding mechanism) in India for the years 1999-2010(April)

This table indicates the classification of 301 bookbuilt IPOs in India since the inception of bookbuilding in the year 1999. The classification is based on issue size. IPOs which are less than INR 1 billion in size are small IPOs , those between INR 1 to 5 billion are mid-sized IPOs and those greater than INR 5 billion are large sized IPOs.

Year	< INR 1billion	INR 1 to 5 billion	> INR 5 billion	Bookbuilt IPOs	As a % of all IPOs
1999-00	1	3	1	5	9.8
2000-01	10	1	0	11	10.09
2001-02	0	0	1	1	16.67
2002-03	1	1	0	2	33.33
2003-04	2	4	1	7	38.89
2004-05	6	5	4	15	65.22
2005-06	25	27	3	55	70.51
2006-07	36	23	10	69	86.25
2007-08	33	27	14	74	86.05
2008-09	11	5	1	17	100
2009-10(April)	14	20	11	45	100
Total	139	116	46	301	

Table 3 - Distribution of grades by rating agency

The sample consists of all the 97 IPOs graded by a rating agency, from May 2007 to April 2010. IPOs have been graded on a scale of 1 to 5 with 1 indicating poor fundamentals and 5 indicating strong fundamentals when compared with the listed peers. Statistically, the average grades by different grading agencies are not different from each other.

Grade	CARE		CRISIL (S&P)		ICRA (Moody's)		FITCH		BRICKWORK		Total	
	Obs.	%	Obs.	%	Obs.	%	Obs.	%	Obs.	%	Obs.	%
1	5	5.1	3	3.1	1	1.0	0	0	0	0	9	9.3
2	10	10.3	6	6.2	9	9.3	0	0	0	0	25	25.8
3	16	16.5	11	11.3	12	12.4	4	4.1	3	3.1	45	46.4
4	9	9.3	6	6.2	2	2.1	3	3.1	0	0	18	18.6
Total	40	41.2	26	26.8	24	24.7	7	7.22	3	3.09	97	100
Average grade	2.73		2.77		2.63		3.43		3		2.77	

Table 4 - Underpricing across sample years and in graded and ungraded firms

The sample consists of all the 301 bookbuilt IPOs that took place in India in the period 1999 to April 2010. Tests on the differences between graded vs non graded IPOs are significant at 1% level, based on t-statistics (mean) and the Mann-Whitney U-test (median).

Year	N	Mean	Median
1999	5	55.3	18.3
2000	11	16	17.9
2001	1	-8.7	-8.7
2002	2	15	15
2003	7	69.7	46
2004	15	45.1	27.8
2005	55	33.9	29.6
2006	69	18	1.1
2007	74	34	20.1
2008	17	3.7	-13.3
2009	39	-5.4	-8.67
2010	6	8.31	8.18
Non Graded firms	204	31.4	19.9
Graded firms	97	8.2***	0.4***
Total	301	24	11.5

Table 5 - Relation between grades, underpricing and subscription patterns

This table indicates the level of underpricing as well as the subscription patterns of retail and institutional (QIB) investors associated with different grades. The IPOs have been graded on a scale of 1 to 5 with 1 indicating poor fundamentals and 5 indicating strong fundamentals when compared with the listed peers. The subscription levels of the Retail and institutional (QIB) investors have been measured as a proportion of the total shares subscribed by them to the total shares available to them for allocation

		Underpricing		Retail subscription		QIB subscription	
	Obs.	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Grade							
1	9	-9.01	26.99	2.58	2.3	1.63	1.99
2	25	6.76	44.54	5.5	7.52	6.9	13.5
3	45	12.11	28.3	8.45	16.8	28.3	48.56
4	18	10.71	39.8	10.19	14.24	49.84	49.79
Rating Agency							
CARE	40	11.75	45.94	6.43	10.71	14.54	26.96
CRISIL (S&P)	26	5.22	25.19	5.73	6.51	29.05	43.99
ICRA (Moody's)	24	12.63	44.66	12.36	22.11	38.28	60.5
FITCH	7	-7.04	19.98	4.76	6.68	33.96	35
Brickwork	3	-9.74	14.73	2.78	0.46	0.48	0.2
Overall	97	8.51	39.56	7.47	13.6	24.31	42.69

Table 6: Subscription patterns of institutional (QIB) and retail investors

The table shows the cumulative subscriptions of institutional and retail investors on the 97 graded IPOs. The subscription levels of the Retail and institutional (QIB) investors have been measured as a proportion of the total shares subscribed by them to the total shares available to them for allocation. A subscription level of less than one shows undersubscription.

	QIB subscription	Retail subscription
At the close of Day 1 of bookbuilding exercise	1.172	0.067
At the close of Day 2 of bookbuilding exercise	2.038	0.323
At the close of the penultimate day of bookbuilding exercise	5.623	1.404
At the close of last day of bookbuilding exercise	32.987	11.728

Table 7 - Effect of Certification signals on Underpricing

This table presents the effect of different certification signals using underpricing as the dependant variable on the full sample. Variables are defined in Table 1, while the correlation matrix is presented in Appendix A1. We do not have information on all the variables for 6 IPOs. This reduces our results to 295 IPOs. *** indicates significance at 1% level

	Model 1	Model 2	Model 3	Model 4
(Constant)	70.74(4.4)	66.72(3.96)	74.5(4.42)	15.59(1.04)
IBREP	7.79(1.39)			4.05(0.85)
VC_Presence		8.45(1.42)		2.14(0.43)
Grade 1			-29.97(-1.69)	-16.11(-1.11)
Grade 2			-9.68(-0.97)	-1.25(-0.15)
Grade 3			-3.58(-0.38)	-2.76(-0.37)
Grade 4			1.66(0.13)	-5.14(-0.49)
Ret_Subs				1.76(12.71***)
Log_AGE	2.25(0.59)	3.16(0.82)	1.58(0.41)	1.68(0.53)
Log_issuesize	-2.73(-4.3***)	-2.87(-4.54)	-2.36(-2.75***)	-1.19(-1.72*)
Eqt_RET	-0.35(-1.92*)	-0.25(-1.35)	-0.37(-2.0**)	-0.06(-0.39)
IPO_Momentum	-0.11(-1.0)	-0.15(-1.35)	-0.1(-0.78)	-0.01(-0.05)
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
N	295	295	295	295
Adj. R square	0.0810	0.0810	0.0770	0.4100

Table 8- Effect of Grading on subscription patterns of investors

This table indicates the effect of grading exercise on the subscription patterns of retail and institutional (QIB) investors. The subscription levels of the Retail and institutional (QIB) investors are dependant variables and have been measured as a proportion of the total shares subscribed by them to the total shares available to them for allocation. A subscription level of less than one shows undersubscription. Out of our full sample of 301 IPOs we do not have information for retail subscriptions in 2 IPOs and for QIB subscriptions in 3 IPOs. *** indicates significance at 1% level.

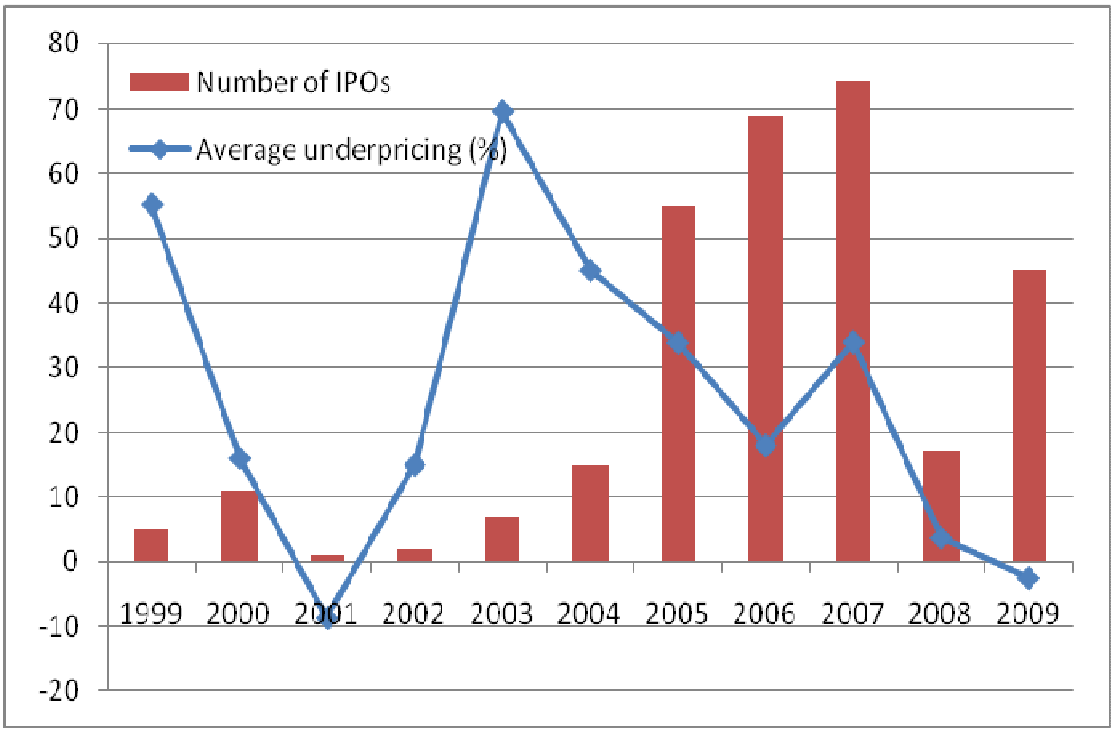
Dependent Variable Independent Variables	QIB_sub Coefficient	RET_sub Coefficient
(Constant)	16.57(1.77)	19.58(4.34)
IBREP	18.91(4.61***)	1.11(0.56)
Grade 1	-12.48(-0.99)	-6.27(-1.03)
Grade 2	-6.94(-0.8)	-1.68(-0.4)
Grade 3	6.44(0.99)	-0.22(-0.07)
Grade 4	26.12(2.84***)	2.39(0.54)
Log_AGE	-0.34(-0.12)	-0.12(-0.09)
Log_Issuesize	-0.15(-0.27)	-0.74(-2.75***)
N	298	299
Adj. R square	0.107	0.032

Table 9 - Relative effectiveness of IPO grading and book transparency signals

The table compares the relative effectiveness of the IPO grading and book transparency signals for 97 graded IPOs. The dependant variables are measured as a proportion of the total shares subscribed by retail investors to the total shares available to them for allocation (Ret_Sub) and as the last day buildup of the retail demand in terms of the number of shares subscribed by the retail investors on the last day of bookbuilding as a proportion of the total number of shares available to them for allocation (RET_buildup). Propensity_to_grading is an instrumental variable created using the Heckman procedure to control for a potential self-selection bias in the decision to be graded. Other variables have been defined in Table 1. *** indicates significance at 1% level

Dependent variable	Ret_Sub	RET_buildup
	Coefficient	Coefficient
Constant	34.5(4.86)	33.6(4.76)
QIB_penultimate	1.34(10.54)***	1.39(10.48)***
IBREP	0.03(0.01)	0.16(0.08)
Grade 2	-7.24(-1.04)	-2.43(-0.76)
Grade 4	-1.22(-0.11)	-1.16(-0.20)
Grade 4	2.42(0.24)	3.03(0.18)
Log_AGE	0.08(0.05)	0.12(0.09)
Log_issuesize	-3.24(-4.19)***	-3.88(-5.11)***
Propensity_to_grading	0.48(0.12)	0.77(0.31)
N	97	97
Adj. R square	0.580	0.546

Figure1: Variation in underpricing and number of IPOs over the years 1999-2010 (April)



Appendix A1: Pearson's Correlations of the variables used for the study

This table presents the correlation coefficients. Significant correlations (99% confidence level) are indicated in bold type.

	OP	*Underpricing*	*Eqt_RET*	*IBREP*	*RET_sub*	*QIB_sub*	*Size*	*VC*	*AGE*
Grade	**0.38**	0,15	0.23	**0.43**	0,16	**0.36**	0.28	0.21	0.25
OP	1	0	**0.28**	**0.29**	-0.01	**0.36**	**0.21**	0,1	-0.01
Underpricing		1	**-0.15**	0,1	**0.62**	**0.35**	-0.05	0,1	-0.01
Eqt_RET			1	0,06	-0.19	0,1	**0.33**	**-0.27**	0.11
IBREP				1	0,06	**0.3**	0.29	**0.2**	0,02
RET_sub					1	**0.49**	-0.1	0,11	0
QIB_sub						1	0.14	**0.2**	0,05
Sze							1	-0.09	0.11
VC								1	-0.14
AGE									1