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# An empirical study of executive option grants around initial public offerings

Xudong Fu[a,*], Qin Lian[b], Tian Tang[c,1], Qiming Wang[d,2]

[a] Department of Economics and Finance, Southern Illinois University Edwardsville, Edwardsville, IL 62026, United States
[b] School of Business Administration, Portland State University, PO Box 751, Portland, OR 97207, United States
[c] Department of Finance, University of Louisville, Louisville, KY 40292 , United States
[d] Department of Economics and Finance, Louisiana Tech University, Ruston, LA 71270, United States

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ABSTRACT

From insider trading filings, we compile a comprehensive sample of executive options granted to executives and board members around initial public offerings (IPOs) from 1996 to 2008 and find a spike of option grants around IPOs. Using this sample, we investigate the determinants of IPO options and their effects on IPO pricing and long term performance. We find that granting IPO options is correlated with insiders selling secondary shares and reducing ownership stake in the offering. This evidence suggests that IPO options are likely substitutes for insiders' diluted ownership due to IPOs. IPO options, however, are not a management self-serving mechanism as we find no significant relation between IPO options and underpricing, nor do they align executive interest with shareholders for better performance as we find that IPOs with IPO options do not have better long-run stock returns or operating performance than IPOs without IPO options.



## 1. Introduction

Stock options have become a significant part of executive compensation, representing over 40% of executive compensations at large seasoned firms (Frydman & Saks, 2010). This paper finds that newly public firms also issue large amount of executive options around their initial public offerings (IPOs). The value of these IPO options is non-trivial. For example, executive options granted at offer price in a [−1, +5] calendar day window around offer date on average have a total value of $4,093,204 based on Black–Scholes – 0.968% of the offer day market capitalization. These executive options are different too. While executive options are typically granted at the money when issued, 77.9% of the executive option grants around IPO date have an exercise price set at the offer price. Because IPOs are underpriced by more than 10% on average, these instant in-the-money IPO options effectively increase executives' wealth by the amount of underpricing on the IPO dates.

Several studies (Chahine & Goergen, 2011; Lowry and Murphy, 2007; Taranto, 2003) investigate the relation between IPO options granted at offer price and IPO underpricing using hand-collected IPO options information from IPO prospectus and post-IPO proxy statements. They find mixed results. Using insider trading filings from Thomson Financial Insider Filing Database (TFI hereafter), we compile a different and comprehensive sample on IPO options including 568 IPOs with IPO options out of 2723 IPOs from 1996 to 2008.

Over 12 months around IPO date, we find a spike of executive option grants in a [−1, +5] calendar day window around IPO date and the majority of these grants have an exercise price equal to the IPO price. Hence we focus on these IPO options (defined as option grants over days [−1, +5] around IPO date) and IPO options at offer price (defined as IPO options with an exercise price equal to offer price)[3] in this paper. Using this comprehensive sample of IPO

* Corresponding author. Tel.: +1 618 650 5195.
*E-mail addresses:* xfu@siue.edu (X. Fu), qin.lian.us@gmail.com (Q. Lian), lori.tang@louisville.edu (T. Tang), qwang@latech.edu (Q. Wang).
[1] Tel.: +1 502 852 4819.
[2] Tel.: +1 318 257 3863.

[3] The terms "IPO options at offer price" and "offer price IPO options" are interchangeable in this paper.

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options, we investigate the determinants of granting IPO options to study whether option grants around IPOs are substitute for stock ownership dilution. We also examine the effect of IPO option grants, especially those at offer price, on two essential aspects of IPO pricing, underpricing and offer price revision. Finally, we analyze whether IPO options serve as an incentive mechanism to align the interest of executives with that of shareholders by studying the effect of IPO options on IPO firms' long-run stock returns and operating performance.

We argue that IPO options could be a substitute for the diluted executive stock ownership due to offerings. In an IPO, insiders' equity holdings are often reduced because they sell their ownership shares in the offering as secondary shares and new primary shares have been sold to outside investors. Sanders (2001) suggests that an important assumption underlying the use of stock options is that it substitutes for executive stock ownership. The common research practice of aggregating stock option pay and stock ownership into a single measure of equity-based incentives (Agrawal & Mandelker, 1987; Jensen & Murphy, 1990; Mehran, 1995; and others) supports that view. Zajac and Westphal (1995) provide evidence that companies often state explicitly their assumption that stock option pay is an incentive mechanism when executive stock ownership is lacking. Zajac and Westphal (1994) find that option pay is greater when ownership levels are low.

We investigate the determinants of granting IPO options to test this substitute effect of IPO options usage, which has not been examined in previous studies on IPO options. We find that granting IPO options is correlated with insiders selling secondary shares and reducing ownership stake in the offering. The magnitude of the dilution of insider ownership is positively related to the granting of IPO options. This is consistent with the view that IPO options are used as substitute for the diluted ownership.

We revisit the effect of IPO option grants on IPO underpricing as prior research reaches no consensus. Lowry and Murphy (2007) hypothesize that one would expect a positive relation between IPO options and underpricing if managers can influence the offer price or the timing and terms of their stock options to benefit themselves.[4] However, they find no significant relation between IPO options and underpricing. In contrast, Taranto (2003) shows a positive relation with a focus on the tax benefits of IPO options; Chahine and Goergen (2011) find that underpricing increases with IPO options for firms with weak corporate governance. Those differences could arise from their sample differences. Those studies hand collect IPO options information from IPO prospectuses and proxy statements of the fiscal year of the IPOs. Their samples, rich in details on issuer characteristics such as corporate governance, tend to represent a small fraction of IPO population over a short time period and lack information on each individual IPO option grant.[5]

Using TFI insider trading filings, we are able to compile a comprehensive sample on IPO options for a broader range of executives and directors rather than only top executives reported in proxy statements.[6] Our IPO sample also covers all the time spans of previous studies – our final sample contains 2723 IPOs from 1996 to 2008 including 568 IPOs with IPO options. It is particularly important to include years after the passage of Sarbanes–Oxley Act (SOX) in 2002 because IPO underpricing has declined since SOX (Johnston & Madura, 2009) and SOX could also reduce management's rent-seeking behavior in the IPO process. All previous studies, except for Chahine and Goergen (2011) extending the sample period to 2004, do not include IPOs after 2002. Consistent with Lowry and Murphy (2007), we find that IPO underpricing is not related to the existence of IPO options, suggesting that managers do not use IPO options to benefit themselves at shareholders' expense.

We also add to the literature by examining whether the choice of exercise price for IPO options is related to underpricing, while previous studies using U.S. IPOs mainly focus on IPO options with offer price as exercise price. Several studies (Bebchuk & Fried, 2003, 2004; Bebchuk, Fried, & Walker, 2002) argue that the practice of setting lower option exercise prices to at-the-money (rather than out-of-the-money or with exercise prices indexed to market movements) reflects the influence of rent-seeking managers. Consistent with those studies, Rocholl (2007) shows that the choice of IPO options' strike prices is related to underpricing using IPOs from the Neuer Market in Germany. In contrast to Rocholl (2007), we find no significant difference in underpricing for U.S IPOs with IPO options at different exercise price. This result suggests the practice of corporate governance and the structure of IPO market in different countries influence the effect of option strike price on IPO pricing.

Finally, we examine the potential effect of IPO options on firms' long-run stock and operating performance to test whether IPO options can align shareholders' and management's incentives. Studies have proposed that stock options can align interests of CEOs and shareholders (Jensen & Meckling, 1976) and provide IPO firms with "upside potential" (Sanders, 2001) and may lead to higher firm performance (Hall & Liebman, 1998). Pukthuanthong, Roll, and Walker (2007) show that new public companies have better operating performance when managers receive a balanced combination of stock option grants and equity ownership. We find no significant relation between IPO options and IPO long-run stock performance. Furthermore, IPOs with IPO options have similar operating performance as IPOs without option grants in the multiple regression setting.

The reminder of this paper is organized as follows. Section 2 outlines our main hypotheses. Section 3 provides an overview of our sample selection and sample descriptive statistics. Section 4 studies the determinants of granting IPO options. Section 5 presents the empirical results of how IPO options are related to underpricing and price revision. Section 6 examines the potential effect of the existence of IPO options on IPO long-run stock returns and operating performance. We conclude in Section 7.

## 2. Hypotheses

### 2.1. Substitute of ownership dilution hypothesis

We hypothesize that IPO option grants compensate executives and insiders for their reduced ownership. After an IPO, insiders'

[4] Ljungqvist and Wilhelm (2003) show evidence of managerial influence over the offer price by showing that underpricing is positively related to the proportion of IPO shares offered to families and that underpricing is negatively related to the CEO's fraction of pre-IPO ownership for Internet firms. Booth and Chua (1996) hypothesize that underpricing could promote ownership dispersion, which in turn increases aftermarket liquidity of IPO stocks. CEOs receive stock-option grants shortly before the release of favorable quarterly earnings news (Yermack, 1997) and favorable voluntary news (Aboody & Kasznick, 2000). These findings suggest CEOs opportunistically time the option-grant date (Yermack, 1997) or disclosures around it (Aboody & Kasznick, 2000) to increase the value of their stock-option compensation.

[5] For example, Taranto (2003) ~897 IPOs including 309 IPOs with IPO options over the period 1997–1999; Lowry and Murphy (2007) ~874 IPOs including 288 IPOs with IPO options over the period 1996–2000; Chahine and Goergen (2011) ~435 IPOs including 104 IPOs with IPO options over the period 1997–2004.

[6] According to the SEC insider trading regulation, directors, officers, and principal stockholders (with a stake of 10% or more) have to report most changes in their beneficial ownership to the SEC. Stock option grants are subject to the same regime. Companies typically report compensation information for the five highest paid executives in their proxy statements.