



Moral hazard, asymmetric information and IPO lockups

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ABSTRACT

Moral hazard and asymmetric information have both been proposed as the motive behind the use of IPO lockup provisions, with each receiving empirical support in the literature. Rather than consider them to be mutually exclusive motivations, we hypothesize that each is dominant for a different set of firms. We provide novel empirical support for the underwriter certification hypothesis then use this hypothesis to categorize the firms in our sample. Firms that are certified by a reputable underwriter see a reduction in the severity of asymmetric information relative to other firms and therefore will be more likely to see moral hazard as the friction that motivates the use of the lockup provision. For those firms that are unable to obtain high reputation underwriter certification it is relatively more likely that asymmetric information is the motivation for the use of the lockup provision. Based on this separation of firms we introduce and provide empirical support for a novel set of hypotheses concerning the lockup period.

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1. Introduction

Recently, considerable attention has been paid to understanding the lockup provision embedded in the contract between an underwriter and a firm engaged in its initial public offering of equity. This literature examines motivations for the lockup provision, the determinants of the length of the lockup period, and the returns around lockup expiration. [Brav and Gompers \(2003\)](#) and [Brau et al. \(2005\)](#) both examine the motivation for the use of the lockup provision and the determinants of the lockup length and come to opposing conclusions with the former reporting support for the hypothesis that the lockup provision is used to control moral hazard and the latter reporting support for the hypothesis that lockups are used to control adverse selection. Here, we re-examine this issue and offer a resolution for the apparent conflict.

We posit that all firms suffer from both moral hazard and adverse selection problems. For some, moral hazard will be the dominant consideration in including the lockup provision in the IPO contract and in determining the lockup length, while asymmetric information will dominate for others. Based on this hypothesis and the idea that the signal produced by the choice of lockup period is not perfectly revealing we develop a set of testable predictions concerning the length of the lockup period. Underpricing, a central issue in the IPO literature, plays a major role in our analysis. Underpricing is a particularly useful diagnostic in this environment because it is affected by information asymmetry but not by post-issue commitment problems.² In such an environment, the empirical regularities seen in the full sample (for an “average” firm) do not accurately reflect the behavior of

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² IPO underpricing is caused by asymmetric information in several canonical models, e.g. [Benveniste and Spindt \(1989\)](#) and [Rock \(1986\)](#). We are not aware of a model in which underpricing is caused by ex-post commitment problems of insiders. Likewise, surveys such as [Jenkinson and Ljungqvist \(2001\)](#) and [Ibbotson et al. \(1994\)](#) do not entertain the notion that underpricing could be caused by ex-post managerial agency problems. Given that underpricing is resolved extremely rapidly, it is difficult to imagine how it could serve to control moral hazard.

firms for which asymmetric information is the dominant consideration in determining the lockup length nor the behavior of firms for which moral hazard is the dominant friction.

We separate our sample based on whether asymmetric information (the asymmetric information subsample) or moral hazard (the moral hazard subsample) is most likely to motivate the use and determine the length of the lockup. This sample bifurcation is the basis of our research design, and it leads to differential predictions on the co-movements of key variables. For example, consider a firm that suffers from both moral hazard and asymmetric information problems but for which moral hazard is the determinant of the lockup length. Because asymmetric information is present, the IPO is expected to exhibit underpricing. However, consider a hypothetical shock that increases the level of information asymmetry while leaving the severity of moral hazard unchanged. Such a shock will increase underpricing but not the lockup length for this firm. Conversely, consider a hypothetical shock increasing the severity of moral hazard while leaving information asymmetry unchanged. Such a shock increases the lockup length but not underpricing. In either case, lockup length and underpricing should not co-vary in a cross section of such firms.

Suppose instead that information asymmetry is the dominant consideration when choosing the lockup length. The effect of increasing the level of information asymmetry will be to increase both underpricing and the length of the lockup. A shock increasing the severity of the moral hazard problem, however, should not affect underpricing or the lockup length. We therefore predict that lockup length and underpricing exhibit a positive correlation in the information asymmetry sample.

When the lockup is chosen to control a moral hazard problem, it will be chosen recognizing the personal cost to insiders of a poorly diversified position. A given level of control of the managerial moral hazard problem can be achieved with a combination of post-IPO shares and a given lockup. In order to maintain a constant level of control of the moral hazard problem, at the margin, an increase in the post-IPO ownership by insiders allows a reduction in the length of the lockup. The post-IPO level of ownership will not, however, have a first order impact on the nature of the pre-IPO asymmetric information problem. Therefore the level of insider ownership and the length of the lockup should be negatively correlated in the cross section of moral hazard firms and uncorrelated in the sample of asymmetric information firms.

Our empirical tests require an identification strategy by which firms may be separated based on which of the frictions, moral hazard or asymmetric information, is likely to be the dominant consideration for the length of the lockup provision. One such candidate proxy is firm size. As a firm grows, its assets are likely to become more transparent and easier to value, which in turn should reduce the severity of information asymmetry (Beatty and Ritter (1986)). By contrast, firm size need not diminish agency problems. In particular, managerial misconduct and/or shirking occur at both large and small firms. Consequently we expect the relative magnitude of these two frictions to vary with firm size.

Our second proxy is the reputation of the underwriter. As argued by Beatty and Ritter (1986) (and supported empirically in Carter and Manaster (1990)) certification by a high reputation underwriter reduces the severity of information asymmetry. On the other hand, the analogous argument regarding agency problems is on much thinner ground. In particular, while investment banks can certify the value of an asset, they cannot certify (or prescribe) managers' future actions. In fact, without retained (and locked) equity as a costly signal, insiders themselves have difficulty making credible promises regarding their own actions. It is less plausible still that such a commitment could be delegated to a third party not involved in running the firm. Hence, ceteris paribus, underwriter certification should reduce the severity of information asymmetry relative to that of commitment problems. Therefore it should be more likely that the dominant concern for firms taken public by high reputation underwriters is moral hazard. Conversely, it should be more likely that asymmetric information is the determining friction for the lockup provision in firms taken public by low reputation underwriters.

We empirically verify the relation between both proxies and the level of asymmetric information by examining lockup expiration returns. Expiration returns allow us to consider the severity of asymmetric information at the precise moment when managers' trades reveal the quality of their information. More dispersion in post-lockup returns suggests more dispersion in private information.³ Our results are consistent with this view. Larger IPOs and those backed by reputable underwriters are associated with significantly smaller dispersion in returns at the expiration of the lockup.

Empirically, the bifurcated samples behave as hypothesized. In the asymmetric information subsamples (small firms and those taken public by low reputation underwriters) we find that lockup length co-varies positively with underpricing. While in the moral hazard subsamples lockup length is uncorrelated with underpricing. We also document the hypothesized different co-movements between the lockup length and post-IPO insider ownership across the two subsamples. The correlation between lockup length and insider ownership is negative in the moral hazard subsamples and zero in the asymmetric information subsamples.

Two recent papers are closely related to our analysis. Brav and Gompers (2003) examine three motives for the existence of the lockup provision, asymmetric information (signaling), moral hazard (commitment), and rent extraction on the part of issuers. They find no support for the rent extraction hypothesis and interpret their evidence as suggesting that lockups function primarily as a commitment device to alleviate moral hazard problems between managers and new shareholders. Arguing that the variables used by Brav and Gompers (2003) to measure moral hazard are more naturally interpreted as indicating the severity of an asymmetric information problem, Brau et al. (2005) (BLM) instead favor the hypothesis that lockups serve as a signal of quality.

³ See also Lowry, Officer and Schwert (2006), Wang and Yung (in press) and Yung et al. (2008) who also identify cross-sectional dispersion in returns with asymmetric information.

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