

## **Capital-structure changes around IPOs: A Comment**

In an influential paper, Baker and Wurgler (2002) (hereafter BW) suggest that corporate capital structures may largely reflect the accumulation of past attempts to time the equity market. The idea is that firms with a history of raising capital while enjoying high valuations tend to have relied more on equity. Not having strict leverage targets, these firms do not reverse those equity issuances by issuing debt in later years, leading to a near-permanent effect of equity market timing attempts on capital structure.

BW's identification of market timing opportunities based on firms' market-to-book ratios was criticized by a number of subsequent papers, one of which is Alti (2006). In that paper, I looked for a measure of market timing that does not directly relate to firm characteristics. My proposed measure was a hot/cold equity market indicator that reflects the aggregate equity issuance activity. The paper focused on equity capital raised in IPOs, as these are large transactions for which the perceived gains for the pre-IPO owners from correctly timing the market are likely to be big.<sup>1</sup> Using the hot/cold market indicator, Alti (2006) confirmed that issuers in hot markets raise more equity capital and reduce their leverage ratios more relative to their cold-market counterparts, but that the hot-market issuers quickly rebalance by issuing debt and increasing leverage in subsequent years.

Dudley and James (2018) (hereafter DJ) revisit the impact of IPO market timing on the IPO proceeds and the resulting change in leverage ratios. DJ raise three issues:

### **1. Treatment of Preferred Stock**

BW, Alti (2006), and several other papers in the literature utilize a leverage ratio definition that classifies preferred stock as book debt. These papers also exclude firm observations where book leverage measured this way falls outside the unit interval (i.e., firms with negative book equity). DJ argue that the joint effect of these two assumptions is to tilt the sample towards mature firms, as heavy use of preferred stock is more common among young start-ups. Classifying preferred stock as equity instead and lifting the unit interval restriction for firms with preferred stock significantly increases the sample size. The hot market effects in this broader sample that DJ construct are qualitatively and quantitatively similar to those in Alti (2006) (see Columns 1 and 3 in their Tables 4 and 5). Nevertheless, DJ make the point that the added firms, i.e., those with substantial amounts of pre-IPO preferred stock, behave differently and do not exhibit as strong hot-market effects as other IPO firms.

BW, Alti (2006), and others classify preferred stock as debt because preferred stock is a fixed obligation for the firm. As DJ point out, this assumption is appropriate for old-economy firms, which may have issued preferred stock to essentially replicate the role of subordinated debt, but not for new-

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<sup>1</sup> Indeed, about 50% of all equity issued in the BW sample were from IPO proceeds.

economy start-ups. In the latter type of firm, there is very little debt capacity and often no actual debt. Preferred stock is typically owned by VCs or other founding investors, to be converted into common stock in case of a successful exit such as an IPO, and having a liquidation preference over the entrepreneur's common equity in case of a failed exit. In other words, preferred stock is not a close substitute for debt financing for most start-up firms.

The different roles played by preferred stock for different types of firms may seem to raise difficult questions: Is preferred stock similar to debt or not? How should it be accounted for in computing leverage ratios? Quite naturally, simple statistics such as leverage ratios will not capture every aspect of financial policy.

Fortunately, these questions are fairly easy to address in the current context. At this point, it is useful to recall the main focus of BW, Alti (2006), and other related papers. These studies are not about the usefulness of a particular way of measuring leverage. Nor they claim to make statements that are applicable to all kinds of firms. Rather, the debate in these studies is centered on the capital structures of firms that consider both equity *and* debt as viable financing sources – that is, firms with *debt capacity*. BW's main hypothesis about market timing concerns the choice between debt and equity, so naturally, one would want to test that hypothesis on a sample of firms for which debt is a relevant funding alternative.

Start-up firms with large amounts of convertible preferred stock do not fit the BW hypothesis in any way. These firms have little use of actual debt to start with. It is also well known that new-economy start-ups remain highly averse to debt subsequent to their IPOs. Basically, the use of automatically-converting preferred stock in start-ups is more about entrepreneurial financial contracting, and less about arms' length financing choices. Given their lack of debt capacity, it makes perfect sense to exclude these firms in empirical analyses of the implications of market timing for leverage ratios. BW's assumptions, adopted by Alti (2006) and others, effectively achieve that outcome.<sup>2</sup>

## **2. IPOs in 2000s**

The IPO sample in Alti (2006) ends in 1999. DJ extend the IPO sample to 2009 and find weaker hot-market effects in the extended sample, especially in its second half. These findings reflect the fact that the IPO market in 2000s was dominated by the type of firm discussed in the previous section, i.e., new-economy start-ups with substantial use of convertible preferred stock. As argued above, since these firms exhibit little use of debt either before or after their IPOs, the question of how the IPO affects their leverage ratios is not particularly meaningful. However, DJ's finding about the IPO proceeds – that new-economy firms appear to be less sensitive to market conditions in choosing how much equity capital to raise – is an interesting one that merits further inquiry.

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<sup>2</sup> In hindsight, one could in fact consider even more restricted samples to facilitate more powerful tests of the BW hypothesis, e.g., by directly excluding firms with little prior use of debt.

### **3. Credit Market Conditions at the Time of the IPO**

The final departure in DJ from the analysis of Alti (2006) is to run a horse race between the hot/cold market indicator and a measure of credit market conditions (specifically the variable *default*, which is the spread between 30-year BBB and 30-year AAA bond yields). The default spread is significant in all specifications: in periods of low default spreads, IPO proceeds are higher, and the negative impact of the IPO on the issuer's leverage ratio is larger. In essence, low default spreads constitute another proxy for hot equity markets.

This part of DJ's analysis is somewhat disjoint from the rest of their paper and the issues discussed above. Their argument for relating the IPO decision to default spreads is also vague and theoretically undeveloped. Moreover, it is not clear what we can learn from a horse race between two market-wide or macro time series. The hot market indicator in Alti (2006) is intended to be a good proxy for identifying episodes in which firms perceive an exceptional opportunity to issue equity, based on the sharp swings in IPO volume. But, even a good proxy is rarely a perfect one. Measures of financial, business, and consumer confidence tend to be cyclical and highly correlated. In this regard, the default variable in DJ's analysis appears to be just another way of capturing the market conditions that the equity issuing firms face.

### **4. Conclusion**

Dudley and James make some useful observations. First, they bring attention to the increasing use of convertible preferred stock in public companies' pre-IPO capital structures. I thank the authors for giving me the opportunity to clarify the point that preferred stock is similar to subordinated debt for mature firms, but that this is not the case for start-ups. Second and more generally, the authors point to financial policy differences between old- and new-economy firms. Future work can shed more light on the sources and the consequences of these differences.

### **References:**

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