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## M & A synergies and trends in IPOs

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#### ABSTRACT

The recent decline in IPO activity can be explained by the small firms' increasing preference for being acquired rather than growing independently. This paper sheds light on this explanation by focusing on the nature of the firms facing this decision and their potential merger synergies. First, the above explanation should be particularly true for Young Innovative Companies (YICs), which are often superior to incumbents in originating innovations but face greater difficulties in bringing them to the market. Second, a firm's trade-off between being acquired and remaining independent strongly depends on the extent of the synergies arising from a potential merger, which are however difficult to assess ex-ante. Using a new, text-based measure of business similarity as a proxy for M & A synergies, we document that YICs facing the potential to develop larger synergies are the main responsible for the decline in IPOs. Compared to 15 years ago, the quarterly number of IPOs conducted by these firms has decreased by 20. At the same time, while M & A activity of other firms has declined, the number of acquisitions involving this particular type of firms has remained stable over time.

#### 1. Introduction

The number of firms going public has declined over the last decade. This trend has generated an intense debate, involving academics, policy-makers, and stock exchange officials. Recent regulatory interventions, such as the Sarbanes-Oxley (SOX) Act of 2002 in the U.S., that increased compliance costs imposed on public firms, are blamed responsible. Although meant to prevent the repeat of corporate scandals (e.g. Enron, WorldCom, Parmalat), the financial press and some academics (e.g., Doidge et al., 2013) believe that the overreaching effects of these changes reduced the attractiveness of being public. The unintended consequences of the change in regulation is that going and staying public has become more costly, due to additional compliance requirements (Iliev, 2010). Additionally, the lack of analyst coverage for smaller firm initial public offerings (IPOs), because of the limitation introduced by SOX in the US and SOX-like provisions elsewhere, increased their cost of equity capital (Jegadeesh and Kim, 2010), lowering their valuations (Akyol et al., 2014). The combination of these two effects gradually undermined the attractiveness of public markets. In this spirit, in April 2012, the US Congress passed the Jumpstart Our Business Startups (JOBS) Act, intended to revitalize the IPO market, especially for small firms. Despite a recent increase in the annual number of IPOs, quantified in 21 IPOs by Dambra et al. (2015), IPO activity is still far from the pre-SOX levels. There are, therefore, arguments and evidence consistent with a regulatory overreach explanation of the decrease in the number of IPOs.

We take a different perspective. We argue that, although increased regulatory requirements have risen the costs of listing in public exchanges, they might not be the primary motivation for the IPO drought. In line with Gao et al. (2013), we espouse a different explanation, based on the evidence that the decline in IPOs has been most pronounced among small firms. We start from the argument that the costs and benefits of growing as an independent firm versus selling out in a trade sale are important determinants of the decision to go public versus being acquired (Bayar and Chemmanur, 2011). The theory predicts that, as far as small firms are worth more as part of a larger organization that can realize economies of scale, their owners will find it value-maximizing to sell out rather than to go public and remain independent. We argue that the increasing importance of receiving an incumbent's support is one of the main reasons for firms'

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<sup>&</sup>lt;sup>1</sup> The SOX Act is the main compliance challenge cited by small companies that consider going public, as reported in a survey presented by the chair of the National Venture Capital Association at the US Treasury's Access to Capital Conference in 2011. The financial press often reports critical perceptions of this act (see, e.g., "The Demise of the IPO Market- and Ideas on How to Revive It" by J. Zweig in the Wall Street Journal, June 25, 2010, and "How to Revive Small-Cap IPOs" by W. David in the Wall Street Journal, October 27, 2011).

increasing preference towards being acquired rather than growing independently. Essentially, due to an ongoing change in the economy, small firms can create greater profits by becoming part of a larger organization rather than remaining independent. This underlying economic trend results in a steady decrease in the annual number of IPOs.

While conducting an IPO has been traditionally considered as a signal of success, recent studies conceptualize the acquisition by an established incumbent as a successful outcome for new entrants (Henkel et al., 2015). As an alternative to going public, firms can sell themselves via a trade sale. Empirical research on the IPO versus acquisition choice has clearly documented that the former achieve on average better valuations (e.g., Brau et al., 2003), mainly for liquidity and transparency reasons. Nevertheless, over the last decade, a private firm has been more likely to get acquired than to go public, and despite venture capitalists (VCs) have historically earned their biggest payoffs on portfolio companies that go public (Ball et al., 2011), most recent VC exits have been through trade sales (Gao et al., 2013). Bayar and Chemmanur (2011) explain this "valuation premium puzzle" (i.e. the choice of a trade sale despite its valuation discount) by emphasizing the role of product market. While a firm has to fend for itself after going public, an acquirer may provide support in the product market, increasing the firms' chances of succeeding against competitors.

The above discussed motives to merge are particularly relevant for Young Innovative Companies (YICs). This type of firms is often superior to incumbents in originating innovations (Granstrand and Sjölander, 1990), but faces greater difficulties in bringing them to the market because of liability of newness and smallness (Baum et al., 2000). Their competitive advantage is typically based on competencies related to a new product, process or service idea, that needs to be used in conjunction with other specialized assets in order to generate economic returns. For example, a tech startup with a useful new business-to-business technology might sell out to Oracle, which can boost sales via the certification of the Oracle brand name, and can add value by rapidly integrating the technology into their existing products. We therefore focus our attention on this particular category of firms, and investigate whether these firms are the main responsible for the decline in IPO activity.

Existing empirical analyses of IPOs versus acquisitions study private firms' exit decisions relative to firm characteristics, industry dynamics, or current market conditions. While measures of industry concentration, high-tech industry affiliation, "hotness" of the IPO market and firm size are positively related to the probability of an IPO, private companies in high market-to-book industries, financial services sectors, highly leveraged industries show a stronger likelihood of trade sales (Brau et al., 2003; Poulsen and Stegemoller, 2008; Chemmanur et al., 2012). However, since the benefits arising from a merger or an acquisition (M & A) can be evaluated only relative to a merger counterpart, our understanding about the IPO vs. M & A decision would suffer from a wide gap if we did not assess the firm-level benefits associated with the trade sale option. This paper moves a first step to fill this gap by factoring in the potential synergies from an M & A.

Prior studies have put considerable effort to assess merger synergies and their determinants. Both theoretical and empirical literatures suggest that one crucial factor is the degree of relatedness between firms. Starting from the property rights theory of Grossman and Hart (1986), according to which complementary assets should be bound together under common ownership to minimize frictions arising from contractual incompleteness, a number of papers have documented that synergies increase with the degree of relatedness between merging firms (e.g., Rhodes-Kropf and Robinson, 2008), also thanks to "economies of sameness" (Markides and Williamson, 1994; Puranam and Srikanth, 2007). Empirically, relatedness between firms has been addressed in two main domains, i.e. technology and business. Technology (or knowledge) relatedness relies on co-occurrence in classes of patent stocks (Cassiman et al., 2005), but its applicability is limited to

patent-intensive industries (Klein and Lien, 2009). Measures of business relatedness can instead be applied more broadly and are therefore of possible interest for our aims to estimate synergies in unrestricted samples. By relying on pre-determined definitions of industries, however, these measures fail to capture within-industry heterogeneity (firms might specialize or exhibit differing degrees of differentiation, making industries less homogeneous than standard classifications would suggest), changes in product and industry characteristics (firms enter and exit various industry spaces over time by introducing and removing products), and cross-industry relatedness (e.g. a petroleumrefining company (2-digit SIC: 29) would be classified as unrelated to a petroleum exploration company (2-digit SIC: 13)). Hoberg and Phillips (2010) overcome these limitations by proposing a text-based measure of business similarity. They analyze the content of business descriptions in firms' 10-Ks (i.e., annual reports) and build pairwise similarity scores between firms by computing a cosine similarity measure, that is the cosine of the angle between the two vectors that represent each firm's word usage. These scores are found to significantly outperform existing industry classifications when assessing the degree of relatedness between firm pairs (Hoberg and Phillips, 2014). Using this text-based approach, we propose a new, firm-specific measure of potential merger synergies based on text-based analysis of business similarity. This allows us to investigate the interaction between the two fundamental elements of our analysis, i.e. YICs' increasing importance of getting big fast and the role played by M & A synergies.

We first study the population of 8646 U.S. M & As between firms registered with the Securities and Exchange Commission (SEC) completed during the period 1996–2013 from Thomson Financial SDC. We measure text-based similarity among each firm pair, and empirically demonstrate that this measure proxies potential merger synergies better than alternative relatedness measures. Then, using time-series regression on the annual number of firms going public and getting acquired in the U.S. in the period 1996–2010, we show that the downward trend in IPO activity has been driven by YICs facing higher potential M & A synergies. This type of firms has more and more rarely issued public equity, consistent with an increased preference towards an acquisition relative to an IPO. We also document that, while M & A activity has decreased among other firms, this downward trend is totally absent among YICs, suggesting that while IPOs have lost attractiveness in their financing paradigm, M & As have not.

The remainder of this paper is organized as follows. Section 2 relates the paper to the existing literature and delineates its contribution relative to that literature. Section 3 describes our sample and methodology, including the discussion of the measure of M&A synergies. Section 4 presents our empirical tests and results. We conclude in Section 5.

### 2. Theory

## 2.1. Innovation and the market for corporate control

Large, established incumbents have traditionally been considered as the primary engine of innovation. The fundamental role accomplished by this type of firms is partly explained by their easier access to external capital and greater availability of internal funds, that alleviates liquidity constraints and therefore generates stronger incentives to conduct innovative activities (Cohen and Klepper, 1996). Larger incumbents can also better appropriate economic returns from investments in innovation thanks to their greater market power (Gilbert and David, 1982), and are in a better position to assess the applicability of innovations, thanks to their typically higher degree of diversification that allows them to benefit from internal knowledge spillovers (Garcia-Vega, 2006). Anecdotal evidence seems to be consistent with this view, as productivity growth has been mainly ascribed to big industry players (Baumol and Strom, 2007), the most notable examples of which are, among others, IBM, AT & T, General Motors, Exxon Mobil, Pfizer,

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