

Declining IPO volume: Cold issue market or structural change in the capital markets?

Preliminary thesis

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1.0 Introduction

Sharing a strong interest in Corporate Finance, initial public offerings caught our interest early in our studies. The dynamics behind initial public offerings have been a heavily researched topic, but several abnormalities are still unexplained or difficult to test. Since our hypothesis was not determined before we started the review of former research and theories on the topic, this process was used to frame our problem.

After exploring several research topics, we noticed a puzzling trend in the U.S. IPO market. There has been a significant drop in IPOs after 2000, even compared to levels before the IPO internet bubble. The yearly average of firms going public dropped from an average of 311 in 1980-2000 to 108 in 2001-2016 (Ritter, Gao and Zhu, 2012). The IPO volume has arguably been influenced by both the IPO bubble in 1999-2000 and financial crisis in 2008, but this cannot fully explain the long-term trend of declining IPO volume.

An important area of research, has been the cyclical nature of the IPO market. As we will describe in greater detail later, IPO issue volume and underpricing has varied greatly across time. However, in the last 16 years we have seen a stabilization around volumes that would historically be described as cold or normal markets. Intuitively, this has to be explained by a change in the access to or attractiveness of competing sources of capital, or changes in growth and the competitive landscape. To evaluate the former explanation, we will investigate change in the access to private debt and equity, and whether we can document any changes in the cost-benefit ratio of public capital. Growth prospects and the competitive landscape will be evaluated by investigating GDP growth, growth within

industries that typically seek public capital, M&A activity and changes in the composition of firms going public.

The volume trend described in this section has been observable in the U.S. We are excited to discover whether this trend holds in Europe. To determine what drives changes in the IPO market, we will conduct an empirical analysis in combination with a review of recent research in corporate finance.

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2.0 Literature review

In the following section we will discuss some relevant findings from our literature review. The discussion will focus on motivations to go public and the abnormalities that prevail in the IPO market.

2.1 Why do firms go public?

To determine what drives change in the IPO market, it is necessary to reflect over why companies go public in the first place. The following section will focus on possible advantages and disadvantages discussed by Pagano, Panetta and Zingales (2002). Most of the arguments in their discussion are considered either established truths or builds on research conducted by their peers.

2.1.1 Benefits of taking a company public

2.1.1.1 Overcoming borrowing constraints

Maybe the most obvious benefit from taking a company public, is the access to new sources of financing. Seeking funds from other sources than banks becomes attractive if a sufficient amount of funding is difficult to obtain due to high leverage, lack of collateral or high capital expenditures.

2.1.1.2 Liquidity

IPOs have long provided the initial investors with an exit option and liquidity. Listing a company simplifies the process of negotiating the price and finding a counterparty willing to purchase the company's shares, thus reducing the investor liquidity premium for holding the security. The magnitude of this effect is influenced by the trading volume of the security, as discussed in most market microstructure models. A publicly listed company also provides the initial owners with the option to diversify, either by divesting their shares or raising funds in the stock market to fund new investments done by the company.

2.1.1.3 Greater bargaining power with banks

For private companies, banks have privileged information about a firm's creditworthiness. By taking the company public, this information is readily available and can stimulate competition between banks. After studying the Italian IPO market, Pagano, Panetta and Zingales (2002) found that firms experienced a reduced cost of bank credit after going public. Their analysis concluded that this might be a consequence of better bargaining power and more accessible information about the prospects of the company.

2.1.1.4 Investor recognition

As argued by Morton (1987), individual investors effectively know about only a small fraction of the securities available. His model, which incorporates incomplete information and assumes that obtaining information is costly, shows that firms that are less well-known and have a smaller investor base offered higher returns. This indicates that higher investor recognition can increase the firm's market capitalization.

2.1.1.5 Monitoring

As argued by Pagano, Panetta and Zingales (2002), the stock market reduces agency issues by functioning as a managerial discipline device. Poor managerial decisions risk being penalized through hostile takeovers and negative stock price reactions. Observable stock prices and monitoring can be used to tailor managerial compensation plans that better align the objectives of the shareholders and the manager.

2.1.1.6 Windows of opportunity

Ritter (1991) argues that if markets are not perfectly efficient, resulting in potential mispricing, the initial owner would want to take the company public if comparable companies are overvalued in the stock market. Through his analysis, he finds that high initial returns are followed by a long-term underperformance. This indicates that companies are more likely to go public when similar companies are trading at multiples that are overestimating the earning potential of the stock within that industry.

2.1.2 Costs of taking a company public

2.1.2.1 Expenses and fees

Although going public offers several benefits, it is not without cost. Ritter (1987) estimated that the amount of fixed costs created by going public averages 250,000 USD and the variable costs amount to 7% of the IPO value. These costs arise from the direct fees paid to the underwriter and the registration fees at the time of the issue, in addition to long-term costs of auditing, stock exchange fees etc. Since a certain amount of these costs are fixed, smaller firms will be put at a disadvantage compared to large firms.

2.1.2.2 Asymmetric information

The issuers have more knowledge about the company's true value than the investors. Thus, risk-averse investors might not want to participate in the

transaction if they fear they will receive a lemon. Asymmetric information is a common explanation used for the prevalence of underwriting discounts. One class of models that incorporate asymmetric information is signalling theories. This will be discussed further later in this section.

2.1.2.3 Loss of confidentiality

Public companies are subject to stricter disclosure rules than private companies. Disclosing information about ongoing strategies and projects to the public can diminish the company's competitive advantage. Public companies may also experience closer supervision from tax authorities. Yosha (1995) argued that high-quality firms prefer bilateral debt funding to multilateral debt funding. By sharing information with more stakeholders, the firm risks that unauthorized third parties get access to sensitive information. He extended the argument to include private bilateral funding versus public equity funding.

2.2 Distinctive qualities of Initial Public offerings

When evaluating changes in the IPO market, it is useful to review certain characteristics that have typified IPOs over time. More specifically, we will discuss abnormalities like IPO underpricing, long-term performance, the cyclical nature of IPO volume and the role of the underwriter.

2.2.1 IPO Underpricing

A well-known phenomenon in the IPO market is the abnormally large first-day returns. This price increase indicates that IPOs are on average underpriced. A number of researchers have developed models that attempt to explain this abnormality, resulting in several contributions to the area. From 1980 to 2001, U.S. companies going public offered a first day return of 18.80 % on average (Ritter, Welch 2002). However, the returns varied greatly from year to year, as did the volume of IPOs with some years seeing fewer than 100 IPOs, and others seeing more than 400.

Lowry, Officer and Schwert (2010) conducted an extensive study of the variability of IPO short-term returns (measured on the 21st trading day). They found that short-term returns on IPOs between 1965-2005 was on average 22% with a standard deviation of 55%. Omitting the dot-com bubble (1998-2000) resulted in an average monthly return of 15% with a standard deviation of 34%. The volatility of returns fluctuates greatly over time, showing the highest volatility during hot markets.

2.2.2 Long-term performance of IPOs

The long-term performance of an IPO is typically measured by measuring the return obtained from buying shares at the closing price on the issuing day and holding the stock for a certain period. The return is evaluated against a relevant benchmark to capture the IPO performance compared to the rest of the market within the same period.

After studying 1,526 U.S. IPOs from 1975-84, Ritter (1991) found that IPOs significantly underperformed in the three years following the offering. The sample was compared to companies similar in size and within the same industries. Ritter points out three possible explanations for this phenomenon; (1) Risk mismeasurement, (2) Bad luck, (3) fads and overoptimism.

Ritter found that the firms with the highest initial return underperformed the most. This indicates that the long-term underperformance can be a consequence of first-day overreactions. The data showed that there were great variations in performance within different industries. This gives support for the “fads” explanation rather than mere bad luck.

2.2.3 Hot and cold issue markets

A long-known phenomenon is the cyclical nature of the IPO market. Hot issue markets are characterized by high first-day returns, high IPO volume, oversubscription of offerings and are sometimes concentrated around certain industries. Cold markets have a much lower volume, lower first-day returns and fewer instances of oversubscription (Helwege and Liang, 2004).

A heavily discussed topic is what kind of firms are attracted in the hot and cold issue markets. Allen and Faulhaber (1989) attempt to use signalling theory to explain the high underwriting discounts observable during hot issue markets. They assume that firm is better informed about the company’s prospects than outsiders, and thus will try to signal their quality to investors. They argue that quality companies offer higher discounts, since only quality firms will be able to recoup the cost of the discount after the offering.

However, as discussed by Ritter (1991) the firms that had the highest first-day returns performed the worst in the long-term, arguing that fads and overoptimism is a part of the explanation for hot issue markets. This view supports the notion that hot markets is rather companies taking advantage of windows of opportunity

(ibid), where a firm have an incentive to go public when they observe that comparable firms are overvalued in the IPO market.

A new set of models have gained popularity in the 2000's. Specifically, models that explain hot markets as a consequence of new technological innovations and positive productivity shocks. Stoughton, Wong and Zechner (2001) argue that underpricing is a result of an unexpectedly high product quality, rather than merely a consequence of signalling and predicts that this in turn should lead to a larger market share following the IPO. They find that the IPOs also had a positive price impact on rivalling companies, increasing the objective for companies in the same industry to go public, thus creating a hot market.

Helwege and Liang (2004) find that hot market IPOs are not more concentrated within particular industries than IPOs in cold markets. Both situations are dominated by the same narrow set of industries that dominated the 26-year period in their data set. Although this does not give support for the innovations and productivity shocks explanation, they suggest that new product innovations can spark hot markets, but the market can turn cold before all the candidates within that industry has gone public. However, the filing dates to the SEC do not support this view. They found that the firms going public in hot and cold markets seem to be of similar quality. In conclusion, they found weak support for the notion that one hot IPO market is driven by one hot industry, but rather that hot markets occur when a large number of industries are experiencing high growth and earnings potential.

2.2.4 The Role of the Underwriter

Prior to an IPO, the firm needs to choose one or multiple underwriters to assist in taking the company public. As discussed in Corwin and Schultz (2005), underwriters use comparable traded companies, as well as the market interest in the offering, to assign a price to the IPO. The valuations are likely to be similar across underwriters, however the estimate of the market interest is likely to differ due to different clienteles among underwriters. In addition to these components, underwriters also take the firm's growth prospects into account.

IPO underwriters are responsible to ensure that all regulatory requirements are met, and to absorb some of the risk associated with the offering. Syndicates of underwriters are often formed to manage large transactions, thereby increasing the

shared competency of the underwriting team, as well as sharing the risk associated with the issue.

According to Lowry, Officer and Schwert (2010) underwriters do not seek to minimize pricing errors, placing more effort into auxiliary services (market making or analyst coverage) since issuers value these services higher. This is especially true for small firms, as they do not automatically receive analyst coverage. Gao, Ritter and Zhu (2013) argue that the ecosystem of underwriters and analysts have declined. Analysts profit from generating transactions. Information about large firms tend to be more valuable to investors than information about small firms, as potential gain from the latter is lower than the former. They argue that decline in analysts focusing on small firms may have contributed to the decrease in small firm IPO's.

A key component in any IPO, is the prospectus developed by the underwriter. The prospectus is used as a marketing tool for the shares offered, and includes information about the company and industry, in addition to a valuation. The underwriter risks being liable for information provided in the prospectus. Tinic (1988) was one of the first to argue that underpricing serves as an insurance against litigation risk. If the IPO resulted in a positive first-day return, the investor has no legal claim for any misinformation, since there is no financial loss for which the investor can require compensation.

4.0 Research Methodology

4.1 Problem definition

This study aims to investigate the development in IPO volume after year 2000 and the likely drivers behind any changes. As we still have not retrieved the data and there is a lack of research on the recent development in IPO volume, it is somewhat premature to create a hypothesis. Previous research on IPO activity and general corporate finance has provided us with insight as to what drives change in the IPO markets. However, due to few and conflicting theories in the field, it is difficult to make presumptions about the strength of these relationships. The hypothesis will be set a posteriori, after a simple analysis of the data we obtain. The problem is defined as follows:

How has IPO issuance changed after 2000 in terms of volume and composition, and what has been the major drivers behind this change?

4.2 Research design

It is obviously not possible to manipulate or change the variables that drives changes in the IPO market. A non-experimental research design is therefore the most suitable. Since we have yet to define a hypothesis, we choose to conduct an exploratory study. This design is suitable when there are few established theories to be tested, or the strength of the relationship between the independent and dependent variables is uncertain. This approach minimizes the likelihood of rejecting a real relation, but is in turn subject to a higher probability of type II errors.

There is a chance that the changes observed in the U.S. IPO market have not occurred in the European IPO market. If that is the case, a comparative research design is more suitable. This allows us to compare the different markets and explore changes in variables that could have influenced the IPO volume.

4.3 Data

4.3.1 Data sample

As previously stated, our analysis will focus on the European IPO market. This broad focus is to ensure a sample of adequate size, as well as ensuring a somewhat homogeneous region in terms of economic growth. Data from Europe as a whole can be difficult to obtain, our focus will therefore be on Western Europe. To capture the major drivers behind changes in volume, our aim is to obtain a sample including IPOs with an offer price larger than 5 EUR (or equivalent) dating back to the 70s. We are investigating recent changes in the IPO market, and will therefore need a sample dating up until 2016, if obtainable. The problem at hand will be tested using panel data, since it requires both time and cross-sectional observations

4.3.2 Data collection

The process of comprising the relevant variables we need to test our hypothesis will be too time consuming for the scope of this paper. We will use secondary time series data from other renowned professors and reports by companies researching the field.

4.3.3 Quantitative data

To test our hypothesis we need a number of quantitative variables. We will initially look for data including the number of IPOs, the year the company was established, the year the company went public, amount of capital raised, sales or market capitalization, first-day return and offer price. As the analysis progresses, more variables may be included if relevant. We also need proxies for growth opportunities and access to other sources of capital. For the former, the initial plan is to use M&A activity, GDP growth and stock market indexes covering the markets that will be included in the data set. For the latter, growth in commercial debt and private equity is relevant. These are not perfect proxies and may be changed due to limitations in the data available and input from our advisor.

4.3.4 Qualitative data

Some qualitative variables are also relevant for the problem at hand. Specifically, data stating the industries the companies operate in, country of origin and the stock exchange where the shares are issued. Again, more variables may be included as our analysis progresses.

5.0 Strategy

Our most urgent objective is to find data to develop and test a hypothesis. We will primarily look for data collected by prominent researchers, data from public databases and reports made by private companies within selected industries (e.g. investment banks, auditing and consulting firms). This study requires financial and economic data from multiple sources, in addition to the actual IPO observations.

Once we have obtained the necessary data on European IPOs, we will perform a quick analysis to determine if the European IPO markets has experienced the same drop in volume as the U.S. IPO market. This information will be used to narrow down our research question and any sub problems that need to be addressed during our analysis.

After the initial analysis, we will address the research methodology in greater detail. We have already developed a quite broad understanding about the IPO market, but need to know how to handle proxy and data limitations that are likely to occur in this process. To build a deeper understanding of the methodology used within this field of study, we will consult previous research focusing on IPO volume fluctuations.

Once we are confident that we are aware of the strengths and limitations of our data, we will conduct an empirical analysis. Our data will be interpreted against existing theories within corporate finance.

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