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IPO underpricing and long run performance in the Former Soviet Union

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ABSTRACT

This paper investigates the level of underpricing and long run performance of IPOs of the Former Soviet Union (FSU) from the period 1996-2019. The research identifies key factors that influence long-term performance for the three-year period following the IPO date. The FSU exhibits lower levels of underperformance compared to its international counterparts. The long run performance of IPOs from the FSU aligns with the long run performance ranges observed in other markets. The study conducts a multiple linear regression analysis to examine the factors contributing to long run performance. Key independent variables include Underpricing, firm size, underwriter reputation, country of origin and financial metrics. Long-term performance is primarily influenced by factors such as underpricing levels, the reputation of the underwriter, and the country of origin, rather than being determined by traditional financial metrics.

Keywords: IPO Underpricing, Long run Performance, FSU Markets.

JEL codes: G15

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CHAPTER 1 Introduction

After the collapse of the Soviet Union and the transition to a market-based economy, private businesses began to establish themselves in the Former Soviet Union (FSU). In 1996, OSJC VimpelCom became the first Russian company publicly listed on the NYSE (NYSE, 2013). Since then, several other companies from the FSU have gone public via an Initial Public Offering (IPO). This not only allowed these companies to access much-needed capital to fund their growth and expansion plans, but also gave investors the opportunity to invest in the emerging markets of the region. However, IPOs in the FSU and other markets have experienced underpricing, which occurs when the offering price of shares is set lower than their market value. This results in a high demand for shares on the first day of trading, allowing investors to purchase shares at a lower price than their actual worth. As a result, firms could have charged a higher price and "left money on the table" (Lerner, Leamon & Hardymon, 2012). In addition to underpricing, IPOs also have been found to exhibit long-run underperformance, where the shares of the newly public companies do not perform as well as the market over an extended period. (Ritter, 1991). Understanding the factors that contribute to both underpricing and underperformance in the FSU IPO market is crucial for investors and policymakers seeking to improve the efficiency and stability of the market.

The issue of IPO underpricing has been a topic of interest in the finance and investment literature for many years. One of the most compelling models is this winner's curse model by Kevin Rock (1986). According to this model, uninformed investors typically win bids for overpriced IPOs because informed investors outbid them for underpriced IPOs. If new issues were typically not underpriced, underpriced investors would realize negative returns and pull out of the market. To avoid this, investment bankers intentionally underprice new issues, allowing uninformed investors to earn normal returns and thus continue their participation in the market. In other transitional economies like China, IPO underpricing was reported to be between 127–950% (Engelen & van Essen, 2010). There is a lack of literature for IPOs from the FSU, a unique study from Loughran, Ritter and Rydqvist (2013) looks at 64 Russian IPOs from 1999 to 2013. In this study they find an average underpricing of 3.3%. Russian IPOs were also shown to underperform in the long run compared to market indexes. Ritter (2023) reports a three-year underperformance of -18.7% of IPOs, for the period 1980 to 2021. Little research exists about the long-run underperformance in the FSU as it has not been widely covered in the literature.

Research on IPO underpricing in the FSU is limited, and little is known about the factors that contribute to underpricing in the region. Due to the small number of IPOs from the FSU, there is not a lot of literature about underpricing and on the long run performance in this region. The FSU has an economic climate that is substantially different from the western world. The transition from a centrally planned

economy to a market-based economy creates unique circumstances. These circumstances could provide different results in the IPO underpricing and long run performance in ways that diverge from established patterns in Western markets. Moreover, the FSU represents a significant portion of the global economy, a better understanding of the IPO market of the region could provide important implication for global financial markets. Understanding these factors is crucial for investors, as it can help them make more informed investment decisions and avoid potential financial losses. It can also provide valuable insights for policymakers, who may be interested in creating policies and regulations that support a healthy IPO market in the region. Thus, the aim of this thesis is not just to fill a research gap, but also to contribute to a more nuanced understanding of global IPO dynamics and inform better investment and policy decisions. Specifically, the research question of this thesis is: 'What degree of underpricing and underperformance exist in the FSU from 1996 to 2019, and what factors contribute to their long-run performance?'

Data on the IPO details, such as proceeds from the offering, amount of shares and location will be collected from Eikon and the Capital IQ database. I will focus on data starting in 1996, the first IPO in the FSU, until 2019. IPOs after 2019 are not included since it is too early to measure the long-run performance of these IPOs. Only IPOs launched on major stock exchanges are used in the data, smaller stock exchanges in the FSU are excluded as they do not have the same level of liquidity as other stock exchanges, which could skew results. The selected stock exchanges have higher trading volumes, and thus, provide a more accurate reflection of the performance of the IPOs.

The primary objective of this study is to analyse the degree of underpricing and underperformance in the FSU IPO market. The underpricing of an IPO will be operationalized as the percentage difference between the closing price on the first day of trading and the offering price The underperformance will be assessed using the Market Adjusted Buy and Hold Return (MAHBR) over a period of one, two and three years following the IPO, This follows the timeframe used by Ritter (2023). Data for the initial offering price and first-day closing prices will be obtained from the Refinitv Eikon database. The market-adjusted abnormal return (MAAR) will be computed. The returns of the indexes will be obtained from sources like Yahoo Finance or the website of the respective stock exchanges. The factors that explain the long run performance will be analysed using an OLS regression.

Prior to performing this study, it is difficult to hypothesize what the outcome will be. Given the unique context of the FSU market and the limited availability of previous literature, it is uncertain what the findings of this study will be. However various other empirical studies from could provide potential outcomes. For example, the winner's curse model by Kevin Rock (1986) suggests that underpricing is the rational strategy. Long-run underperformance has also been widely documented in the literature, furthermore, the historical and political situation of the FSU could provide unique outcomes to IPO

underpricing and long-run performance. For example, the level of institutional development and market oversight could have significant influence on IPOs in the region. Overall, it is expected that this study will provide valuable insights into the dynamics of IPO underpricing and long-term firm performance in the FSU market and may have important implications for market participants. However, given the limited availability of previous literature and the unique context of the FSU, the specific findings of this study are uncertain and will depend on the data and methodology used.

This study presents an analysis of underpricing levels and the long run performance of IPOs within the FSU from 1996 to 2019. This period marks significant economic and financial changes within the FSU, providing a unique and rich context for this investigation. In contrast to numerous international counterparts, the FSU displays a trend of lower underperformance levels. This indicates a distinctive IPO performance pattern that merits further examination. By employing multiple linear regression analysis, using underpricing levels, underwriter reputation, firm size, country of origin, and traditional financial metrics. Intriguingly, the findings reveal that underpricing levels, underwriter reputation, and the country of origin take precedence in determining long run performance over the traditionally emphasized financial metrics. Additionally, the long run performance of FSU IPOs tends to align with the ranges observed in other markets.

In the subsequent sections, the thesis will examine the degree of underpricing and long run performance and the factors that drive long run performance. Chapter two will lay the conceptual groundwork, dissecting theories and existing literature on IPO underpricing and long run performance. In Chapter three, the data used in the thesis will be described the data. Chapter four, will detail the research methodology, highlighting the statistical tools and techniques employed. Moving forward, Chapter 5, will present the findings of the analysis. It will discuss results and shortcomings of the study. Finally, Chapter 6, 'Conclusion', will synthesize the findings, drawing final conclusions about IPO underpricing and long run performance within the FSU.

CHAPTER 2 Theoretical Framework

2.1 Initial Public Offering

An Initial Public Offering (IPO) is a pivotal event in the life cycle of a company, signifying its transition from private ownership to public listing. During an IPO, a private company offers its shares to the public for the first time, allowing investors to become partial owners of the company and enabling it to raise capital from the public markets.

2.1.1 Motivation for an IPO

Companies decide to go public for various reasons, and understanding these motivations is essential for both academic researchers and market participants.

One of the primary reasons for companies to go public is the facilitation of easier access to capital, allowing firms to raise funds more effectively for expansions and investments. The ability to tap into a broader investor base and generate significant capital is often a compelling reason for companies to pursue an IPO. Lowry (2003) finds that capital needs have a significant effect on the decision of going public.

Zingales (1995) posits a compelling argument for the motivations behind IPOs, highlighting the opportunity they offer for original shareholders to exit the firm and realize their gains. According to his model, by going public, owners can capture the full value of their investment from a wider pool of investors, rather than relying on negotiations with a limited number of large investors. This implies that the IPO process provides a mechanism for owners to extract maximum value from their ownership stakes, thus offering a more efficient and effective route for achieving liquidity compared to alternative exit strategies.

In their study, Brau and Fawcett (2006) conducted a survey involving 336 CFOs to investigate the primary determinants influencing companies' decisions to go public. The findings revealed that creating a public fund for future M&A (Mergers and Acquisitions) emerged as the most significant factor driving firms to undertake an IPO. This suggests that companies perceive going public as a strategic avenue to access capital specifically earmarked for potential merger and acquisition activities. Surprisingly, the study also indicated that CFOs did not consider lowering the cost of capital as a crucial motivation for going public.

2.2 Underpricing

Equities which are sold through an IPO tend to be jump in price at the first day of trading, this phenomenon is called underpricing. Underpricing has interested economists for decades. Logue (1973) was one of the earliest to document that when firms go public, the stock price tends to increase significantly on the first day. Ritter (2022) found that firms in the United States experienced an underpricing averaging 17.6% since the 1960s (21.2% in the 1960, 7.1% in the 1970s, 6.9% in the 1980s, 21.1% in the 1990s and 23.2% in the period 2000-2020). This means that firms going through an   IPO   potentially   leave   a   lot   of   money   on   the   table. Table 1, compiled by Ritter (2023), presents a comprehensive compilation of research conducted on underpricing in numerous countries.

According to Ljungqvist (2007), there are four primary categories into which underpricing theories can be grouped: information asymmetry, institutional theories, ownership and control theories, and behavioural theories.

Table 1. Underpricing in European countries

Country	Source	Size	Period	Return
Austria	Aussenegg (2006)	106	1971-2018	6.20%
Belgium	Rogiers, Manigart & Ooghe (1993); Ritter (2023)	154	1984-2017	11.00%
Bulgaria	Ritter (2023)	9	2004-2007	36.50%
Cyprus	Gounopoulos, Nounis, and Stylianides (2008); Chandriotis (2013)	73	1997-2012	20.30%
Denmark	Jakobsen & Sorensen (2002); Ritter (2023)	190	1984-2021	7.60%
Finland	Keloharju (1993); Ritter (2023)	244	1971-2021	14.50%
France	Husson & Jacquillat (1990); Leleux & Muzyka (1993); Paliard & Belletante (1992); Derrien & Womack (2003); Chahine (2007); Vismara (2012); Ritter (2023)	904	1983-2021	9.40%
Germany	Ljungqvist (1997) ; Rocholl (2006); Ritter (2021)	840	1978-2020	21.80%
Greece	Nounis, Kazantzis & Thomas (1996); Thomadakis, Gounopoulos & Nounis (2012)	373	1976-2011	50.80%
Ireland	Ritter (2023)	38	1991-2013	21.60%
Italy	Arosio, Giudici & Paleari (2010); Cassia, Paleari & Redondi; Vismara (2013); Ritter (2018)	413	1985-2018	13.10%
Netherlands	Wessels (1989); Eijgenhuijsen & Buijs (1997); Jenkinson, Ljungqvist, & Wilhelm (2003); Ritter (2023)	245	1983-2021	12.00%
Norway	Emilsen, Pedersen & Saettem (1997) Liden (2004); Asokumar & Manuel (2021)	368	1984-2021	10.30%
Poland	Jelic & Briston (2003); Woloszyn (2014); Sieradzki (2023)	359	1991-2022	12.40%
Portugal	Almeida & Duque (2006); Ritter (2023)	33	1992-2017	11.50%
Russia	Loughran, Ritter and Rydqvist (2013)	64	1999-2013	3.30%
Spain	Ansotegui & Fabregat (1999); Alvarez Otera (2006); Dealogic (2022)	204	1986-2021	9.50%
Sweden	Rydqvist (1997); Schuster (2003); de Ridder (2022)	442	1980-2021	28.20%
Switzerland	Kunz, Drobetz, Kammermann & Walchli (2005); Dealogic (2022)	173	1983-2021	24.60%
United Kingdom	Elroy & Dimson (2009); Levis (1993); Doukas & Hoque (2015); Khurshed (2021)	5,309	1959-2020	15.70%

2.2.1 Information asymmetry

Information asymmetry-based models of underpricing propose that one party possesses superior knowledge about the equity compared to the other. Among these models, Rock's (1986) Winner's Curse model is widely recognized. It postulates the existence of two investor types: informed and uninformed investors. Informed investors selectively bid for attractively priced initial public offerings (IPOs), while uninformed investors place bids without discriminating among offerings. The information asymmetry between the two investor types of results in a "winner's curse" for uninformed investors. In the case of unattractive IPOs, uninformed investors receive all the shares they bid for, as informed investors refrain from participating. However, in attractive offerings, the informed investors partially displace the demand of uninformed investors. This can cause the average returns for uninformed investors to become negative. Uninformed investors are, however, assumed to act rationally, and when they encounter negative average returns, they are likely to exit the market. Recognizing the significance of uninformed investors' participation in the market, it is crucial to ensure that their average returns are non-negative. This requires underpricing all IPOs, thereby mitigating the average losses experienced by uninformed investors.

Beatty and Ritter (1986) argue in their paper that expected ex-ante uncertainty has a direct influence on the level of underpricing. An increase in the expected uncertainty, increases the level of underpricing of an IPO. Ex-ante uncertainty refers to the information asymmetry that exists pre-IPO. This arises when the firm's insiders, have information that has not yet been disclosed to the public. Potential investors then face a degree of uncertainty as they do not have access to the insider's information. This fuels the ex-ante uncertainty, thereby influencing investment decisions and the subsequent performance of the IPO.

2.2.2 Institutional theories

The propensity for legal action among American investors has spurred the development of legal insurance or strategies aimed at lawsuit avoidance. Logue (1973) and Ibbotson (1975) theorize that firms deliberately underprice their IPOs to prevent lawsuits from investors disappointed in the performance of the stock post-IPO. Due to the different legal systems in other countries this theory is not universally applicable. In the study looking at Swedish IPOs, Rydqvist (1997) finds a tax advantage in underpricing IPOs. In Sweden, income was taxed higher than capital gains, firms could decide to reduce the salaries of employees and give underpriced equity in return. Taranto (2003) conducted a study on US firms and obtained similar findings, supporting the notion that the results are consistent within the context of the United States. Taranto (2003) also uncovers a significant relationship between the level of underpricing

and the compensation structure of companies. The study reveals that companies are more prone to underpricing if their employees receive a higher proportion of their compensation in the form of stock options.

2.2.3 Ownership and control

Brennan and Franks (1997) demonstrate a causal relationship between underpricing and oversubscription of IPOs. This provides directors with the possibility to allocate shares to, avoiding the presence of large shareholders. Underpricing gives managers the ability to protect their own personal benefit by circumventing the influence and scrutiny of influential shareholders. As Shleifer and Vishny (1986) point out, the presence of small shareholders diminishes the level of external monitoring. These shareholders will not invest in the optimal amount of monitoring of the action and decisions of managers. This reduced monitoring capacity creates a situation where managers have greater leeway to pursue self-interested behaviour, as their actions are less likely to be closely scrutinized.

In contrast to the findings of Brennan and Franks (1997), Stoughton and Zechner (1998) suggest a different perspective. They argue that it is preferable to allocate shares to large shareholders, so that they can enhance their monitoring capabilities. Firms may intentionally underprice their shares to attract these large shareholders. The rationale behind this approach is that when management is optimally monitored, it can lead to a higher valuation of the company following the IPO. By allocating shares to large shareholders, who have a personal stake and the resources to actively monitor and oversee management decisions, the firm benefits from improved corporate governance and reduced agency conflicts.

2.2.4 Behavioural theories

When IPO shares are sold in sequential order, Welch (1992) demonstrates that late investors learn from the decision of early investors, creating "information cascades". In this phenomenon, late investors disregard their own information and instead rely on the decisions of earlier investors. This implies that early investors hold significant market power, as their decisions can influence the later demand for the shares. They can demand underpricing of the shares, initiating a positive cascade effect that increases demand in the later stages of the IPO process.

Ljungqvist, Nanda and Singh (2004) show that irrational or "sentiment" investors can create a bubble in the IPO price, where the price exceeds the fundamental value of the share. In their study they find that the optimal strategy for the issuer is to sell stocks to "regular" investors, with the intention of later reselling them to sentiment investors. Holding these IPO stocks is risky for the "regular" investors, so

to compensate for this risk the investors will demand that the stocks be underpriced. The issuer will still benefit from this trade as the offer price will exceed the fundamental value. Loughran and Ritter (2002) argue that issuers of an IPO underprice their stock because companies focus on the wealth effects after the listing.

2.3 Long run performance

Many studies have recorded the long run performance of IPOs in various countries. Jay Ritter's (1998) paper has compiled the results of these studies on the long-run performance of IPOs across different countries. The results highlight significant variations in long-term performance, as evidenced by the range of results obtained. For instance, Ritter's findings reveal that Brazil experienced a significant long-run underperformance of -47%, while Korea demonstrated a modest positive performance of 2%. These results are presented in Table 2.

Table 2. International long run performance

Country	Author(s)	Number of IPOs	Issuing years	Total abnormal return
Australia	Lee, Taylor & Walter (1996)	266	1976-1989	-46.50%
Austria	Aussenegg (2006)	57	1965-1993	-27.30%
Brazil	Aggarwal, Leal & Hernandez (1993)	62	1980-1990	-47.00%
Canada	Jog and Srivistava (1993)	216	1972-1993	-17.90%
Chile	Aggarwal, Leal & Hernandez (1993)	28	1982-1990	-23.70%
Finland	Keloharju (1993)	79	1984-1989	-21.10%
Germany	Ljungqvist (1993)	145	1970-1990	-12.10%
Japan	Cai & Wei (1997)	172	1971-1990	-27.00%
Korea	Kim, Krinsky & Lee (1994)	99	1985-1988	2.00%
Singapore	Hin & Mahmood (1993)	45	1976-1984	-9.20%
Sweden	Loughran, Ritter & Rydqvist (1994)	162	1980-1990	1.20%
U.K.	Levis (1991)	712	1980-1988	-8.10%
U.S.	Ritter (2023)	9,089	1980-2021	-18.70%

Miller (1977) posited that the initial trading price of an IPO is influenced by the most optimistic investors in the market. However, as time progresses and more information becomes available on the stock, the disparity of opinions among investors gradually diminishes. This reduction in divergence leads to a necessary downward adjustment in the price of the IPO. Consequently, this downward price adjustment is often associated with the observed poorer long-run performance of IPOs.

Carter, Dark, and Singh (1998) conducted a study examining the performance of IPOs over a three-year period, specifically focusing on the influence of underwriters' prestige. The study found that IPOs conducted through more prestigious underwriters exhibit relatively smaller underperformance compared to those managed by less reputable underwriters.

In a study conducted by Brav and Gompers (1997), it was revealed that non-venture capital-backed firms experience a greater magnitude of underperformance over a five-year holding period compared to venture capital-backed firms. This significant finding sheds light on the differential impact of venture

capital involvement on the long-term performance of IPOs. By examining the performance of IPOs over an extended timeframe, Brav and Gompers' (1997) research underscores the importance of considering the influence of venture capital in shaping the post-IPO trajectory of firms

2.4 Long run performance and underpricing

A small part of the IPO research literature has been devoted to the relationship between underpricing and the long run performance of an IPO.

Loughran & Ritter (2002) provide the "leaning against the wind" hypothesis. Investors who are eager to participate in the IPO may bid up the stock price beyond its fundamental value, resulting in a substantial increase in the initial day returns (underpricing). This high level of underpricing can attract speculative trading and lead to even more price volatility in the secondary market. The hypothesis suggests that IPOs' offer prices are deliberately set below the estimated market value to counteract these speculative price movements. By intentionally underpricing the IPO, they aim to attract more long-term investors and provide some degree of price stability in the secondary market. This strategy can help prevent excessive short-term price fluctuations and provide a smoother transition to the stock's equilibrium value. Ritter (1991) and Krigman, Shaw and Womack (1999) provide evidence for this theory.

2.5 Hypotheses

Drawing on the established IPO literature, this thesis puts forward several hypotheses. These hypotheses are designed to explore the details of IPO underpricing and the long run performance of these IPOs:

1. FSU underpricing is smaller than non-FSU underpricing.

This hypothesis stems from the expectation that owners of firms from the FSU will price their IPOs closer to the equilibrium value, perhaps to "leave less money on the table" during the IPO. In other words, firm owners might aim to capture more of the potential gains from the IPO for the existing shareholders, rather than allowing these gains to go to new shareholders through underpricing.

2. FSU long term underperformance is smaller than non-FSU long term underperformance.

The IPOs from the FSU are expected to perform better than non-FSU IPOs in the long run. In theory, emerging markets, like those within the FSU, generally provide higher returns than developed economies. The potential for greater returns is often seen as a compensation for the extra risks typically associated with emerging markets.

3. The main driver of FSU long run underperformance is the degree of underpricing

This hypothesis suggests a direct correlation between the degree of IPO underpricing and the long run performance of stocks. The idea is that the initial pricing strategy employed during the IPO process, plays an important role in determining the stock's performance in the long run

4. Underpricing has a negative relationship with long run performance in the FSU.

This hypothesis suggest that a higher degree of underpricing could lead to a worse long run performance of the stock. This aligns with the established theory which posit a negative correlation between underpricing and long run performance.

CHAPTER 3 Data

This sample consists of 95 IPOs from Russian, Armenian, Azerbaijani, Belarusian, Estonian, Georgian, Kazakhstani, Kyrgyzstani, Latvian, Lithuanian, Moldovan, Tajikistani, Turkmen, Ukrainian and Uzbekistani companies during the period 1996 until 2019. Data after 2019 has been removed from the sample as it is not possible to compute the long run performance for these IPOs.

The primary source of data for the IPOs was the Refinitiv Eikon database, which provided comprehensive information on the initial public offerings of the aforementioned companies. The Eikon database is a widely recognized and trusted source for IPO data, offering detailed insights into the companies' IPO processes, including deal size, date of offering, country of origin and underwriters. To supplement the IPO data, additional information was gathered from the Zephyr database.

3.1 Data Collection Methodology

The data was obtained from two primary sources described above, Zephyr and Refinitiv Eikon. To focus specifically on initial public offerings (IPOs) originating from firms within the FSU, a filtering process was applied. Only IPOs from FSU firms were included in the dataset. The analysis of long-run performance was limited to IPOs that occurred prior to December 31, 2019.

To ensure consistency and comparability of the collected data, the Reuters Identification Code (RIC) was collected using the Eikon API, employing Python. The RIC serves as a unique identifier that enabled retrieval of financial information from the Refinitiv Eikon database. By utilizing the RICs, Refinitiv Eikon could accurately identify the companies within the dataset and extract financial variables, including total returns for one, two, and three-year periods. This was made possible through the formula builder feature.

3.2 Data Cleaning

Firms that had missing information on crucial variables were identified and removed from the dataset. This step was necessary to ensure the completeness and accuracy of the data. Before removing the firms, other databases were employed to fill in some data. IPOs that were conducted after the 2019 have also been removed from the dataset as it is not possible to record the long run performance for these IPOs. Outliers, if present, were carefully examined and assessed for their impact on the analysis. Outliers that were determined to be genuine data points were retained in the dataset, as they can provide valuable insights into extreme cases. However, if outliers were identified as errors or inconsistencies, they were corrected or removed to prevent their influence on the analysis.

3.3 Data Integration

The datasets of Zephyr and Refinitiv Eikon were combined using the ticker symbol assigned to each company. The use of ticker symbol provides a global standard for identifying securities. Through these ticker symbols, it is possible to merge the two datasets. This merging process allowed for a comprehensive and unified dataset. The combined dataset provides key IPO characteristics, such as IPO price, first day closing price, IPO date, Underwriter, stock exchange of the listing, underpricing information, and long run performance metrics.

3.4 Variable description

Underpricing is anticipated to be negatively correlated with the long-term performance of a stock (Ritter, 1991, Loughran and Ritter, 1995). The existing literature reveals that IPOs that are significantly underpriced tend to exhibit poor performance in the long run. This finding suggests that investors who initially hold overly optimistic expectations about the firm's prospects gradually adjust their outlook over time, leading to lower stock returns.

Size of the firm, Levis (1993) concludes that the size of the firm has a positive influence on the long run performance. Proceeds from the IPO is used as a proxy for size. Proceeds of the IPO is the number of shares issued times the issue price.

Real estate, the data shows that the majority of IPOs from the FSU were in period 2005-2007. The subsequent period of 2006-2010, which coincided with the real estate crisis, is considered the long run performance phase for these firms. This could cause firms from the real estate sector to perform worse than other companies during this period, especially in the long run. The expectation is then that the Real Estate coefficient will have a negative effect on long run performance.

Country dummies, the dummies are included in the analysis to test whether a difference exist between Russian IPOs and other IPOs from other countries in the sample.

Underwriter, Underwriter reputation are assigned based on the study by Ritter (2004). The rating is between one and nine, with one being the lowest rating and nine being the highest rating. IPOs from prestigious underwriter are expected to perform better in the long run, so the correlation between Underwriter rating and long run performance is anticipated to be positive.

Ebitda, the Earnings before Interest, Taxes, Depreciation and Amortization is used as a proxy for profitability of the firm in the regression. Ebitda is expected to have a positive coefficient with long run performance as firms that are more profitable are expected to perform better in the long run.

Leverage ratio, a variable for leverage is incorporated in the regression, this is calculated by dividing the debt by the assets. Eckbo and Norli (2005) show that a lower leverage ratio leads to a worse long run performance. On the other hand, Chen and Kao (2008) argues that leverage is positively correlated with long run performance. The sign for the leverage coefficient is therefore hard to predict.

Book to market value, Fama and French (1992) argued for the inclusion of a control variable to account for differences between value and growth stocks. In this study, the price-to-book ratio was utilized as a proxy for such differences. The price-to-book ratio, calculated by dividing the market value of equity at the IPO issuance by the book value of common equity, is expected to have a negative coefficient. This expectation aligns with earlier findings (Ritter & Welch, 2002), indicating that a higher price-to-book ratio is associated with growth stocks, which tend to perform worse than value stocks (characterized by a low price-to-book ratio) in the long run.

3.5 Descriptive statistics

Figure 1 shows the distribution of the IPOs by country in the sample. In the sample Russian IPOs are 61% of the sample, IPOs from the Baltic represent 23%, Kazakhstani and Ukrainian IPOs both equally represent 8% of the sample. The Russian economy is the largest in the FSU, so it is no surprise that Russian IPOs represent the largest share.

Figure 1. Distribution of IPO by country

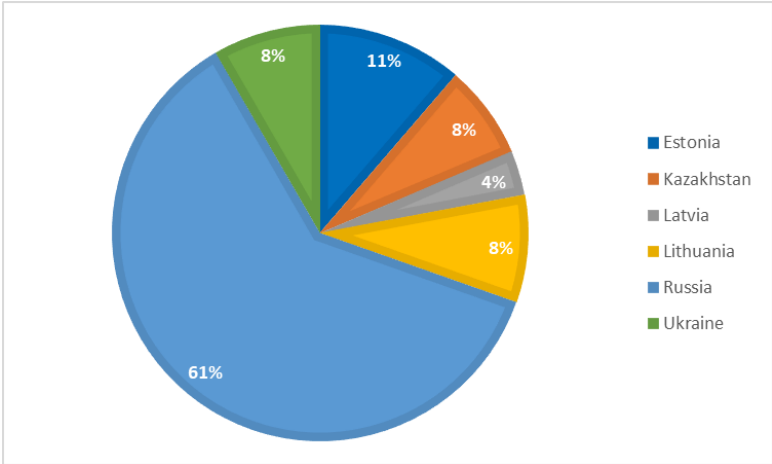Figure 2 and Figure 3 illustrate that Russian IPOs carry an even larger share in the sample if the proceeds are considered. This prominence can be attributed to the notably larger average size of IPOs originating from Russia when compared to those of firms from Kazakhstan and Ukraine. The data clearly highlights the substantial contribution of Russian IPOs to the overall proceeds, underscoring their dominant presence in the sample.

Figure 2. Distribution of proceeds by country
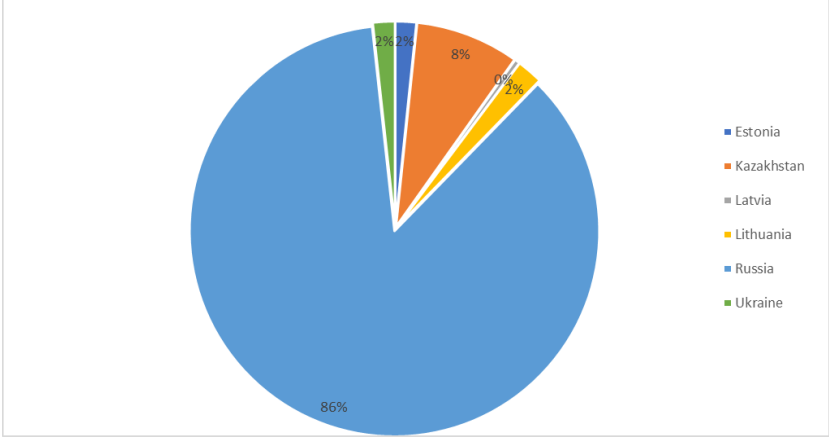
Figure 3. Average size of IPO by country in Millions
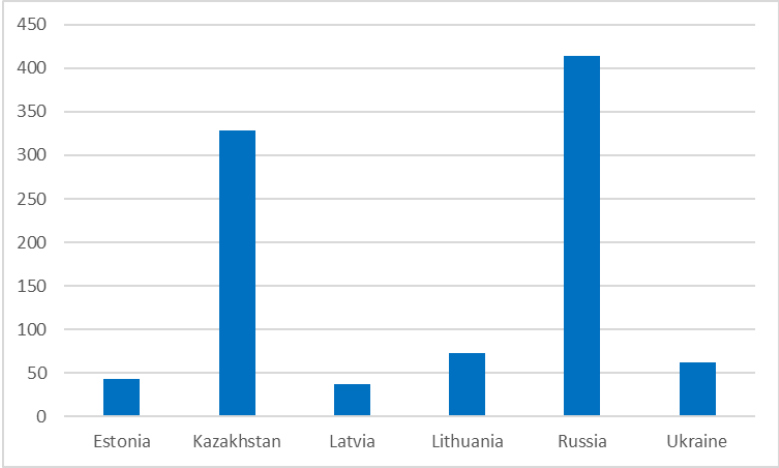
Figure 4 demonstrates that IPO activity in the FSU remained relatively insignificant before 2004. However, a remarkable shift occurred starting from 2004, leading to a substantial increase in the number of IPOs until 2008. Notably, 2007 emerged as the peak year for IPOs.

Nevertheless, the global financial crisis in had a impact on the IPO landscape in the FSU. The crisis led to a notable decrease in IPOs, creating a challenging environment for companies seeking to go public. The aftermath of the crisis lingered, with IPO activity in the FSU never reaching the peak of 2007.

Figure 4. Distribution of IPOs by year
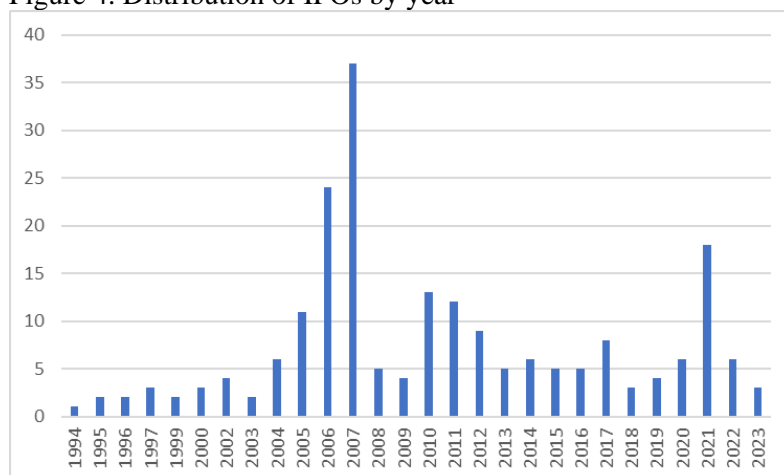
Table 3 shows the descriptive statistics for the sample that are used in the regression analyses. Underpricing and long run performance are compared to multiple benchmarks. Underperformance is measured for one, two and three years. Table 3 also shows the shape of the distribution using the skewness and kurtosis. Skewness refers to the degree of asymmetry of the distribution. A positive skewness indicates a distribution with a long tail to the right, while a negative skewness value indicates a distribution with a long tail to the left. A skewness value close to zero means that the distribution is similar to a normal distribution. Kurtosis, on the other hand, shows the peakness or flatness of a distribution. A positive kurtosis indicates a relatively high peak, and a negative kurtosis signifies a distribution that is flatter compared to a normal distribution.

Table 3. Descriptive Statistics of the sample.

Variables	Obs.	Mean	Std.Dev	Min	Max	Median	Skewness	Kurtosis
				S&P 500 Index				
Underpricing	95	0.0246	0.0713	-0.2664	0.2406	-0.013	0.076	5.938***
Long run performance (1 year)	95	-0.0954	0.3920	-1.1909	1.4093	-0.010	0.677**	4.980**
Long run performance (2 years)	95	-0.1466	0.6328	-2.1184	1.8221	-0.190	0.145	4.658
Long run performance (3 years)	95	-0.1960	0.7951	-1.7349	2.9175	-0.267	1,117***	5.527***
				National Stock Index				
Underpricing	95	0.0248	0.0790	-0.2617	0.2463	0.008	0.040	4.689**
Long run performance (1 year)	95	-0.0056	0.5275	-1.1997	2.2407	-0.07	0.918***	5.742**
Long run performance (2 years)	95	-0.0784	0.7553	-2.11	1.8878	-0.126	0.160	3.265
Long run performance (3 years)	95	-0.0288	0.9366	-1.7912	2.9662	-0.156	1.028***	4.505
				Index of the stock exchange of the listing				
Underpricing	95	0.0289	0.08	-0.2317	0.2893	0.012	0.029	4.513**
Long run performance (1 year)	95	-0.1530	0.5364	-2.4735	1.4805	-0.150	-1.030***	7.384***
Long run performance (2 years)	95	-0.2448	0.8073	-3.5943	1.6120	-0.212	-1.395***	7.914***
Long run performance (3 years)	95	-0.2609	1.0784	-4.3265	2.9662	-0.309	-0.804***	7.425***
Kazakhstan	95	0.0632	0.2341	0	1	0	3.592***	13.901***
Ukraine	95	0.1263	0.3340	0	1	0	2.249***	6.061***
Baltic	95	0.1474	0.3564	0	1	0	1.990***	4.959***
Real_Estae	95	0.0632	0.2445	0	1	0	3.591***	13.901***
Underwriter	95	6.7536	2.3878	1.001	9.001	8.001	-0.909***	2.661
Bookvalue	36	199.7463	1164.916	0.0007	6994.811	1.835	5.746***	34.023***
Size	95	413.4435	1071.382	0.0020	8423.861	147.399	5.946***	41.173***
Leverage	58	133.2781	573.2505	0.949	4373.874	31.407	7.165***	53.463***
Ebitda	60	496.4367	1012.179	-178.2528	6205.085	120.987	3.642***	18.765***

*p < .10. **p < .05. ***p < .01.

Additionally, the table provides insights into the characteristics of the IPO companies. For instance, the mean values for Kazakhstan, Ukraine, and Baltic regions reveal the proportion of IPOs originating from each country. It is evident that Ukraine has the highest average proportion of IPOs (approximately 0.126), followed by Baltic (approximately 0.147), Kazakhstan (approximately 0.063). and the rest of the IPOs originate from Russia.

The descriptive statistics also include financial metrics of the IPO firms, such as Bookvalue, Size, Leverage, and EBITDA. Bookvalue is the book-to-market value at the time of the IPO. Size is the gross proceeds of the IPO, leverage is the leverage ratio at the time of the IPO and EBITDA is the Earnings before Interest, Taxes, Depreciation and Amortization at the time of the IPO.

The three-year long run performance for each of the benchmarks exhibits significant skewness. Specifically, both the National and S&P 500 benchmarks demonstrate positive skewness, suggesting a distribution with a long right tail. Conversely, the benchmark for the Stock Exchange shows a negative skewness, indicating a distribution with a long-left tail.

Underpricing does not show a statistically significant skewness for all three benchmarks. This suggests that the distribution of the underpricing variables is relatively symmetrical. However, underpricing does show a positive kurtosis for all three benchmarks, indicating that the distribution has a high peak.

Interestingly, the underwriter variable shows a negative skewness indicating a distribution with a long tail to the left. This could suggest that there is a significant presence of smaller underwriters or underwriters with a lower rank in the sample.

Overall, the distribution of several of the datapoints deviate from normality, as shown by the skewness and kurtosis. These deviations from normality will be kept in mind when interpreting the results of any statistical analysis using these data. The variables which have been found to be non-normally distributed and do not have negative values will have a logarithmic transformation.

The limited availability of crucial information resulted in the removal of several data points from the dataset, adversely impacting the study's statistical analysis. Consequently, the reduced sample size resulting from these exclusions could potentially undermine the study's findings and their generalizability. The relatively brief time frame for IPOs in the Former Soviet Union (FSU), starting in the nineties, limits the available data for analysis. This limitation restricts the ability to capture long-term trends, cyclical patterns, and the full spectrum of market dynamics that may influence IPO underpricing and long-run performance. The shorter period may also hinder the ability to conduct robust

comparative analyses with more established markets, such as the United States, which have a longer history of IPOs.

CHAPTER 4 Method

4.1 Formulas of underpricing and long run performance

Consistent with established literature (Ritter, 1991) returns of IPOs on the initial day trading are computed using a two-step approach. The following formulas are used to calculate the underpricing.

$$R_{i,1} = \frac{P_{i,1} - P_{i,0}}{P_{i,1}}$$

Where $R_{i,1}$ the initial day return, $P_{i,1}$ is the closing price of the first day and $P_{i,0}$ is the offer price of the IPO.

Returns of the benchmark is calculated based on the return of the first day of the stock.

$$R_{m,1} = \frac{I_{m,1} - I_{m0}}{I_{m,1}}$$

$R_{m,1}$ is the return of the index of the first day of trading of the IPO, $I_{m,1}$ is the closing price of the index and $I_{m,0}$ is the opening price of the index.

The Market-Adjusted Abnormal Return (MAAR) is calculated as the difference between the stock's initial return and the return of the benchmark. This metric quantifies the relative performance of the stock compared to the broader market. By comparing the stock's return with that of the benchmark, the MAAR provides insight into the stock's abnormal returns, indicating whether it outperforms or underperforms the overall market.

$$MAAR_i = R_i - R_m$$

To determine underpricing, the mean MAAR is computed. The significance of the underpricing is then assessed using a t-test, comparing the stock's return on the first day of trading to that of the corresponding benchmark.

Long run performance is computed in a comparable way to the initial returns of a stock. In line with Ritter (1991), the methodology employed to compute the long-run returns consisted of calculating the market adjusted buy and hold return (MAHBR)

$$MABHR_i = \sum \left[\ln \left(\frac{P_{i,t+k}}{P_{i,t}} \right) - \ln \left(\frac{I_{m,t+k}}{I_{m,t}} \right) \right]$$

The variables in the equation are defined as follows: $P_{i,t+k \text{ represents}}$ the price of the stock on day "t" with a time horizon of "k" years, and $I_{m,t+k}$ represents the price of the benchmark index over the same period. The parameter "t" represents the starting day of trading, while "k" denotes the duration in years, which can be either one, two, or three years.

A t-test was utilized to evaluate the statistical significance of the disparity in means between the stock returns and their corresponding benchmark index returns during the specified period.

Conrad & Kaul (1993) demonstrate that the buy and hold returns are preferred over the Cumulative Average Abnormal Returns (CAAR) due to the latter's susceptibility to bias stemming from measurement errors. In contrast, the MAHBR does not suffer from this bias and is a more reliable measurement.

4.2 Benchmarks

Companies from the FSU do their IPOs on foreign exchanges, this makes it difficult to choose what benchmark to use to compare the stocks to. The FSU also consists of multiple countries which makes using one universal benchmark all the more complicated. Therefore, multiple benchmarks will be used to compare the IPOs to:

1. Index of the S&P 500
2. Index of stock exchange of the listing
3. National stock exchange index

The S&P 500 encompasses the largest and most significant firms traded in the United States. This comparison is used as a reference point for IPOs from the FSU with the established US market. The fact that the S&P 500's encompasses various sectors in the global financial landscape will make it an appropriate estimation for the long run performance of the FSU IPOs.

The stock exchange index of the listing serves as a benchmark to compare IPO performance with other companies on the same stock exchange. This enables investors active in a specific market to assess their performance relative to stocks within that market. By incorporating this benchmark, the research allows for a direct comparison of IPOs against established companies.

The National Stock Exchange index, specific to each country, is used to compare the firm to the market performance and economic condition of their respective county. Understanding how IPOs perform in

relation to the national stock exchange index provides valuable insights into their ability to capitalize on domestic market dynamics and adapt to local economic fluctuations.

Due to the unique characteristics of the Former Soviet Union (FSU) region, the methodology of matching IPO firms with specific comparable firms was not employed. This approach was not feasible as a significant portion of the researched companies lacked comparable firms from the same country or industry. Thus, benchmarks of indexes were used to analyse the data.

4.3 Long run performance explanation

Once the results from the underpricing and long run performance data are obtained. To evaluate the explanatory power of existing theories regarding long-run underperformance of IPOs. An ordinary least squares (OLS) regression model was employed to analyse the data. If evidence of heteroskedasticity is found, robust standard errors will be used to correct for this. Another consideration in the regression analysis is the issue of multicollinearity. Multicollinearity refers to the situation where two or more independent variables in a regression model are highly correlated, which can cause problems in estimating the model's parameters accurately. To detect potential multicollinearity in the model, VIF tests will be conducted. If VIF values are found to be higher than 10, the model will be revised to eliminate this issue.

$$Performance_i = \alpha_0 + \beta_1 Underpricing_i + \beta_1 Underwriter_i + \beta_2 LogSize + \beta_3 RealEstate_i + \beta_4 Country_i + \beta_5 Ebitda_i + \beta_6 LogLeverage_i + \beta_7 LogBookvalue_i + \varepsilon$$

Where:

Performance, MAHBR for the given benchmark over one, two or three years.

Underpricing, MAAR for the given benchmark.

LogSize, logarithm of the gross proceeds for a firm at the time of the IPO

RealEstate, A dummy whether the company was in the real estate sector.

Country, Dummies for each individual country of the FSU

ε, error term

Ebitda, Earnings before interest taxes depreciation and amortization at the time of the IPO

LogLeverage, logarithm of the debt to asset ratio

LogBookvalue, logarithm of the ratio of the market value of the equity to the book value

CHAPTER 5 Results & Discussion

5.1 Underpricing

The IPO underpricing within the FSU region reveals interesting findings. On average, the underpricing levels for FSU IPOs range from 2.1% to 2.3%, depending on the benchmark used. These figures fall short of the underpricing numbers compiled by Ritter (2023), indicating that FSU IPOs have lower levels of underpricing compared to IPOs from other countries around the world.

Furthermore, when compared to other research on underpricing in the region. The level of underpricing in this dataset is also. The study by Loughran, Ritter and Rydqvist (2013) found an average underpricing of 4.2% for Russian IPOs between 1996 and 2006.

Table 4. Initial return performance of the sample

S&P500					
	Total	Russia	Ukraine	Kazakhstan	Baltic
Observations	95	62	12	9	14
Avg. Initial Return	2.271%	1.651%	2.709%	8.674%	1.647%
Avg. Benchmark return	-0.081%	-0.068%	-0.219%	-0.293%	0.032%
MAAR-Return	2.298% ***	1.719%*	2.928%**	8.940%**	1.6316%

National stock Index					
	Total	Russia	Ukraine	Kazakhstan	Baltic
Observations	95	62	12	9	14
Avg. Initial Return	2.271%	1.651%	2.709%	8.674%	1.647%
Avg. Benchmark return	0.118%	0.363%	-0.940%	-0.664%	0.150%
MAAR-Return	2.099%***	1.288%**	3.649%***	9.311%**	1.498%*

Stock exchange of listing Index					
	Total	Russia	Ukraine	Kazakhstan	Baltic
Observations	95	62	12	9	14
Avg. Initial Return	2.271%	1.651%	2.709%	8.674%	1.647%
Avg. Benchmark return	0.067%	0.115%	-0.234%	-0.173%	0.174%
MAAR-Return	2.150%***	1.538%**	2.943%**	8.820%**	1.473%*

$*p < .10. **p < .05. ***p < .01.$

Interestingly, most countries within the FSU region exhibit similar levels of underpricing for their IPOs, ranging from 1.5% to 3.7%. However, Kazakhstan stands out as an outlier, reporting a significantly

higher underpricing range of 8.9% to 9.3%. This observation suggests that factors specific to the Kazakhstani market may play a role in determining the initial offer price of IPOs.

The lower underpricing observed in the FSU region compared to other countries challenges the established theory that suggests underpricing has a positive effect on the long-run performance of stocks. It implies that companies within the FSU region may prioritize minimizing the amount of money left on the table during their IPOs, potentially indicating a greater focus on short-term gains rather than long run performance.

5.2 Long run performance

According to the data presented in Table 4, it is evident that underperformance exists within the FSU region. The severity of this underperformance is most pronounced when comparing the performance against established benchmarks such as the S&P 500 or the stock exchange of the listing. However, when measuring against a national stock index, the underperformance is not as apparent. This finding suggests that initial public offerings in the FSU region are not significantly affected by their newness in the market and yield similar results compared to the overall economy.

This observation is unexpected considering that economies in the FSU are generally categorized as emerging markets. In theory, emerging markets are expected to exhibit higher returns compared to developed economies. However, the data indicates a deviation from this expectation, highlighting a potential disparity between anticipated returns and actual performance within the FSU region.

Table 5. The long run performance for the FSU.

S&P500

	Total	Russia	Ukraine	Kazakhstan	Baltic
Observations	95	62	12	7	14
Long run performance 1 years	-7.96%**	-9.50%*	-18.57%**	33.56%***	-19.44%**
2 years	-12.76%**	-15.38%**	-29.08%*	48.91%*	-23.22%***
3 years	-15.83%*	-18.35**	-58.21%***	45.13%**	46.87%***

National stock Index

	Total	Russia	Ukraine	Kazakhstan	Baltic
Observations	95	62	12	9	14
Long run performance 1 years	-0.56%	4.48%	-21.28%	36.62%*	-19.91%*
2 years	-7.84%	-1.40%	-33.73%*	36.02%	-42.36%**
3 years	-2.88%	-6.10%	-37.67%	89.90%	-48.29%**

Stock exchange of listing Index

	Total	Russia	Ukraine	Kazakhstan	Baltic
Observations	95	62	12	9	14
Long run performance 1 years	-12.51%**	-11.80%**	-37.37%**	38.89%*	-35.05%**
2 years	-20.78***	-17.48%**	-80.38%**	53.68%*	-48.83%**
3 years	-20.24%*	-19.09%*	-121.64% ***	93.58%*	-34.12%

$*p < .10.$ $**p < .05.$ $***p < .01.$

It is quite surprising and contrary to expectations that Kazakhstan is the only nation where IPOs consistently outperform both the national index and the stock exchange index of the listing. This is especially unexpected considering that Kazakhstan is a small and developing economy, where one would anticipate a greater degree of underperformance.

Another interesting observation is that, for the entire dataset besides Kazakhstan, the degree of underperformance appears to worsen as time passes. It remains to be seen whether this trend will stabilize after three years. Research on underperformance after three years in other countries suggests that IPOs tend to align with market returns at that point (Ibbotson, 1975). It is important to note that

there is no discernible difference in the worsening trend of underperformance among individual countries when compared to their respective benchmarks.

A t-test was conducted to assess the statistical significance of the differences between the first day underpricing return and the returns of the benchmark on the same day. The results of the t-test indicated that within all countries of the FSU, except the Baltics, the mean of the stock was significantly greater than that of the benchmark at the 5%-significance level.
Comparing IPOs from various countries, as presented in Table 2, reveals interesting patterns in long term performance. Specifically, when examining IPOs from the FSU region, it becomes clear that.

Comparing the long-run performance of IPOs with the National stock index benchmark, the results reveal a lack of statistical significance. This suggests that there is no significant difference between IPOs and the overall performance of the national market. The lack of statistical significance implies that any observed differences between IPOs and the national market may be due to chance or random variation.

Overall, the FSU as a whole fall within the range observed for other countries in the dataset. This implies that while individual FSU countries may exhibit varying IPO performance, the collective performance of the region aligns with global trends. Therefore, the FSU region, as a whole, does not significantly differ from other countries in terms of long-term IPO performance.

5.2.1 Explaining Long run performance

Underpricing is negatively related to the long run performance according to the sample. Underpricing is also statistically significant in the National Index and Stock Exchange benchmark regression. This follows the theory that long run performance is negatively correlated to underpricing, also known as the "leaning against the winds hypothesis" (Loughran & Ritter, 2002). Evidence for this hypothesis is provided by Ritter (1991) and Krigman, Shaw and Womack (1999).

As expected, the rank of the underwriter has a significant positive effect on the long run performance of the IPO. If an IPO is managed by a more prestigious underwriter, the long run performance improves significant, between a six and ten percentage point increase if the rank of underwriter increases by one.

The dummy reflecting real estate is significant for three of the regressions. The dummy has for all regressions a negative coefficient which can be explained by the Subprime mortgage crisis. The crisis happened during the time most IPOs were on the market for one to three years.

The dummy for Kazakhstan is positive and significant for all regressions, which implies that Kazakhstani IPOs overperform compared to the sample. According to the regression analyses, a firm from Kazakhstan will add 45 to 98 percentage points to long run performance of the sample, accounting for the different benchmark. On the other hand, Ukrainian and Baltic IPOs significantly underperform compared to the sample. Specifically, an IPO form Ukraine or the Baltic it will lower the long run performance by 42 to 114 percentage points.

The logarithm of the Bookvalue variable is only statistically significant for the National index benchmark and has a negative coefficient , which is in line with the established literature by Fama & French (1991) and Ritter & Welch (2002) regarding the price-to-book ratio. A 1% increase in the Bookvalue will decrease the long run performance by 0.000131 percentage points.

Ebitda is also only statistically significant for the National index benchmark and has a negative coefficient. This outcome deviates from the initial expectations as EBITDA is anticipated to exert a positive impact on long-term performance According to the regression analysis, an increase in the Ebitda by 1 will decrease the long run performance by 0.0001.

The leverage variable is statistically significant for all three regression analyses. The different analyses present a mixed picture. The positive coefficient in the National index benchmark suggests a potential for improved long run performance with increased leverage ratio, while the negative coefficient for the S&P 500 and the Stock exchange index hints towards the opposite correlation. The literature on the leverage ratio is divided and this analysis does not answer the question.

Table 6. OLS Regression analyses for three year long run performance.

Variables	Benchmarks		
	S&P 500 index	National index	Stock exchange index
Underpricing	0.2828	-1.5228 ***	-1.8610***
	(1.18)	(-5.67)	(-4.36)
Underwriter	0.0548***	0.0676***	0.1109***
	(3.86)	(3.95)	(4.03)
Real_Estate	-0.0610*	-0.5606***	-0.1135***
	(-1.67)	(-3.76)	(-4.29)
LogSize	-0.00004	-0.0011	0.0013
	(-1.32)	(-0.18)	(-0.21)
Kazakhstan	0.9823***	0.4558***	0.7756***
	(3.32)	(2.79)	(4.24)
Baltic	-0.0218	-0.4211***	0.0641
	(-0.75)	(-4.18)	(1.57)
Ukraine	-0.2643**	-0.3343**	-1.1414***
	(-2.21)	(-2.11)	(-3.08)
LogBookvalue	-0.0073	-0.0131***	0.0057
	(0.02)	(-3.09)	(1.16)
Ebitda	-0.0001	-0.0001***	-.00004
	(-3.21)	(-3.53)	(-1.24)
LogLeverage	-0.2243**	0.0435***	-0.0326**
	(-2.63)	(-3.65)	(--2.50)
Constant	-0.7420***	-0.1466**	-0.7383***
	(-4.31)	(-1.82)	(-4.03)
N	95	95	95
R^2	0.2145	0.1477	0.2173
F	12.53	18.37	15.54

*$p < .10$. **$p < .05$. ***$p < .01$. T-statistics are given in parentheses.

White's test showed evidence for heteroskedasticity in the regression analyses for all benchmarks, thus, the analysis incorporated robust standard errors to produce more reliable coefficient estimates and standard errors. This adjustment helps to ensure that the statistical inferences drawn from the model are valid despite the violation of homoscedasticity

A VIF test was conducted to check for potential multicollinearity among the independent variables. Table 6 shows that the VIF values for all variables were found to be below the common thresholds of 10, suggesting that multicollinearity is not a concern in this model.

Table 7. Variance Inflation Factor test

Variable	S&P 500	National Index	Stock Exchange Index
Underwriter	1.40	1.43	1.41
Baltic	1.38	1.34	1.34
LogSize	1.35	1.34	1.32
Ebitda	1.25	1.25	1.25
Under_Nat	1.24	1.23	1.19
Kazakhstan	1.12	1.12	1.11
Ukraine	1.09	1.09	1.09
LogLeverage	1.08	1.08	1.08
Real_Estate	1.07	1.08	1.08
LogBookvalue	1.03	1.03	1.03
Mean VIF	1.20	1.20	1.19

5.3 Discussion

The results show a difference in the level of underpricing compared to research in other countries (Ritter, 2023). However, the results are similar to the research done by Loughran, Ritter and Rydqvist (2013) in a study looking at different Russian IPOs. This shows that IPOs from the FSU have a lower degree of underpricing compared to the rest of the world.

The long run performance of IPOs from the FSU falls in the same range of long run performance in other countries. One outlier is IPOs from Kazakhstan, they show a long run overperformance which is not in line with previous research done in long run performance of IPOs. One of the reasons for this overperformance might be due to the relatively small sample of Kazakhstani IPOs, this small sample might have given an outlier a larger influence on the results. However, the long run overperformance of Kazakhstani IPOs is significant against most benchmarks.

The inclusion of key control variables, such as EBITDA, leverage ratio, and book-to-market ratio, aimed to assess their potential influence on the long-run performance of IPOs in the FSU region. However, the results of the regression analysis indicated that these control variables were not found to be statistically significant in explaining the observed long-run performance of the IPOs. This finding diverges from some prior literature, which suggested a potential effect of these variables on long-run IPO performance (Fama and French, 1992; Eckbo and Norli, 2005; Chen and Kao, 2008). This might be due to the difference in regions, previous research has mainly been focused on Western markets. Additionally, the smaller size of the sample and potential data limitations may have influenced the statistical power of the analysis. Acquiring comprehensive pre-IPO data on firms within the FSU posed a challenge due to the limited availability, which constrained the analysis. As such, the study predominantly relies on post-IPO data for evaluation. By employing robust standard errors to account for detected heteroskedasticity, the study has ensured that the results are robust despite the violation of the standard regression assumptions.

CHAPTER 6 Conclusion

This thesis has undertaken an analysis of underpricing of IPOs and underperformance originating from the Former Soviet Union during the period 1996 to 2019. The sample consisted of 95 firms from Russia, Ukraine Kazakhstan, and the Baltics. Additionally, it has determined the factors that influence the long-run performance of these IPOs over an one-, two-, and three-year period.

The research has revealed that underpricing is prevalent in all the country that make up the FSU. However, the level of underpricing is lower than what has been recorded in research in other countries. This could suggest that owner of firms in the FSU region may prioritize the short-term gains from of an IPO and minimize the extent to which they leave money on the table.

Another result is the long run performance of the firms from the FSU compared to three benchmarks. Companies from Kazakhstan are the only companies which exhibit a long run overperformance. Ukrainian IPOs show the highest degree of long run underperformance. Other firms show a long run underperformance which is in line with research from other countries on long run performance. Underperformance is the most severe when compared to the index of the stock exchange of the listing. Long run performance does not show significant results when compared to the national index, this could mean that there is no significant difference between the long run performance of the national index and the FSU IPOs.

The regression analysis reveals significant factors influencing long-run performance after IPOs. Surprisingly, higher initial day returns are associated with worse long-term performance. Furthermore, firms operating in the real estate sector and those originating from Kazakhstan and the Baltics exhibit underperformance compared to the sample. On the positive side, IPOs led by reputable underwriters tend to experience better long-run performance, while larger IPOs tend to have lower long-run returns.

By focusing on the FSU region, this thesis makes a valuable contribution to the existing IPO literature, which has traditionally centred on other regions and countries. This study addresses a research gap by shedding light on the IPO dynamics and outcomes in the under-researched FSU region. It also expands the existing literature about the FSU by incorporating newer IPO data. By examining the specific context of the FSU, it expands our understanding of the factors driving underpricing and underperformance in emerging markets.

A potential limitation of this analysis is the omission of variable that could significantly impact the long run performance of IPOs. For example, the backing by Private Equity (PE) or Venture Capital

(VC) firms. Another missing variable is the percentage of stocks that were retained by the owners of firm after the IPO, this could signify the continued faith in the firm by the original stakeholders. The backing by a PE or VC firm can show that a firm is more credible which could potentially affect the degree of underpricing and long run performance. When owners retain a large part of the stocks, often reflects that the owner have confidence in their own firm and long run perspective. This could drive up the offer price, reducing the degree of underpricing. Furthermore, confidence in the firm by the original stakeholders could have impact on the long run performance of the firm. Despite the potential significance, these variables were not included in the analysis. The percentage of retained shares, for example, was not included as there was no reliable data found in the sources used. Due to the time constrained associated with the completion, to scope of this thesis was limited. Variables, such as PE or VC backing, could potentially have had an impact, a complete investigation of all factors is not feasible within the timeframe.

Future studies could incorporate more variable to allow for more comprehensive research into underpricing and long run performance. This could build upon the research that has been done by this study and allow for more complete and accurate models.

In this thesis, proxies have been used instead of directly measuring some of the factors that could influence long run performance. Gross proceeds of the IPO have been used as a proxy for size of the firm. The use of proxies is not a perfect measurement system and could lead to measurement error into the regression analysis.

The implications of this research extend beyond the academic realm. Understanding the underpricing and long-run performance of IPOs in the FSU region can provide insights to various market participants operating in this specific region.

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