UNDERPRICING AND LONG-TERM PERFORMANCE OF INITIAL PUBLIC OFFERINGS FROM CIS

by

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Abstract

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This paper estimates the degree of underpricing and underperformance for IPOs originating from Russia, Ukraine and Kazakhstan during the period from 1996 to 2010. It also determines the factors explaining the performance of these stocks in the one, two and three year term after the date of IPO. The paper provides the comparison in the patterns of the above-mentioned phenomena across the three countries under study as well as their comparison to the international evidence. It also provides the results for variability in the estimates of underpricing and underperformance against a set of benchmarks relevant for a diverse circle of investors.

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GLOSSARY

Initial Public Offering (IPO). The first sale of a stock by a private company to the public

Underpricing. The pricing of an initial public offering (IPO) below its market value. When the offer price is lower than the first day closing price, the stock is considered to be underpriced.

Underperformance. Weaker performance of an initial public offering (IPO) usually documented in the long-run as compared to the relevant index

MSCI EFM Central and Eastern Europe & CIS (CEEC). Index of Eastern Europe & CIS stocks composed and calculated by the Morgan Stanley Capital International

MAAR. Market-adjusted abnormal returns

MABHR. Market-adjusted buy-and-hold returns

LSE. London Stock Exchange

AIM. Alternative Investment Market

RTS. Russian Trading System

MICEX. Moscow International Currency Exchange

WSE. Warsaw Stock Exchange

HKSE. Hong-Kong Stock Exchange

FSE. Frankfurt Stock Exchange

NASDAQ. National Association of Securities Dealers Automated Quotation

NYSE. New York Stock Exchange

Chapter 1

INTRODUCTION

With the collapse of the USSR, private entrepreneurship began developing in the newly formed CIS states. After the initial privatization was over, the growing private sector firms started to seek opportunities to raise capital. The option of an Initial Public Offering (IPO) for raising equity capital was first used by a CIS firm in 1996, when Russia-originating VimpelCom Ltd. started trading its shares on NYSE stock exchange. The first Ukrainian firm to conduct an IPO was the real estate developer XXI Century, which offered its shares to the investors on the AIM exchange in London in 2005. In Kazakhstan the public debut on an international exchange is attributed to Hambledon Mining, which raised $5mln on AIM in 2004.

This research is devoted to the study of the IPO activity of the firms from Ukraine, Russia and Kazakhstan as these three countries provided the bulk of the capital that CIS firms have raised on equity capital markets. Overall, according to PBN reports of 2005, 2007, 2009 and 2011 since 1996, the year of first CIS IPO, 122 firms from Russia, Ukraine and Kazakhstan raised in total about $70 billion of funds on stock exchanges in USA, Russia, UK, Germany, Poland and Hong Kong.

The major goal of this research is to establish whether underpricing and underperformance are present in IPOs of firms from the research targeted countries. Underpricing and underperformance were an eminent feature of IPOs in all markets across different periods and are the most studied phenomena in the IPO literature. However, due to the lack of IPO history this topic has not been widely discussed for the CIS countries.

Underpricing is an indirect cost that the firm bears when "going public", as opposed to direct costs such as underwriting, registration, legal and auditing services. Underpricing implies increase of the new public stock price by the end of the first day of trading as compared to the initial offer price. The fact that firms are willing to underprice their initial offering, as per Ibbotson et al. (1994) allowing for 10-50% growth of their stock price in the first day of trading alone needed some explanation and so underpricing became a major topic for IPO research.

Due to the relatively small amount of IPOs conducted by the CIS firms there is a lack of literature on underpicing in their IPOs. The rare study by Ritter on a sample of 40 Russian IPOs conducted on national and international exchanges within the period of 1999-2006 recorded underpricing of 4.2%.

Another IPO-related phenomenon that received significant attention is the fact that in the long-term (1-5 years) IPO-firms were shown to underperform market indexes and comparable non-IPO firms. However, as was shown by Fama and French (1996) the degree of underperformance depends on the benchmark employed.

Since underperformance in CIS IPOs just as their underpricing has not been widely covered, investors interested in CIS IPOs still lack a clear idea of how these IPOs historically performed compared to various benchmarks and IPOs from other countries.

Therefore, the aim of this research is to cover this gap and to determine what is the degree of underpricing and underperformance in IPOs from Russia, Ukraine and Kazakhstan. The specific factors effecting the IPO performance in countries under study will be explored to draw conclusions on their commonalities and

differences. The results will be also compared to those obtained for developed markets.

Another goal of this research is to determine the behavior of underpricing and underperformance against various benchmarks. These results are especially important for the reason that the IPOs under consideration are listed on different exchanges and therefore for different investors different benchmarks would be seen as relevant. Besides, since the research deals with IPOs from different countries we will also need to construct a kind of benchmark that would bring all of the researched IPOs to a common denominator.

Once existence and degree of underpricing and underperformance for CIS IPO stocks are established a subsequent goal is to determine which of the existing theories explaining IPO performance are the most relevant for the case of the CIS IPO data. These findings are expected to give an idea about what parameters of the IPO transaction and what firm-specific characteristics can be reliable predictors of the future performance of an IPO stock from CIS.

The paper is structured as follows. In the second chapter the literature review is given. The third chapter contains chosen methodology of the proposed analysis. The fourth chapter includes data description. In the fifth chapter the empirical results are discussed. And the last chapter provides conclusions and suggestions.

Chapter 2

LITERATURE REVIEW

The vast majority of papers devoted to research of IPOs and IPO underpricing and long-run performance in particular study these phenomena as issues that are not related to one another. Some of the exceptions are the works of Ritter (1991) Rajan and Servaes (2002), Ljungqvist (2004), Ljungqvist, Nanda and Singh (2004), Santos (2010). In this section I will first provide an overview of former theories treating the two issues separately and afterwards theories linking underperformance to underpricing will be discussed.

Underpricing of IPOs

Extensive research examining IPO markets in countries around the world reveals that issuers are consistently willing to "leave money on the table" and underprice their offerings. One of the highest first-day returns at the rate of 92.7% was recorded by Marisetty and Subrahmanyam in India for the sample of IPOs dating from 1990 to 2007. Studies in other countries evidence average initial returns ranging from 4.2% in France for the 1983-1992 period to 164.5% in China during 1990-2005 as per study of Ritter (1998). The results of these studies were compiled by Ritter (2008) and are provided in Table 1.

Theories of underpricing are generally grouped into the following major categories: asymmetry of information, revelation of information theories and ownership and control theories.

Table 1. International evidence on IPO underprcing

Country	Source	Sample Size	Period	Initial Return
Australia	Lee, Taylor & Walter; Woo; Pham; Ritter	1,103	1976-2006	19.8%
Brazil	Aggarwal, Leal & Hernandez; Saito	180	1979-2006	48.7%
China	Chen, Choi,and Jiang (A Shares)	1,394	1990-2005	164.5%
France	Loughran, Ritter and Rydquist	686	1983-1992	10.7%
Germany	Ljungqvist; Rocholl: Ritter	652	1978-2006	26.9%
Greece	Nounis, Kazantzis & Thomas	363	1976-2005	25.1%
India	Marisetty and Subrahmanyam	2,811	1990-2007	92.7%
Indonesia	Hanafi; Ljungqvist & Yu; Danny; Suherman	321	1989-2007	21.1%
Ireland	Ritter	31	1999-2006	23.7%
Malaysia	Isa; Isa & Yong; Yong	350	1980-2006	69.6%
New Zealand	Vos & Cheung; Camp & Munro; Ritter	214	1979-2006	20.3%
Norway	Emilsen, Pedersen & Saettem; Liden; Ritter	153	1984-2006	9.6%
Poland	Jelic & Briston; Ritter	224	1991-2006	22.9%
Russia	Ritter	40	1999-2006	4.2%
Spain	Ansotegui & Fabregat; Alvarez Otera	128	1986-2006	10.9%
Turkey	Kiymaz; Durukan; Ince	282	1990-2004	10.8%
United Kingdom	Dimson; Levis	3,986	1959-2006	16.8%
United States	Ibbotson, Sindelar & Ritter	12,007	1960-2007	16.9%

Sources: http://bear.cba.ufl.edu/ritter/Int2008.pdf

One of the pronounced theoretical setups explaining IPO underpricing that is based on asymmetric information is "winner's curse" introduced by Rock (1986).

It relies on the assumption that participants of the IPO process - issuer, IPO managers and investors - all have different access to information relevant for valuation of the stock. Under this assumption investors can be classified as informed and uninformed. Consequently, informed investors participate only in allocations of shares that have high prospects of growth, while uninformed investors cannot differentiate stocks rationally. Thus, uninformed investors get all of the shares in inferior allocations, while in lucrative IPOs they only get partial access due to the competition from informed investors. As a result the expected returns of uninformed investors are negative and, thus, they are discouraged from investing. Under the circumstance when funds of informed investors are insufficient to meet the capital needs of the issuer underpricing is used to allow uninformed investors to at least breakeven and, thus to motivate them take part in the issue.

One of the implications of the winner's curse model is that underpricing should increase with uncertainty Ritter (1987). This hypothesis has been supported by numerous empirical studies such as those by Megginson and Weiss (1991), Ljungqvist and Wilhelm (2003) and others. In various studies uncertainty was instrumented with the age of a firm and size of a firm, the value of proceeds from an IPO, etc.

Another consequence derived from the winner's curse is that underwriters (IPO managers) that underprice issues too much lose business from issuers and in case of too little underpricing they are not able to stimulate sufficient subscription to the issue from the investors Beatty and Ritter (1986). Nanda and Yun (1997) tested how underwriters' market value changes depending on the degree to which it under/overprices new issues. Their evidence suggests that underwriters are motivated to underprice issues moderately in order to attract uninformed investors.

A big part of studies on IPO underpricing (also based on the asymmetric information) is referred to as "revelation of information theories". Models of this setup have developed largely due to emergence of bookbuilding approach to allocation of shares by investment banks. Under this approach an investment bank subscribes investors to the issue based on the price that they offer. Correspondingly, investors willing to pay higher price for the stock get larger allocation in the issue. In such a way investors are incentivized to reveal their valuation of the stock. However, to boost the attractiveness of a particular stock for the investors and to motivate them to compete for it, investment banks chose to underprice IPO stocks Benveniste and Wilhelm (1990).

Under such setup all three parties (the issuer, the investment bank and investors) involved in the process are able to extract benefits. The issuer gets price for his shares that is closer to the true value, while the investors still have some money "left on the Table". At the same time the investment bank through forcing price closer to its fair value keeps its clients satisfied. Since bookbuilding allows for adjustment of the price only to a limited extent this underpricing related phenomenon is known in literature as partial adjustment due to Hanley (1993).

It was shown by Busaba, Benveniste, and Guo (2001) that underpricing is negatively related or can be decreased if an issuer has alternative ways of raising capital. The reasoning that in this case investor's risk of losing allocation in attractive IPO increases when investor tries to downplay his positive valuation of the stock.

Another explanation of underpricing based on asymmetric information has its grounds in signaling investors a high true value of a firm. Such a signal is supposed to allow a firm to come back to equity market in the future and obtain financing under much better terms. Models based on this theory were developed and tested in the works of Allen and Faulhaber (1989) and Welch (1989).

Another group of factors used to provide reasoning for underpricing relates to preserving management control. Underlying assumption in this setup is that underpricing stimulates demand for an IPO from a wide range of investors. Consequently, management obtains opportunities for dispersion of floating shares. Various reasons are suggested to explain motivation for floating stock ownership dilution. Brennan and Franks (1997) consider ownership dispersion desirable by the management of a firm going public as it will experience relatively less pressure from a wider list of small shareholders. This is due to free-riding concept, as control over management can be considered a public good from the prospective of these shareholders. On the contrary Zingales (1995) suggests that dilution of ownership would allow controlling shareholder to get higher level of proceeds when selling controlling stake in the future. Yet another reason to underprice issue for its further dilution is higher market liquidity of the stock Booth and Chua (1996).

Long-run underperformance

Long-run underperformance of IPOs has been recorded on various international capital markets in various years. The results of the studies on underperformance were compiled by Ritter (1998) and are provided in the Table 2. According to these data abnormal long-run returns on IPOs were as low as -47% in Brazil in the period from 1980 to 1990 Aggarwal, Leal & Hernandez (1993).

Just as the underpricing, long-run underperformance of IPOs has been extensively investigated and various explanations of these phenomena have been provided. One of the first hypotheses justifying underperformance of IPO was the divergence of investors' opinion due to Miller (1977). Miller claimed that price of the issue in its initial trading was determined by the most optimistic investors.

With time as availability of information on the stock increases, divergence of the opinions subsides and price necessarily adjusts downwards resulting in poorer long-run performance of IPOs.

Table 2. International evidence on long-run IPO underperformance

Country	Author(s)	Number of IPOs	Issuing years	Total abnormal return
Australia	Lee, Taylor and Walter	266	1976-89	-46.5%
Austria	Aussenegg	57	1965-93	-27.3%
Brazil	Aggarwal, Leal and Hernandez	62	1980-90	-47.0%
Canada	Jog and Srivistava	216	1972-93	-17.9%
Chile	Aggarwal, Leal and Hernandez	28	1982-90	-23.7%
Finland	Keloharju	79	1984-89	-21.1%
Germany	Ljungqvist	145	1970-90	-12.1%
Japan	Cai and Wei	172	1971-90	-27.0%
Korea	Kim, Krinsky and Lee	99	1985-88	+2.0%
Singapore	Hin and Mahmood	45	1976-84	-9.2%
Sweden	Loughran, Ritter	162	1980-90	+1.2%
U.K.	Levis	712	1980-88	-8.1%
U.S.	Loughran and Ritter	4,753	1970-90	-20.0%

Source: Ritter Jay, Initial Public Offerings, 1998

Khurshed, Mudambi and Goergen (1999) suggested that long-run performance of the firm depends on the pre-IPO factors, such as management and firm's performance prior to becoming public. They found that long-run performance of an IPO stock is inversely related to its profitability before the issue as well as to

the degree of change in ownership in the process of IPO. It was also found to be positively related to the size of the firm.

Mikkelson (1997) tested the hypothesis of the dependence of long-run stock performance on post-IPO ownership structure of the firm. He found no evidence of the ownership effect.

The so-called impresario hypothesis set forth by Shiller (1990) suggests that investment banks managing the issue are incentivized to underprice it in order to create an impression of excess demand. As a result the stock price is hyped initially.

Underpricing and underperformance

A separate set of literature is devoted to exploring the relationship between initial underpricing and long-run underperformance of IPOs. Even though very strong arguments and evidence were introduced along this line, this approach to the issue still has not been widely recognized in the literature.

Santos (2010) shows on the set of the USA IPOs conducted in the period from 1973 to 2008 that firms that conduct their IPO during the periods of low undepricing do not underperform as much in the long-run compared to firms going public during high underpricing periods. Moreover, he finds that "IPOs in later stages of high underpricing periods underperform even relative to their offer prices, which suggests that many of the most "underpriced" IPOs are in fact overpriced". This result contradicts the common notion that underpricing is a discount to fundamental value. Santos shows that underperformance of underpriced IPOs does not stem from the difference in risk or difference in growth opportunities. Since, as for the first to hold true it must be true that

poorly performing IPOs are less risky at the time of the offering. As was shown by Santos these stocks were actually not less but more risky and were weaker operationally, in terms of the return volatility, operating profitability, betas and delisting rates. The other possible explanation that Santos proves not to hold is that investors are willing to overpay during the periods of high underpricing for the chance of discovering the next Microsoft. He shows that there is no evidence that firms going public in high underpricing periods are more likely to yield extremely high returns.

On the other hand Santos finds that investment sentiment is stronger in high-undepricing periods, which leads him to conclusion that low-quality firms exploit investor's optimism by going public during the periods of high underpricing. While, during low underpricing periods when premium over the fundamental firm value is low only firms with positive NPV investment opportunities have the incentive to go public.

This result of Santos is inconsistent with the idea that underpricing represents a discount to fundamental value Rock (1986), Welch (1992), Benveniste and Spindt (1989) Benveniste and Wilhelm (1990) or a costly instrument that firms use to signal quality Welch (1989) Allan and Faulhaber (1989).

Other authors have that come to similar conclusions to the ones of Santos are Ritter (1991), Krigman, Shaw and Womack (1999), Rajan and Servaes (2003), Lyunquist, Nanda and Singh (2006).

Research of IPO Underpricing and Underperformance for the case of CIS

As it was earlier mentioned the literature devoted to CIS IPOs is relatively scarce, and it is especially so for the specific issues such as underpricing and

underperformance of IPOs. Certain issues, focused around optimal IPO structure are addressed by Napolnov (2011), Gvardin (2007) and others.

A comprehensive study conducted by Klimova (2009), set a substantial basis for subsequent research of the underpricing and underperformance of IPOs in CIS. This research was devoted to defining the determinants of the exchange choice for Russian companies.

Klimova finds that the greater the size of the company is (in terms of market capitalization at an IPO) and the greater the capital needs are (approximated by the size of the offering) the higher the probability for Russian company is to list on a foreign exchange. Moreover, she establishes an average degree of underpricing of 5.2% for Russian companies in the period of 1996-2008. Testing various hypotheses to explain underpricing Klimova fails to find evidence of influence of exchange or underwriter choice on the degree of underpricing. She finds that capitalization positively effects long-run performance of an IPO in two-year prospective. Also she finds that IPOs listed on Russian exchanges perform better in the long-term.

Contribution of the study:

The novelty of this research is brought about by the insufficient coverage in the literature of IPO underpricing and underperformance in CIS countries. The contributions of the current research are listed below:

1. Underpricing and underperformance of IPOs from Ukraine and Kazakhstan are estimated for the first time as to our knowledge. For the case of Russia it is done on an increased set of data.

2. The framework of this research would allow drawing conclusions on differences and similarities of IPOs from given CIS countries.

3. Due to increased availability of data it would be possible to estimate long-run performance for IPOs from Russia, Ukraine and Kazakhstan on one-, two- and three-year time horizon. Prior to this research, Klimova (2009) studied long-run performance for the case of Russia, but her research was bound to a limited set of data with research horizon not taking into account one-year performance of IPOs.

4. Different benchmarks would be employed in estimation in order to ensure that research results suit the needs of a wider range of international investors.

Chapter 3

METHODOLOGY

Estimating Underpricing and Underperformance

In estimation of underpricing market adjusted abnormal returns (MAAR) for each company are computed using different benchmarks, following the approach used by Khurshed et al. (1999). Total returns for the stock on the initial day of trading are computed by the following formula:

$$R_{i,1} = \ln\left(\frac{P_{i,1}}{P_{i,0}}\right) \quad (1)$$

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

The benchmark return is calculated based on performance of the benchmark indexes in the first day of the respective stock trading:

$$R_{m,1} = \ln\left(\frac{I_{m,1}}{I_{m,0}}\right) \quad (2)$$

$R_{m,1}$ is the return of the index on the first day of trading in the IPO stock, $I_{i,1}$ is the closing value of the index on that day and $I_{m,0}$ is the closing value of the index on the previous date.

The market adjusted abnormal return on the first day for a given stock is then calculated as:

$$MAAR_{i,0} = R_{i,1} - R_{m,1} \quad (3)$$

Average underpricing for each of the benchmarks applied is estimated as a simple mean of the individual stock MAARs. The statistical significance of the average underpricing is determined with the t-test of the difference in means of the stock returns in the first day of trading and of the respective benchmark index returns on the same day.

In a similar way as abnormal initial returns, the long-run performance is estimated by computing market adjusted buy and hold returns (MABHR) for the periods of one, two and three years after the IPO. The following formula is applied:

$$MABHR_i = \ln\left(\frac{P_{i,t+k}}{P_{i,t}}\right) - \ln\left(\frac{I_{m,t+k}}{I_{m,t}}\right) \quad (4)$$

Where $P_{i,t+k}$ and $I_{m,t+k}$ are the price of the stock and value of the index, respectively, after the period k from the IPO date; $P_{i,t}$ and $I_{m,t}$ are the closing price of the stock and value of the index in the first trading day. In the framework of this research MABHR and, thus, underperformance is calculated for k equal to one, two and three years.

The statistical significance of the difference in means of the stock returns during the period of interest and of the respective benchmark index returns during the same period is tested with the t-test.

Benchmark setting

As it was shown by Fama et al. (1993) choosing a benchmark may play a crucial role in estimation of IPO underpricing and long-run performance. This is even more so for the case of IPOs from the CIS. Companies from these countries often conduct their IPOs on foreign exchanges and it is therefore unclear what benchmark is the most relevant. The issue gets even more complicated in the framework of the given research since it considers three different countries and, thus, applying a unified benchmark for them may be inappropriate. To overcome these complications and also to test the sensitivity of the results, three different benchmarks will be used:

1 Respective national stock index

2 Indexes of the stock exchange of the listing

3 MSCI EFM Central and Eastern Europe & CIS (CEEC)

In selecting the appropriate benchmarks it is assumed that there are three main groups of investors, which invest into CIS stocks. These investors have different investment objectives. The first group is considered to be investing predominantly into stocks originating from the same country as the IPO stocks in our research. These can be investment companies from Russia, Ukraine and Kazakhstan as well as local subsidiaries of international investors. For the purposes of these investors it is particularly interesting to know how these IPOs perform relative to other stocks from the respective country. So, the first benchmark used is based on performance of respective national stock indexes.

The second group of investors that may be willing to invest in CIS IPOs are those who chose investment targets on specific stock exchanges. Therefore for them it would be relevant to compare performance of CIS IPOs against indexes of stock exchanges on which they are traded. This gives the reasoning for the choice of the second benchmark.

Finally, the third group of investors is assumed to be interested not in stocks traded on a specific exchange or originating from a specific country, but rather in stocks originating from a certain geographic region with a common history, economic fundamentals, growth rates, etc. For the purposes of these investors all of the stocks in the research are adjusted with just one index - MSCI EFM Central and Eastern Europe & CIS (CEEC).

Benchmarking against specific companies based on matching is not used in this research since at the time that most of the researched companies under study conducted their IPOs there usually was no comparable company from the same country and industry that was already public. Therefore, such an approach would not be possible to apply.

Explaining Long-run Performance of IPOs

Once the results for underpricing and underperformance are obtained the existing theories explaining long-run performance of IPOs will be applied to establish which of them are the most relevant for the CIS case. For this purpose, the following heteroskedasticity robust ordinary least squares regression model will be estimated:

$$Underperformance = a0 + a1*Underpricing + a2*Capitalization + a3*Ln\_Free\_Float + a4*New\_Shares + \quad (5)$$

$$a5*Age + a6*D\_Real\_Estate + a7*Ukraine + a8*Kazakhstan + a9*Outliers + e$$

Where**:**

Underperformance – MABHR for a given benchmark for the periods of one, two and three years

Underpricing – MAAR for a given benchmark

Capitalization – Capitalization of the company at the time of IPO

Ln_Free_Float – Logarithm of the percentage of company's shares that are in free float after the offering

New_Shares – Percentage of shares in the IPO that are newly issued

Age – Age of the firm

D_Real_Estate – Dummy for companies from Real Estate sector

Ukraine – Dummy for Ukrainian IPOs

Kazakhstan – Dummy for Kazakhstan IPOs

Outliers - IPOs of Rosneft, Sberbank and VTB Capital

e – error term

The following theories and hypothesis justify usage of the above-mentioned explanatory variables in the regression equation:

Hypothesis 1: Underpricing is expected to be negatively related to the long-run IPO stock performance as per works of Santos (2010), Rajan and Servaes (2002) and others. Theory suggests that among others underpricing can be caused by agiotage demand for the stock at the time of an IPO hyped by the underwriters of the issue. Such agiotage can lead to overvaluation of an IPO stock, which sets a high base for the stock's performance measurement. Consequently, this leads to a poorer performance of the stock against given benchmark. The higher is the base for performance measurement or equivalently the higher is the rate of underpricing, the lower are the expectations of good stock performance.

Hypothesis 2: As was suggested by Carter et al. (1984) the greater is the number of years that the company has been in the marketplace prior to an IPO the greater is its expected quality. Therefore, it is suggested that age as a quality factor should be positively related to the performance.

Hypothesis 3: Following Levis (1993) market capitalization at the time of an IPO is supposed to positively influence stock performance as it serves as a proxy for size, which is also considered to be a sign of quality of the company.

Hypothesis 4: The conventional IPO theory (works of Jain and Kini (1994), Khurshed et al. (1999)), suggests that the percentage of shares in free float after an IPO is negatively related to performance, since major shareholders of the company are willing to dilute their ownership and thus, become less aligned with the goal of maximizing firm value. However, in the case of CIS, IPOs in which selling shareholders lose majority ownership in the company are rather an exception. Therefore, it is hypothesized that in this research free float percentage will have no effect on the stock performance.

Hypothesis 5: Percentage of new shares in the issue supposed to be positively related with long-run performance as it is assumed that under such circumstances more of the funds raised in the issue will be invested rather, than will be used to compensate existing owners for the dilution of their ownership. Besides, the fact that existing shareholders are selling their stock in the issue reduces their motivation to strive for company's results. It may also be interpreted as if owners, that are supposedly the most informed party, think that their company is not the best possible investment, which also suggests that the lower the percentage of new shares is the worse the stock will perform. Such relationship was proved by Jain and Kini (1994).

Hypothesis 6: The majority of the IPOs in the sample were conducted during the 2005-2007 period. Therefore, the period range in which long-run performance is measured for them goes from 2006 through 2010. This coincides almost perfectly with the time of the real estate crises, which implies that IPOs from the real estate sector are expected to perform worse than peers from other sectors. This result is expected to be more pronounced in a longer term prospective.

Hypothesis7: The IPOs of Rosneft, Sberbank and VTB Capital are 24 times larger than the average IPO in the rest of the sample, while their market capitalization at the time of their IPOs is 29 times larger than that of the rest of the sample. Therefore, they are assumed to be outliers and their performance is expected to follow a different pattern.

Hypothesis 8: The dummies for Ukrainian and Kazakhstan IPOs are included to test whether their performance is statistically and economically different from Russian IPOs, which constitute the bulk of the sample.

Chapter 4

DATA DESCRIPTION

The sample consists of 110 IPOs conducted by the Russian, Ukrainian and Kazakhstani companies during the period from November of 1996 (date of the first CIS IPO) to December of 2010. The sample does not include IPOs conducted after December of 2010 since to measure long-run performance for them is still too early. The sample does not include SPOs, pure listings and private offerings, some of which are often confused in the literature with the actual IPOs.

For the purposes of this research only the IPOs conducted on major international exchanges will be considered. Therefore my dataset consists of IPOs conducted on NYSE, NASDAQ, LSE, AIM, FSE,WSE, HKSE, RTS and MICEX. This condition ensures that the stocks studied are traded on exchanges with high capitalization, ensuring potential for high stock liquidity, and therefore allowing quoted stock prices to reflect the dominant investor's perception of the stock value. This is one of the reasons to exclude from the dataset of IPOs conducted on Ukrainian (PFTS, UX) and Kazakhstan (KASE) stock exchanges which fail to provide sufficient liquidity.

The data on IPO details, such as gross proceeds from the offering, percentage of equity in the company offered, percentage of new shares in the offering, age of the company and its profitability at the time of the IPO is obtained from Capital IQ database, PBN reports and from offering prospecta. The information on stock price and market index development was primarily obtained from Capital IQ and Financial Times databases as well as from the websites of respective stock exchanges and from PBN reports.

The distribution of the studied IPO firms by the country of origin and by the stock exchange of listing is provided in the figure 1**.** Russian companies represent 71% of the sample, due to the greater capacity of Russian economy. Kazakstani and Ukrainian firms are equally represented in the sample in terms of number of IPOs conducted with 15% share each. With the bulk of the IPOs coming from Russia, the IPOs from the other two countries will be benchmarked against this core CIS country in the research.

The fact that the number of the listings on different exchanges is greater than the number of the actual IPOs, observed in the Figure 1, is largely explained by the Russian legislation which starting from 2006 demands that those companies willing to list on a foreign exchange should also have a second listing on one of the Russian exchanges.

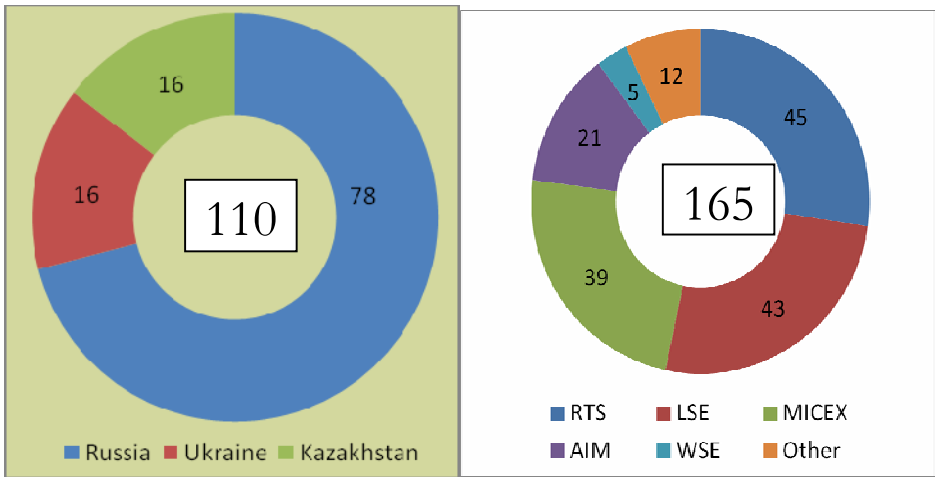

Figure 1. Distribution of IPOs by country and by the exchange of listing

The weight of Russian IPOs in the sample is even greater in terms of aggregate IPO proceeds. This is brought about by the greater average size of Russia-originating IPOs as compared to those IPOs of firms originating from Kazakhstan and Ukraine. These facts are evidenced by the Figure 3 and Figure 4.

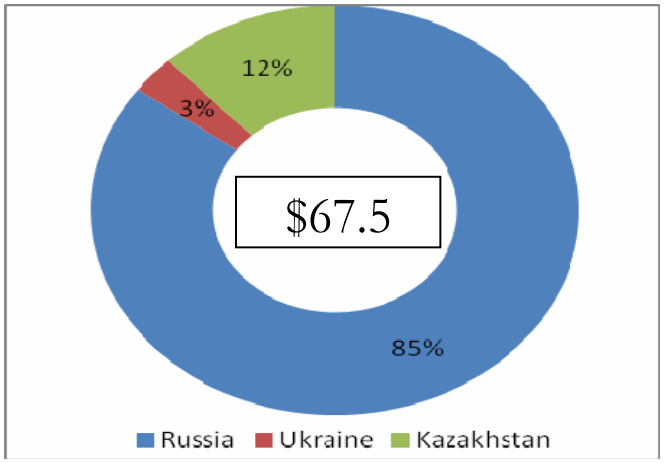

Figure 3. Distribution of IPO proceeds by country

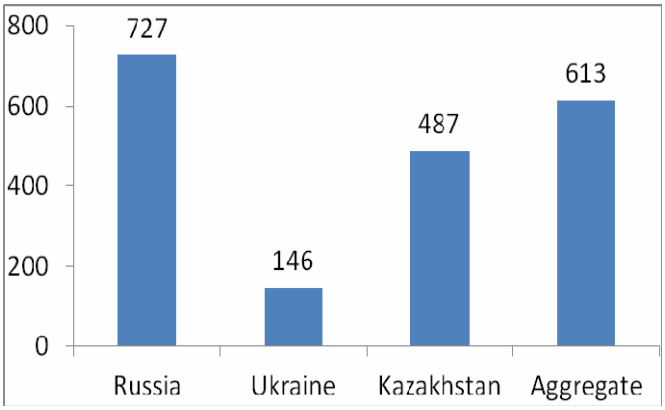

Figure 4. Average size of an IPO by country, USD mln.

As it can be seen from the Figure 2 the IPO activity in the targeted countries was quite negligible before 2004. Starting from 2004 and until the beginning of 2008 there was a significant growth in number of IPOs. 2007 was the peak year for IPOs in all three countries, with the amount of capital raised in this single year comprising 46% of the total capital raised through IPO procedure during the research period. After 2007, with the onset of the global financial crisis the IPO activity in the research countries was depressed, only slowly reviving in 2010. Therefore, the given data prove that companies match time of their offering with so-called "windows of opportunity" that coincide with the peaks of business cycles.

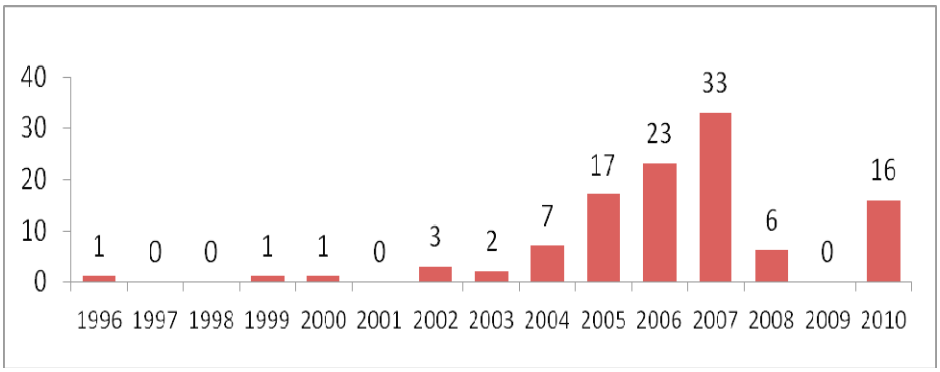

Figure 2. Distribution of IPOs by the year of listing

The descriptive statistics of the variables that will be used in the regression analysis is presented in the Table 3, where *Capitalization* stands for the market capitalization of the company at the time of IPO; *Free float* corresponds to the percentage of equity in the company offered; *New shares* stands for the percentage of new shares in the offering; *Age* represents age of the company at

Table 3. Descriptive statistics for the sample of IPOs

VARIABLE	N	Mean	Std. Dev.	Min	Max
Offering	110	614.4	1521.0	2.7	10700
Free float	110	25.7	15.9	0	100
New shares	110	67.2	39.3	0	100
Capitalization	110	3728.8	10761.2	16	7980
Age	110	19.9	28.2	0	165
Benchmark: MSCI EFM Central and Eastern Europe & CIS (CEEC)					
Underpricing	110	5.30	9.30	-14	39
Underperformance (1 year)	110	-20.93	56.89	-247	122
Underperformance (2 year)	97	-39.35	84.93	-303	111
Underperformance (3 year)	93	-40.24	100.96	-343	131
Benchmark: National Stock Exchange Index					
Underpricing	110	4.88	9.30	-12	37
Underperformance (1 year)	110	-26.26	56.65	-232	135
Underperformance (2 year)	97	-53.98	83.66	-295	134
Underperformance (3 year)	93	-65.17	107.04	-412	113
Benchmark: Index of the Listing Stock Echange					
Underpricing	110	5.07	9.24	-13	37
Underperformance (1 year)	110	-17.25	62.18	-267	119
Underperformance (2 year)	97	-41.13	95.12	-317	124
Underperformance (3 year)	93	-44.17	107.39	-405	141

the time of the IPO. A separate set of descriptive statistics is provided for *Underpricing* and *Underperformance* measured against each of the benchmarks used in the research. The statistics for *Underperformance* are provided for one, two and three years after the IPO date against each benchmark.

For the reason that some of the sample IPO dates are close to the end of the research period there are fewer observations in the sample the longer is the time horizon in which long run performance is measured. Specifically, one-year performance can be measured for 110 observations, two- and three-year performance can be measured for 97 and 93 observations, respectively.

Chapter 5

EMPIRICAL RESULTS

Underpricing evidence for the CIS case

It was established that Russian, Ukrainian and Kazakhstan IPO stocks during the period from 1996 to 2010 exhibited abnormal first day returns. In each of the cases for which underpricing was measured, means of the stock returns were statistically greater than means of the benchmark returns at 1% significance levels according to the t-statistics obtained. This result can be observed in Table 4.

The average magnitude of this underpricing phenomenon for the sample was in the range from 4.92% to 5.25% depending on the benchmark applied. This is a relatively moderate figure compared to the average underpricing patterns reported for the other countries (e.g., Ritter (2008) reported the average underpricing of 20% across the world). The volatility in the results is small since the average returns of the benchmark indexes are predictably close to zero for the one day period.

The 3.9%-4.1% range for the average underpricing that is recorded for the part of the sample consisting of the IPO firms originating from Russia is close to the results of the research conducted by Ritter (2007). In his research Ritter estimated underpricing of 4.2% for the sample of 40 Russian IPOs conducted on national and foreign exchanges during 1999-2006 period.

Table 4. Initial abnormal returns of the sample IPOs against different benchmarks

	National Stock Exchange Index			
	Total	Ukraine	Russia	Kazakhstan
Number of obs.	110	16	78	16
Ave. IPO stock return (%)	5.36	7.10	4.25	9.00
Ave. benchmark return (%)	0.43	0.27	0.36	0.92
t-stat of difference in means of returns	5.61	3.14	3.87	3.00
MAAR - Underpricing (%)	4.92	6.83	3.90	8.08
	Index of Stock Exchange of Listing			
	Total	Ukraine	Russia	Kazakhstan
Number of obs.	110	16	78	16
Ave. IPO stock return (%)	5.36	7.10	4.25	9.00
Ave. benchmark return (%)	0.22	-.27	0.25	0.61
t-stat of difference in means of returns	5.84	3.41	4.02	3.05
MAAR - Underpricing (%)	5.13	7.38	4.00	8.39
	MSCI EFM Central and Eastern Europe & CIS (CEEC)			
	Total	Ukraine	Russia	Kazakhstan
Number of obs.	110	16	78	16
Ave. IPO stock return (%)	5.36	7.11	4.25	9.00
Ave. benchmark return (%)	0.11	-0.33	0.15	0.33
t-stat of difference in means of returns	5.93	3.44	4.07	3.14
MAAR - Underpricing (%)	5.25	7.08	4.10	8.66

The interesting fact is that IPOs from the three considered countries are very similar in terms of the low degree of underpricing that they exhibit. The lowest underpricing within the range of 3.9%-4.1% was estimated for Russia. The Ukrainian and Kazakhstani IPOs are slightly more underpriced with the range for average underpricing of 6.4%-7.08% and 8.02%-8.66%, respectively. This suggests that similar factors may be playing the major role when the offering price of the IPO stocks is determined.

It can be presumed that owners of the CIS companies that are going public are relatively more greedy and short-sighted compared to their peers from other countries. The argumentation relies on the fact that owners are assumed to be willing to underprice their companies in order to please investors and establish a positive image of the company to get better terms on the capital markets in the future. Moreover, as per the "avoidance of lawsuits" underpricing theory it is suggested that owners agree to lower the price so as to avoid lawsuits from the investors in case a firm performs poorly in the stock market and there may be doubts that some of the information disclosed by the company during an IPO was truthful. Therefore, the low underpricing levels of CIS IPOs may suggest that company owners prefer to rip as much as possible in proceeds from an IPO and care less about the possible consequences of their company future performance.

For IPO investors these results suggest that CIS IPOs are not among those that offer its investors substantial first-day returns. The next section examines whether investors into CIS IPOs are compensated for such low initial returns with better long run-performance of their investment.

Underperformance evidence for the CIS case

The general conclusion that can be drawn from the Table 5 is that underperformance is indeed present in IPOs of all three countries measured against each of the benchmarks used and in each of the time periods studied. A closer look at the results reveals that the degree of underperformance for CIS IPO stocks is more severe when measured against the performance of the respective national index, as compared to the results obtained for benchmarking against the MSCI index or index of the listing exchange. This finding is consistent with the expectations as national indexes measure the performance of Russian, Ukrainian and Kazakhstan stock market, respectively. Since these are the emerging developing markets the degree of risk and expected return for them is higher compared to developed markets on which CIS firms conduct their IPOs. Therefore, adjustment of IPO stock returns with the performance of these indexes produces higher degree of underperformance.

Another interesting finding is that for the Russian companies underperformance for three years is almost the same as for two years, which suggests that stabilization in returns takes place as early as after the second year. For the Ukrainian and Kazakhstan companies this does not seem to be the case as the degree of underperformance continues to worsen throughout the studied period of three years. The evidence from the studies for other countries suggests that IPO performance tends to converge to market performance after 3-5 years from the IPO date.

Overall Russian firms exhibited the lowest degree of underperformance in each of the three studied periods. While firms from Kazakhstan were proven to be the worst long-run performers among the three countries under study.

Table 5. Long-run underperformance of the sample IPOs by country

AGGREGATE	1st year N= 110	2nd year N= 97	3rd year N= 66
National	-26.26%***	-54.00%***	-65.15%***
	(-4.86)	(-6.35)	-5.87
International	-17.30%***	-41.10%***	-44.19%***
	(-2.91)	(-4.25)	-3.96
MSCI Index	-20.95%***	-39.31%***	-40.25%***
	(-3.86)	(-4.56)	-3.84
RUSSIA	1st year N= 78	2nd year N= 70	3rd year N= 66
National	-20.46%***	-46.30%***	-47.34%***
	(-3.73)	(-4.80)	-4.35
International	-11.68%**	-38.48%***	-32.82%***
	(-2.05)	(-3.70)	-2.76
MSCI Index	-14.19%***	-37.01%***	-29.57%***
	(-2.63)	(-3.84)	-2.79
UKRAINE	1st year N= 16	2nd year N= 11	3rd year N= 11
National	-34.93%	-53.77%*	-100.02%**
	(-1.50)	(-1.70)	-2.11
International	-42.69%*	-40.51%	-68.06%
	(-1.74)	(-1.15)	-1.60
MSCI Index	-48.73%**	-41.80%	-64.12%
	(-2.29)	(-1.29)	-1.41
KAZAKHSTAN	1st year N= 16	2nd year N= 16	3rd year N= 16
National	-45.92%***	-87.86%***	-94.52%***
	(-4.12)	(-4.49)	(-3.72)
International	-19.28%	-53.00%*	-74.68%**
	(-1.13)	(-1.78)	(-2.41)
MSCI Index	-26.14%*	-47.69%**	-67.92%**
	(-1.74)	(-2.07)	(-2.33)

* - 10%, ** - 5%, *** - 1% significance level
t-statistics are given in parenthesis

Comparing the long-run performance of the CIS IPOs to the one of IPOs in other countries (results of studies are provided in the Table 2) it can be noticed that it is only Russian firms that exhibit underperformance falling in the range recorded by international studies. The performance of Ukrainian and Kazakhstani IPOs is on average much poorer.

The major reason of such poor long-run performance of CIS IPOs is the fact that most of them were conducted in 2004-2007 - the period of booming economy in all three countries under research. With investors having a great interest in taking part in this growth, some low quality firms were able to ride this positive investor's sentiment and use information asymmetry of the IPO process to their advantage. For the prospective CIS IPO endeavors this implies that investors would be more suspicious to these offerings and, thus, it would be difficult to conduct an extraordinarily successful IPO in terms of gains in proceeds.

Poor performance of the Ukrainian stocks in particular can also be partly attributed to the large share of the real estate firms that went public. Out of 16 Ukrainian firms under study 5 were from the real estate sector (In the entire sample 13 companies out of 110 were real estate firms). Their concentration gets even denser for the measurement of two and three year performance, when the number of observations for Ukraine drops to 11, while the number of real estate firms in the sample does not change. For most of these firms two and three year performance measurement matches the time of the global real estate crises, which makes the results particularly striking.

However, the issue here is the statistical significance of the results. As a whole the sample of the CIS IPOs under study reveals presence of underperformance, e.g. means of indexes' performance are statically greater than the means of the stocks returns at a high significance level. The same applies to the part of the sample

firms originating from Russia, which is consistent with expectations as they represent about 70% of the sample. At the same time, despite the severe degree of underperformance observed for the Ukrainian and Kazakhstani firms these results are not always statistically significant due to the limited number of observations for these countries. For the statistical significance of the specific underperformance results, please, refer to the Table 5.

Estimation results of long-run CIS IPO performance

The results of the regressions used to explain long-run performance of the CIS IPOs can be observed in the Tables 1, 2 and 3.

In compliance with the expectations the capitalization of an IPO company at the time of the offering is found to have a highly significant positive effect on the performance of the stock in one, two and three year prospective. However, this result becomes economically significant only for the case of large IPOs. Obtained coefficients imply that an IPO of a size greater than the average by a billion US dollars is expected to produce returns that are on average 3 percentage points better in the one year term after an IPO. As it was already mentioned results are significant for all three years under study, however, the gain in returns does not seem to increase over time.

The dummy for the real estate companies is statistically significant in all of the three years only in the case of benchmarking against MSCI index. Results start to become significant for the other two benchmarks starting from the second year. According to the obtained coefficients after two and three years real estate firms underperformed the sample IPOs with similar characteristics by on average 96% and 93%, respectively. This result is explained by the crises in the housing market.

Logarithm of percentage of free floating shares after an IPO has a highly significant statistical and economical effect on the first year performance with a positive sign. The coefficient is also significant and positive for the two and three year period when listing exchange index is used as a benchmark. This implies that the greater the share of the ownership given up by the owner is and the more public the company becomes, the better are its stock returns. This result counters the initial hypothesis. The potential explanation behind this result may be that with the increase in its free float the company may be getting more attention from the public and, therefore is more widely covered by the analysts. Such increased public supervision may force managers of the companies that have more shares in free float to exert more effort and, as a result, their companies provide better stock returns.

Another counterintuitive result obtained is the significant negative coefficient of the percentage of the new shares in the offering for the three year period when benchmarking against the MSCI index and national indexes. According to the observed coefficients increase in the new shares by one percentage point on average decreases returns by 0.6% in a three year term.

The coefficient results obtained for "outliers" variable is highly significant in the two and three year term for all benchmarks. The respective coefficients imply that in one and two years sample IPOs with the characteristics as those of the outliers would perform 190% and 148% better, respectively. The key characteristics in this case are the IPO size and market capitalization of the three outliers, which as regression results suggests has significant positive effect in all of the regressions.

The dummy for Ukrainian IPOs is not significant in any of the regressions, which implies that they do not underperform relative to the sample. At the same time dummy for Kazakhstan indicates that Kazakhstani IPOs significantly underperform the sample in all of the study periods, when performance is

measured against the national index. The possible explanation behind this fact is the rapid growth of the KASE index in the 2005-2007, which outpaced the growth of the Ukrainian and Russian exchange indexes.

Table 6. Estimation results for the first-year IPO underperformance

	Benchmarks		
VARIABLES	MSCI Index	National Index	Listing Exchange Index
Capitalization	0.00268***	0.00304***	0.00313***
	(3.39)	(3.26)	(3.32)
New_shares	-0.0178	-0.0719	0.117
	(-0.129)	(-0.52)	(0.81)
Age	0.0769	0.0193	0.179
	(0.41)	(0.10)	(0.90)
ln_Free_float	14.32***	13.51***	24.35***
	(2.78)	(2.99)	(3.77)
D_Real_Estate	-35.41**	-22.66	-24.95
	(-2.02)	(-1.25)	(-1.21)
Outliers	-177.5***	-188.1***	-202.4***
	(-3.32)	(-3.02)	(-2.95)
Ukraine	-28.39	-8.28	-33.66
	(-1.30)	(-0.34)	(-1.32)
Kazakhstan	-19.97	-31.57**	-20.06
	(-1.32)	(-2.51)	(-1.25)
U_pricing1	0.97		
	(1.57)		
U_pricing2		0.98	
		(1.39)	
U_pricing3			1.17
			(1.56)
Constant	-64.54***	-66.00***	-105.03***
	(-3.38)	(-3.89)	(-4.31)
Observations	110	110	110
R-squared	0.158	0.132	0.167

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7. Estimation results for the second-year IPO underperformance

	Benchmarks		
VARIABLES	MSCI Index	National Index	Listing Exchange Index
Capitalization	0.00233**	0.00255**	0.00272**
	(2.16)	(2.24)	(2.21)
New_shares	-0.0940	-0.151	0.137
	(-0.47)	(-0.72)	(0.63)
Age	-0.181	-0.240	-0.127
	(-0.64)	(-0.93)	(-0.42)
ln_Free_float	7.144	6.426	16.96**
	(1.14)	(0.99)	(2.42)
D_Real_Estate	-93.56**	-75.71*	-107.8**
	(-2.28)	(-1.87)	(-2.45)
Outliers	-138.8**	-139.3**	-164.9**
	(-2.35)	(-2.20)	(-2.39)
Ukraine	29.70	23.47	29.36
	(0.82)	(0.62)	(0.74)
Kazakhstan	-19.63	-48.60**	-27.98
	(-0.80)	(-2.18)	(-0.94)
U_pricing1	1.587		
	(1.57)		
U_pricing2		1.774	
		(1.46)	
U_pricing3			1.402
			(1.24)
Constant	-53.52***	-59.11***	-98.21***
	(-2.63)	(-2.80)	(-4.07)
Observations	97	97	97
R-squared	0.150	0.160	0.141

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 8. Estimation results for the third-year IPO underperformance

	Benchmarks		
VARIABLES	MSCI Index	National Index	Listing Exchange Index
Capitalization	0.00318*	0.00358*	0.00353*
	(1.76)	(1.757)	(1.95)
New_shares	-0.533**	-0.624**	-0.316
	(-2.13)	(-2.339)	(-1.04)
Age	0.0545	-0.0778	-0.1011
	(0.20)	(-0.269)	(-0.36)
ln_Free_float	13.44*	11.40	19.40**
	(1.74)	(1.392)	(2.22)
D_Real_Estate	-91.03**	-81.62**	-105.5***
	(-2.466)	(-2.076)	(-2.88)
Outliers	-153.12	-164.1	-183.1*
	(-1.37)	(-1.349)	(-1.70)
Ukraine	15.14	-2.557	11.77
	(0.39)	(-0.0627)	(0.32)
Kazakhstan	-36.78	-62.79*	-44.70
	(-1.14)	(-1.852)	(-1.24)
U_pricing1	0.1168		
	(0.08)		
U_pricing2		-0.112	
		(-0.0756)	
U_pricing3			-0.029
			(-0.01)
Constant	-38.86	-43.27*	-68.47**
	(-1.59)	(-1.723)	(-2.45)
Observations	93	93	93
R-squared	0.201	0.225	0.172

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

CONCLUSIONS

This paper estimates the degree of underpricing and underperformance for IPOs originating from Russia, Ukraine and Kazakhstan during the period from 1996 to 2010. It also determines the factors explaining the performance of these stocks in the one, two and three year term after the date of an IPO.

It was established that underperformance is present in the sample of studied IPOs and this result is applicable to all three countries in the study. However, the degree of this phenomenon is relatively moderate as compared to the results obtained in the studies for other countries. This suggests that owners of the CIS companies that are going public are relatively short-sighted as they appear to be less caring about the benefits of underpricing and tend to rip as much in the IPO proceeds as possible.

Another result of this study is the evidence of underperformance for all three countries measured against each of the benchmarks used and in each of the time periods studied. The degree of underperformance for CIS IPO stocks is the most severe when measured against the performance of the respective national index, which is in compliance with the expectations. Amongst the three countries in the study the least degree of underperfomance was documented for Russian IPOs, while IPOs from Kazakhstan turned out to be the worst long-run performers. However, results are not always statistically significant for the case of Ukraine and Kazakhstan due to the limited number of observations.

The regression analysis of the factors influencing long-run performance revealed that in the case of CIS, capitalization and the percentage of free floating shares after the issue have a positive effect on long run performance. The percentage of new shares in the issue was shown to have a negative effect. Also the companies

from real estate sector and outliers turned out to underperform the rest of the sample.

This paper has contributed to the IPO literature by documenting for the case of CIS countries such widely studied in international literature phenomena as IPO underpricing and underperformance. The paper provides the comparison in the patterns of the above-mentioned phenomena across the three countries in the study as well as comparison of the results to the international evidence. It also provides the results for variability in the estimates of underpricing and underperformance against a set of benchmarks relevant for a diverse circle of investors.

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