

# Statistical Analysis of Indexes of Capitalization of the Ukrainian Firms: an Empirical Research

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**Abstract.** The document considers the performance and effectiveness of Ukrainian companies on the Warsaw Stock Exchange. With this end in view, the document examines the following issues: raising capital for investment, eliminating barriers for the Polish investors, capitalizing product reputation on the market, increasing investor recognition of companies, enhancing the corporate image. The document also analyses aspects of familiarity with local financial community, commitment to corporate governance standards, and the possibility of M&A. These figures are to indicate the status of Ukrainian companies on the Warsaw Stock Exchange.

**Keywords.** IPO, Warsaw Stock Exchange, Wig-Ukraine.

**Key Terms.** Industry, Management, Market, MathematicalModel, Research.

## 1. Introduction

Warsaw Stock Exchange is the largest national financial instruments exchange in the region of Central and Eastern Europe and one of the fastest-growing exchanges in Europe. The Group offers a wide range of products and services within its trading markets of equity, derivative, debt and structured products, electricity, natural gas, property rights, as well as clearing of transactions, operation of the Register of Certificates of Origin of electricity and sale of market data.

WSE started operation in 1991 as a company held 100% by the State Treasury. In 2010, the State Treasury arranged a public offering of WSE shares; as a result, shares of the Exchange were newly listed on the WSE Main Market on 9 November 2010. For instance, there are 471 companies represented at the WSE, including 51 foreign companies. Total market value of all companies is about 290 bl. Euro.

Poland's stock exchange market is growing stronger and becomes more international day by day. Its evolution is supported by the active marketing policy of the Warsaw Stock Exchange working to promote the entire infrastructure of Poland's capital market. These efforts have produced tangible results.

The Warsaw Stock Exchange conducts trading in financial instruments on three markets:

The Main List has been in operation since 16 April 1991. This market is supervised by the Polish Financial Supervision Authority and notified to the European Commission as a regulated market. The following securities and financial instruments are traded here: equities, bonds, pre-emptive rights, rights to shares, investment certificates, structured instruments, ETF and derivatives, i.e. futures contracts, options and index participation units.

- NewConnect is a market organised and maintained by the WSE as an alternative trading system. It was designed for startups and developing companies, especially from the sector of new technologies. NewConnect was launched on 30 August 2007. Instruments which may be traded under this alternative trading system include equities, rights to shares, pre-emptive rights, depository receipts, as well as other equity based instruments.
- Catalyst is a debt instruments market for municipal, corporate and mortgage bonds. Founded on 30 September 2009, it consists of two trading platforms organised by the WSE as a regulated market and as an alternative trading system (ATS) for retail customers, and two analogous markets operated by BondSpot and designed for wholesale clients.

## 2. Problem Statements

If a company wants to be listed on the stock exchange, it should complete Initial public offering (IPO).<sup>1</sup>

Initial public offering (IPO) or stock market launch is a type of public offering in which shares of stock in a company usually are sold to institutional investors (that price the company receives from the institutional investors is the IPO price) that in turn sell to the general public, on a securities exchange, for the first time.

IPO benefits:

- Access to capital to fund growth

Public placement of shares on a stock exchange allows the company to attract capital to fund both organic growth (modernization and upgrade of production facilities, implementation of capital-intensive projects) and acquisitive expansion. If retained earnings and debt funding are insufficient, IPO becomes one of the most realistic and convenient ways to secure the continuing growth of the business. It provides access to a massive, timeless pool of capital and boosts the investment credibility of the business.

- Creation of liquidity and potential exit for the current owners

Formation of a public market for the company's shares at fair price creates liquidity and provides an opportunity to sell the shares promptly with minimal transactional costs. The private owners of the company can dispose of their stakes in the business both during an IPO (this route is often taken by the minority financial

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<sup>1</sup> IPO calendar, <http://www.fixygen.ua/calendar/ipo/>

investors such as venture or private capital funds) and at a later stage (this is often preferred by the majority shareholders).

- Maximum value of the company

Normally, an IPO is an offer to a large number of institutional and retail investors to become shareholders of the company. The very multitude of large investors and their confidence in the liquidity of their investment in a public entity assure the current owners of a private company about achieving the maximum possible valuation of the business at the time of an IPO or afterwards.

- Enhancement of the company's public profile

Listing on a recognized stock exchange means that the business will receive wide media coverage, usually a very favorable one, thus increasing the company's visibility and recognition of its products and services. The company's activities will also be reflected in the reports by professional financial analysts. Such public profile supports liquidity of the shares and contributes to the expansion of the business contacts. It also helps to increase confidence among the company's business partners.

- Improvement in debt finance terms

For domestic (Ukrainian or other CIS country-based) financial institutions – used to working with the low-transparency businesses and often inadequate financial reporting – a company listed on a recognized stock exchange becomes a desirable and reliable partner. Banks are often ready to extend loans to public companies in larger amounts, under smaller collateral, for longer maturities and with lower interest rates. Even the largest and most prestigious banking institutions are keen to work with public companies – whose transparency and corporate governance serve as additional factors of confidence for banks and other suppliers of credit.

- Extra assurances for partners, suppliers and clients

Partners and contractors of a public company feel more confident about its financial state and organizational capabilities as compared to those of a non-transparent private business. Partners take additional comfort in the fact that the public company has gone through rigorous legal, financial and corporate due diligences – all of which are required for a successful completion of an IPO. Confidence among partners and contractors is a sound foundation for stable and predictable business relations with the public company, and allows the latter to obtain additional leverage in negotiating better terms for doing business.

- Enhanced loyalty of key personnel

Publicly available information about the share price of a public company allows development of employee motivation schemes based on partial remuneration of staff in the form of participation in the equity capital (for example, share options). Equity-based incentive schemes stimulate the key personnel to become more efficient in their work in order to support the company's growth rates and profitable development – which in turn increase the operational and financial efficiency of the company and its market value.

- Superior efficiency of the business

Conduct of various due diligences during the IPO process requires a thorough and comprehensive analysis of the company's business model. During the IPO implementation process, certain internal changes take place, including modification of

the organizational structure; selection of the key personnel and delegation of responsibilities; improvement of internal reporting and controls; as well as critical evaluation of the efficiency of the entire business. Normally, such extensive internal efforts result in significant improvements of the communication system, management and controls; they also help eliminate any previously hidden shortcomings in the internal functioning of the business.

The IPO process can be very complicated. There are certain steps you must take along the way. These steps will help insure that your IPO is successful.

- Planning for the IPO Process

You need to determine at the beginning whether it's a good time for an IPO. Choosing the ideal time to go public is very important. Plan in great detail what you hope to accomplish. Examine your financial needs and wants.

It's helpful for a business to act like a public company even before it goes public. This can be done a couple of years in advance of the IPO. Develop a business plan and prepare financial statements.

- Choosing Underwriters

Most companies use underwriters to help them with IPOs. Choosing the right underwriters is key to having a successful offering. They're usually the ones responsible for buying and selling the securities to the public. They're also responsible for investigating your business to verify the financial information given to the investors. You should select the underwriters at least a few months before the IPO date.

- Filing a Prospectus

Your business must file a registration statement with the US Securities and Exchange Commission (SEC). This statement contains detailed information about the offering. It also includes information about the business, its financial history and its future plans.

The registration statement becomes the preliminary prospectus once it's filed with the SEC. A prospectus is a legal document explaining the securities offered to the public. The preliminary prospectus is also called the red herring. It's called this because red ink is used on the front page to indicate certain information may change.

The SEC will examine the registration statement during a "cooling off" period. It informs the business of any necessary changes. The statement becomes the official prospectus once any necessary amendments are made. The prospectus can be used by the public to help them determine whether they want to purchase the securities for sale.

- IPO Promotion

A business going public has to market the IPO. Representatives from the company and underwriters go on a "road show" around the country. They make numerous presentations to potential investors. Typical stops include New York, Chicago, Boston, Los Angeles and San Francisco. Even international trips may be set up for overseas investors.

- Final Offering Price and Amount

Choosing the final offering price and the amount of securities to be sold are very important decisions. Market conditions and the expected demand for the securities

need to be examined closely. These final decisions are usually made right before the offering.

- Selling on the Stock Market

The IPO is normally declared effective a few days after the final prospectus is received by the potential investors. This declaration is usually done after the stock market has closed. The securities will then be available for trade the next day. The IPO will hopefully be successful and provide new capital for the business for their present and future plans.

Taking into consideration the benefits of being involved in the Warsaw Stock Exchange activities, many Ukrainian companies want to be listed. However, in order to be listed at the WSE, a company is obliged to meet special requirements as follows:

1. Only a joint stock company may be an issuer of shares listed on the WSE. This does not bar entities operating under any other legal form from listing, but their owners need to transform them into joint stock companies or establish joint stock companies and transfer the entities assets thereto.

2. As a next step, the General Shareholders Meeting should adopt a resolution approving a public offer of shares and an application for admission of the shares to trading on the regulated market.

3. The decision to apply for admission to trading in the regulated market may require the preparation of a relevant information document (issue prospectus or information memorandum) so the company will need to work with:

- an auditor who will audit the company's financial statements and convert them into a format comparable year to year;
- a brokerage house which will offer the company's shares in a public offer.

Depending on the issuer's individual needs, the company may need to hire legal and financial advisors. The contents of the issue prospectus are laid down in the Commission Regulation (EC) No. 809/2004 of 29 April 2004 as regards information contained in prospectuses.

4. Next, the company will need to submit the working draft of the issue prospectus to the Polish Financial Supervision Authority (KNF). KNF may communicate its comments, and once the company has accommodated those in the final draft of the issue prospectus, KNF will decide whether to approve the prospectus.

5. Before opening the public offer, the issuer will need to execute an agreement with the National Depository for Securities (KDPW) whereby the securities subject to the public offer will be registered by the Depository.

6. The public offer may now proceed. Before allocated shares of a new issue are registered, rights to shares may be traded on the WSE.<sup>2</sup>

7. Once the offer is closed, the company will submit an application for the admission of shares (and possibly also rights to shares) to stock exchange trading on the main or the parallel market. The WSE Management Board will examine the application. The application must include, among others, the final draft of the issue prospectus accommodating all recommendations made by the KNF.

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<sup>2</sup> WSE, <http://www.ipowse.com.ua/about/>

8. Once all shares introduced to trading are deposited with KDPW, the public offer is closed, and the shares of the new issue registered by the court, the company will file with the WSE Management Board an application for the introduction of shares to trading on the main or the parallel market. The WSE Management Board will indicate the trading system and the date of the first trading session.

Some Ukrainian companies have already been listed at the regular market of the WSE. There are some descriptions of such companies:

Kernel is a leading diversified agribusiness company in the Black Sea region listed on the Warsaw Stock Exchange. Handling about 6 million tons of agricultural commodities per year, Kernel supplies international markets with grain and sunflower oil produced in Ukraine and Russia. The production assets extend from black soil farmland to oilseed crushing plants supported with essential agricultural infrastructure including silos and deep-water export terminals. 2007 marked also a new stage in the development as Kernel became a publicly listed company: listed Kernel on the Warsaw Stock Exchange in November 2007 and new shareholders entered the capital of the Company to participate in the growth story.<sup>3</sup>

Founded in 1993, “Astarta–Kyiv” is a vertically integrated agro-industrial holding specializing in sugar and agricultural production. It has proven to be a growing, transparent company, as well as a reliable partner and supplier. Implementing a strategy of vertical integration, ASTARTA created a fully integrated production cycle of sugar from growing the beet to sugar production and sales. Growing sugar beets lowers dependence on the external supply of sugar beets, lowers the cost of produced sugar, and guarantees constant manufacturing and the highest possible yield and quality. In August 2006, ASTARTA’s shares are listed on the Warsaw Stock Exchange.

Group of Companies «Ovostar Union» is one of Ukrainian leading agro-industrial companies, entering TOP 3 Ukrainian egg producers. The history maintains 14 years of experience, leadership and innovations. The main advantage is vertically integrated business organization structure, providing accurate product quality control at any production stage. Each enterprise of GC «Ovostar Union» is an integral part of whole business, important and high-grade link, performing its obligations effectively, and in this way ensuring the common great result. It’s the conformity of all Company activity vectors determining products guaranteed quality and in general high business profits. In 2011 GC «Ovostar Union» has debuted on the Warsaw Stock Exchange and attracted 93 million zlotys in an initial public offering (IPO). It has been using to carry out the group’s investment program. 1.5 million shares were placed (25% of the capital) at a price of 62 zlotys per share. The price is equal to the maximum price.<sup>4</sup>

Industrial Milk Company (IMC) is an integrated agricultural business operating in Ukraine. In May 2011 IMC conducted IPO on Warsaw Stock Exchange.

The main areas of IMC’s activities are:

- cultivation of grain & oilseeds crops, potato production
- storage and processing of grain & oilseeds crops

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<sup>3</sup> Kernel, <http://www.kernel.ua/en/>

<sup>4</sup> Ovostar, <http://www.ovostar.ua/ru/>

- dairy farming

IMC is among Ukraine's top-10 agricultural companies (source of ratings: AgriSurvey, "The largest agro holdings in Ukraine", 2014, based on results of year 2013). In May, 2011 the company completed IPO on Warsaw Stock Exchange, IMC raised US\$ 24,4 mln to finance the development of the company.<sup>5</sup>

Milkiland is an international diversified dairy producer with the core operations in the CIS and EU. The Group's total annual milk processing capacity exceeds 1 million tons. The company is proud to produce natural dairy from the best milk: a wide range of fresh dairy, different types of cheese, and butter to satisfy the consumers in their everyday needs for healthy and tasty foods. Milkiland's dry dairy products are exported to over 30 countries. The international Dobryana brand is popular among cheese and dairy consumers in Ukraine, Russia and other CIS countries. Ostankinskoye is a traditional brand for whole-milk products produced by Ostankino Dairy Combine, well known by Moscow consumers. Fresh dairy under Ostrowia brand is also well known in Poland. 21.48% of the shares of Milkiland N.V. are in the free float at the Warsaw Stock Exchange.<sup>6</sup>

KDM Shipping is one of the leaders of the Ukrainian shipping industry, primarily involved in the niche segment of dry bulk river-sea freight in the Black, Azov and Mediterranean Sea regions. The Group's cargo fleet consists of 10 river-sea, dry cargo vessels of total 29,673 DWT, which due to their shallow draft can access major river and sea ports in Black and Azov Sea regions. The Group also provides passenger river transport services in the Kiev and other regions of Ukraine (operating the fleet of 8 passenger river vessels), as well as ship repair services at its own shipyard located in the city of Kherson. According to International Economic Rating "League of the Bests" in 2012, the Group is ranked as # 1 in river activity and 3rd in maritime activity in Ukraine.<sup>7</sup> The Group has developed a vertically integrated business model. The Group's main activity of dry-bulk shipping is supported by its own ship repair yard, its own ship agency in selected ports as well as its own crewing department. Such business model allows the Group to benefit from certain cost efficiencies and sustain competitive advantages.

Coal Energy S.A. was incorporated in the Grand Duchy of Luxembourg and has been listed on the Warsaw Stock Exchange in Poland since 08 August 2011. Coal Energy S.A. is a holding company for a group of 12 companies operating in the coal industry in Ukraine which rank the Company as the 3rd largest in terms of coal deposits and the 4th largest in terms of extraction volumes private coal mining enterprise in the country based on the calendar year 2011 data (hereinafter – "the Group" and/or "Coal Energy").

Principal business activities of Coal Energy are mining, beneficiation and sales of thermal and coking coals as well as dual purposes coal. Companies of the Group are directly cooperating with all the largest heat and power generation plants and metallurgic plants in Ukraine. Due to its favorable geographical location and wide

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<sup>5</sup> Industrial Milk Company, <http://www.imcagro.com.ua/ru/>

<sup>6</sup> Milkiland, <http://www.milkiland.nl/ru>

<sup>7</sup> KDM Shipping, <http://kdmshipping.com/>

products' palette Coal Energy is able to export produced thermal coal to power producing stations in Turkey, Moldova, Bulgaria, Slovakia and other countries where the Group has established contacts with the largest power generations.

KSG Agro is one of the most dynamically developing agricultural groups in Ukraine. We take innovative approach for our key business philosophy. The search of non-standard approaches and creative decisions requires professional experience and passion for a native land. Our main values are people and land. Everything we produce is made by people and for people. That is why we highly appreciate your trust and consider it a key factor of the Group's success. Trust is impossible without responsibility. Providing an example of long-term and prosperous cooperation among the state, society, and agricultural business, we create the foundation for leadership.

Nowadays the Group gained a lot to be proud of; however we still strive for more. Highly-profitable agricultural industry with a high level of diversification and vertical integration gives growth prospects and sense of security. We have got the main factor for this purpose which is our team of like-minded professionals. The core business of the Group is cultivation of land and production of agricultural crops. Complex approaches to farming and focus on intensive development of business ensure high profitability and also create the conditions facilitating high yields.

The Group focuses on the following business directions:

- Crop production
- Vegetables production
- Fruits production
- Food processing business
- Supplies of food to retail networks

### 3. Results

The full list of Ukrainian companies listed at the Warsaw Stock Exchange:

**Table 1.** Ukrainian companies at the WSE

Name of the company	Date of IPO	The percentage of capitalization	Sum of the capitalization
Astarta Kiev	August 2006	20% of shares	23,7 bl. Euro
Kernel Holding	November 2007	37,98% of shares	136,5 bl. Euro
Agroton public limited	November 2010	26,2% of shares	38,25 bl. Euro
Milikiland	December 2010	22,4% of shares	60 bl. Euro
Sadovaya Group	December 2010	25% of shares	23,15 bl. Euro
Industrial Milk Copmany	May 2011	23,9% of shares	20,7 bl. Euro
KSG Agro	May 2011	33% of shares	27 bl. Euro
Westa	June 2011	25% of shares	32 bl. Euro
Ovostar Union N.V	June 2011	25% of shares	22,2 bl. Euro



Coal Energy	August 2011	25% of shares	56 bl. Euro
KDM Shipping	August 2012	11 % of shares	6,3 bl. Euro

WIG-Ukraine is the second national index calculated by WSE. Its portfolio includes companies listed on the Warsaw Stock Exchange, where a company or head office is located in Ukraine, or whose business is conducted to the greatest extent in this country. It has been calculated since May 4, 2011. The historical values were recalculated since December 31, 2010 (the base date). The initial value of the index was 1000 points. WIG-Ukraine is a total return index and thus when it is calculated it accounts for both prices of underlying shares and dividend and subscription rights income.<sup>8</sup>

Composition of WIG-Ukraine  
(as for 24 February 2015)

**Table 2.** The composition of WIG-Ukraine

Instrument	ISIN	Share	Market value of shares (PLN)	Quota (%)
KERNEL	LU0327357389	9,509,000	286,601,260	37.877
ASTARTA	NL0000686509	9,253,000	227,346,210	30.046
OVOSTAR	NL0009805613	1,725,000	122,233,500	16.154
IMCOMPANY	LU0607203980	9,809,000	63,169,960	8.348
MILKILAND	NL0009508712	8,276,000	26,152,160	3.456
KDMSHIPNG	CY0102492119	3,329,000	18,775,560	2.481
COALENERG	LU0646112838	11,252,000	6,638,680	0.877
KSGAGRO	LU0611262873	5,093,000	5,755,090	0.761

$$WIG - Ukraine = \frac{M(t)}{M(0) * K(t)} * 100\% \quad (1)$$

M(t)-capitalisation of index portfolio at session "t"

M(0)-capitalisation of index portfolio at base date

K(t)-adjustment coefficient for session "t"

Now, using application package of MS Excel, we shall determine the effect of Ukrainian companies to index. The following table draws up the results:

<sup>8</sup> Wig-Ukraine, [http://www.gpw.pl/opis\\_indeksu\\_WIG-Ukraine\\_ru](http://www.gpw.pl/opis_indeksu_WIG-Ukraine_ru)

**Table 3.** The effect of Ukrainian companies to index

<b>b8</b>	<b>b7</b>	<b>b6</b>	<b>b5</b>	<b>b4</b>	<b>b3</b>	<b>b2</b>	<b>b1</b>	<b>b0</b>
1.47	-1.70	0.889	2.69	1.38	0.385	2.69	4.96	6.08
0.15	0.996	0.042	0.22	0.159	0.052	0.028	0.039	3.42
t(b8)	t(b7)	t(b6)	t(b5)	t(b4)	t(b3)	t(b2)	t(b1)	t(b0)
9.99	1.71	21.01	12.26	8.69	7.33	94.799	126.43	1.78
<b>Signi- ficant</b>	Insigni- ficant	<b>Signi- ficant</b>	<b>Signi- ficant</b>	<b>Signi- ficant</b>	<b>Signi- ficant</b>	<b>Signi- ficant</b>	<b>Signi- ficant</b>	Insigni- ficant
tkr	1.97							

Obtained results in the table are equal to the following equation multiple linear regressions:

$$y=6.079+4.956*X1+2.686*X2+0.385*X3+1.379*X4+2.693*X5+0.889*X6-1.705*X7+1.473*X8 \quad (2)$$

We shall interpret it as following:

- ▶ 6.079 – performs, that after zero changes of prices of shares of all companies индекс зроче the index shall be increased by 6%
- ▶ 4.956– performs, that after 1 % increase of prices of shares of Kernel Holding the index shall be increased by 5%
- ▶ 2.686– performs, that after 1 % increase of prices of shares of Astarta Kiev the index shall be increased by 2,7%
- ▶ 0.385– performs, that after 1 % increase of prices of shares of Ovostar Union the index shall be increased by 0,38%
- ▶ 1.379– performs, that after 1 % increase of prices of shares of Industrial Milk Co. the index shall be increased by 1,34%
- ▶ 2.693– performs, that after 1 % increase of prices of shares of Milkiland the index shall be increased by 2,7%
- ▶ 0.889– performs, that after 1 % increase of prices of shares of KDM Shipping Public Ltd the index shall be increased by 0,9%
- ▶ 1.705– performs, that after 1 % increase of prices of shares of Coal Energy the index shall be increased by 1,7%
- ▶ 1.473– performs, that after 1 % increase of prices of shares of KSG Agro the index shall be increased by 1,5%

Application of Student's t-Tests shows, that almost all companies have an effect on the index. Though, we can point out two of them, namely Kernel Holding, Astarta Kiev, having the most considerable effect on the index. Their shares account for the most considerable percentage, in particular for 67% of Wig-Ukraine index. More importantly, Kernel Holding and Astarta Kiev are the first companies to be listed at the regular market. They have already adapted to the market, having a great superiority as compared to other Ukrainian companies. Moreover, Kernel Holding is also included in composition of WIG30 index which is based on the value of portfolio of 30 major and most liquid companies on the WSE Main List. Both companies are engaged in ag-

gricultural business, which is the most distinctive feature of the Ukrainian companies, involved in international business activity.

#### **4. Conclusion**

The following results were obtained in the course of this research:

- The primary reason (motive) for the Ukrainian companies to be listed at WSE is the possibility of acquiring access to the capital;
- The reputation and credibility of the stock company (market) provides the Ukrainian companies with the possibility of finding new investors or potential financial partners;
- As of today, there are 11 Ukrainian companies at WSE and 2 companies at the NewConnect market;
- More than two billions Euros were attracted by the Ukrainian companies;
- In fact, Warsaw Stock Exchange is the most effective way of entry into the international market for the Ukrainian companies, which, in the meantime, enables the companies to strengthen their positions on the market, raise capital and gain investments in the future.

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