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## Business Valuation and Equity Management When Entering the IPO Market

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**Abstract:**

*The economic independence of any state is the basis of the welfare of the country's population. Starting from 2011, the Republic of Kazakhstan has been working on the financial stabilization of its core assets by transferring leading national companies to an IPO. Formation and development of the IPO market requires conducting various economic analyses and determining the effectiveness of innovative design solutions involved in this direction.*

*One of such activities is the corporate asset valuation of the enterprise entering the IPO market. As a rule, each asset has its own internal base value, which is estimated depending on the character of cash flows, the rate of their growth and the degree of future risk. As a result of the evaluation, the enterprise will have an idea of the life cycle of the project being invested, a pattern of cash flow will be revealed and a discount rate will be determined in order to determine the present value.*

*At the initial stage of the IPO market formation in Kazakhstan, major national companies with long life cycles possessing a sufficient number of assets were identified as the main participants of the project. To participate in an IPO one should know the basic rules of investment, trade mechanisms and features, as well as the law regulating these issues.*

**Keywords:** *IPO market, equities management, rules of investment, trade mechanisms.*

**JEL Codes:** *O3.*

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## **1. Introduction**

One of the main conditions for entering the IPO market is an amended business valuation. When determining the company's value, it is desirable to estimate the full enterprise value and equity (Asaul *et al.*, 2014). The whole enterprise value is calculated by discounting the expected cash flows for the entire firm after paying all transaction costs and taxes, but before paying off all the debt obligations (Yarunina, 2017). These cash flows are discounted using the weighted average capital cost (WACC) (Vashakmadze, 2013). When it comes to the company's shareholder value, it is calculated by discounting the expected cash flows belonging to the company's shareholders. Once debts are repaid, the remaining cash flows are discounted with the value equity capital (Grima and Caruana, 2017; Grima *et al.*, 2016; Pontoh, 2017).

Generally, the value of the company's total cost exceeds its shareholder value.

## **2. Methodology**

To determine the shareholder value, one can apply a certain model:

$$\text{Equity} = \text{Enterprise Value} - \text{Net Debt} + \text{Available Funds} \pm \text{Minority Interest}$$

The enterprise value is calculated as the present value of all future cash flows generated by the business. When negotiating a transaction, negotiations often focus on the enterprise value. At the same time, such terms as "enterprise value" and "enterprise value without debt" are used.

The net debt value is equal to the value of all cash flows that belong to the company's creditors. The amount of net debt is calculated either from the balance sheet value (bank loans), or the market value of debt obligations. In addition, the net debt value includes the cost of preferred stock of the company.

The cash value is equal to the value of available funds (or their equivalents) plus the value of highly liquid securities on the company balance sheet. The cash value can also be measured at balance sheet value or at market value.

The cost of a minority interest refers to the situation when the company owns less than 100% of the shares of subsidiaries, but provides consolidated financial statements. In this case, the share of minority shareholders in statements is deducted from the enterprise value. In some cases, the company itself may own minority shares in other companies. In these cases, the value of a minority share is added to the enterprise value (Gorbunova, 2016).

As a result, the equity of an enterprise is equal to the cash flows value that belong only to the company's shareholders (shareowners and owners of financial instruments tied to shares).

In public companies, the equity is equal to the value of all issued common equity, as well as warrants, options and debt convertible into shares.

An example of the real share price evaluation based on the company's shareholder value is presented in Table 1. For this evaluation, investment bank analysts made these calculations based on the oil-producing company CEP International Petroleum preparation for the IPO (Evaluation of the company's IPO value, 2016).

**Table 1.** Shares price evaluation during IPO

	Scenario 1	Scenario 2
Pre-money valuation	40 700 000	54 400 000
Pre-IPO discount	20%	20%
Cash flow from implementation choices, \$ million	14 786 348	14 786 348
Available funds	2 000 000	2 000 000
Funds from the Korean National Petroleum Corporation	10 000 000	10 000 000
Enterprise value, EV	59 346 348	70 306 348

Number of shares	50 903 629	50 903 629
EV per share, dollars	1,17	1,38
EV per share, pound sterling	0,67	0,79

Fresh funds attracted during IPO	£15 000 000	£15 000 000
Number of new shares to sell at IPO	22 515 627	19 006 684
Number of shares after IPO	73 419 256	69 909 313
Market capitalization in \$ after IPO	85 596 348	96 556 348
Market capitalization in £ after IPO	48 912 199	55 175 056

As a rule, in connection with a commercial secret, companies do not inform the shareholders of the exact timing and amount of cash flows received, so that the process of determining the shareholder value of the company is initially associated with significant uncertainty. However, this uncertainty does not cancel the basic principle of the valuation: the asset value is equal to the present value of its future

cash flows. The difficulties associated with the creation of a reliable model of discounted cash flows reflect the actual uncertainties in corporate cash flows.

Setting shares price in an IPO is one of the most unexplored issues in the theory of modern corporate finance. At the pre-exchange stage, when the company's shares do not yet have market quotes, to which investors can orient in their valuation, shares price is determined through investors negotiations with the company's owners. In this case, the issue of the company price (and its shares) is decided simultaneously with the issue of the proportion of investors in the authorized capital and the amount of investment. Thus, the company's pre-money valuation is the enterprise value before investing. Post-money valuation is pre-money valuation plus received investments value. For a public company, its post-money valuation is market value or capitalization.

As the parties agree on what share of equity capital the investor will receive in exchange for investment, it is more convenient to start calculating with post-money valuation. For example, if the investor agrees to receive 1/3 of the share capital of the company in exchange for investing \$1 million, then the post-money valuation of the business is \$3 million (\$1 x 3), and the pre-money valuation is \$2 million (\$3 million, \$1 million investment). After determining the enterprise value, the stock price is calculated. If the company already has 500,000 declared common shares in the pre-money phase, then the investor should receive 250,000 additional shares in order to eventually acquire 1/3 of the share capital. Accordingly, the cost of one share is \$4 (\$1 million / 250 thousand).

By using the known methods of securities calculation (Kosorukova, Sekachev and Shuklina, 2015), the authors identified several basic models for calculating the pre- and post-money valuation of the company and the share price:

*Pre-money valuation = Number of old shares x New share price.*

*Pre-money valuation = Post-money valuation - Investments.*

*Post-money valuation = Post-money valuation + Investments.*

*Post-money valuation = Investments / Interest of received share in capital.*

*Post-money valuation = Total number of new and old shares x Share price.*

*Share price = Investments / Number of newly issued shares.*

*Share price = Pre-money valuation / Number of fully diluted shares (shares, options and warrants).*

For example, the founders of company "A" received 6 million shares, investing \$50 thousand in its capital. To develop the business, additional funds are needed. Investors agreed to invest \$2 million in exchange for a 40% block of shares.

**Table 2.** Example of share price calculation

Shareholders	Shares type	Number of share, mln	Investment, \$ mln	Share price, \$
Founders	Common	6	0,05	0,0083
Investor	Convertible preferred	4	2	0,50

Thus, as a result of the calculations, share prices are determined at different stages.

*Post-money valuation = Investments / Interest of received share in capital = \$2 million / 40% = \$5 million.*

*Share price = Investments / Number of new shares = \$2 million / 4 million shares = \$0.50 per share.*

*Post-money valuation = Number of new and old shares x Share price = 10 million shares x \$0.50 = \$5 million*

*Pre-money valuation = Number of old shares x Price of one share = 5 million shares x \$0.50 = \$3 million*

*Pre-money valuation = Post-money valuation - Investments = \$5 million - \$2 million = \$3 million.*

*Price increase = the new round's share price / the previous round's share price = \$0.50 / \$0.083 = 60 times.*

*Price increase = the new round's pre-money valuation / the previous round's post-money valuation = \$3 million / \$50 thousand = 60 times.*

The enterprise value at the earliest stage of development is most often calculated using the venture capital method (Nesterenko, 2012). This method is based on calculating the hypothetical final value of the company at the end of the investment horizon (usually five years). If the company plans to enter the exchange and conduct an IPO as a long-term strategic objective, then the investment horizon coincides with the time of the IPO, and the final value is equal to the offer price or the expected capitalization. Then the obtained value of the final cost (offer price) of the company is discounted in the current period with the application of the target rate of domestic return.

The target rate of the company's domestic return at the initial stage of development is 80% per year. The advantages of calculating the enterprise value using the venture capital method are that it avoids the issue of negative cash flows from young companies and takes into account the projected dilution of the shares in the capital with additional emission.

Firstly, the business valuation by the venture capital method is based on the calculation of the company's final value (offer price).

The most popular method for determining the final value of a company is comparison with analogical companies (Busov, Zemlyansky and Polyakov, 2013). For comparison, several mature and liquid companies are selected, whose characteristics correspond to the profile that the young company seeks. The net earnings per share (P/S) projected by the time of the IPO is multiplied by the average price-earnings ratio (P/E) for comparable peers. At the same time, the company's business plan should indicate how and in what timeframe it plans to achieve the goal. The choice of analogical firms can have a significant impact on the valuation. Therefore, one group of comparable companies can more suit investors, and the other – the company's management.

Let us assume that the projected net earnings of company A in seven years (the planned time to IPO) is \$20 million, and the price-earnings ratio (P/E) for comparable peers is 15. Hence, the company's projected final value in seven years shall be \$300 million.

Secondly, in order to determine the share of equity capital required for the investor, it is necessary to divide the amount of investments into the given final value of the company. Therefore, if the company's "A" target rate of domestic return is 50% per year, its reduced final value will be \$17.5 million ( $\$300 \text{ million} / (1 + 0.50)$ ). The investor plans to invest \$5 million. Hence his share in the capital is 28.5% ( $\$5 \text{ million} / \$17.5 \text{ million}$ ).

Thirdly, in order to determine the number of necessary new shares for the investor and the share price, the number of new shares for a venture investor needs to be calculated by the model:

*Share in capital = Number of new shares / (Number of new shares + Number of old shares)*

Company "A" currently owns 500 thousand shares. For the investor to receive 28.5% in the company's capital, the cumulative number of shares should be 700 thousand ( $500 \text{ thousand} / 71.5\%$ ). 200 thousand shares out of this number must belong to the investor. Thus, the price of one share will be \$25 per share ( $\$5 \text{ million} / 200 \text{ thousand}$ ).

Fourthly, the pre-money valuation of company "A" is \$12.5 million (500 thousand shares x \$25 per share). Post-money valuation is \$17.5 million (700 thousand shares x \$25 per share).

Fifthly, in order to forecast the retention rate, most young companies go through several rounds of financing until the IPO, for which an additional issue of shares is carried out, which is often placed on the stock exchange. Future investors will receive a certain share in the share capital and dilute the share of initial investors:

*Retention rate =  $1 / (1 + \text{Share in the capital of future issue for future investors})$ .*

For instance, it is expected that in the future 10% of company "A" shares will be sold to its managers and employees, and then an additional issue of 30% for an IPO will be carried out during the IPO. In this case, the retention rate will be:

$$70\% \left( \frac{1}{(1 + 0.1) \times (1 + 0.3)} \right)$$

Finally, the calculation of the required share in the capital and the share price adjusted for the projected dilution shall meet the requirements:

*Required share in capital, adjusted for dilution = Original share in capital / Retention rate.*

In this case, the required share of capital, adjusted for dilution, will be 40.7% (28.5% / 70%). In other words, in order to keep the target share in the capital at 28.5% after the IPO, the investor must receive 40.7% of the shares in the first round of financing. Therefore, the number of new shares in the first round should be 343,373 pcs. (500 thousand / (1 - 40.7%) - 500 thousand). Hence, the price for one share is \$14.56 (\$5 million / 343,373 shares).

### **3. Discussion and Results**

Based on the above methodological prerequisites, the determination of shares price during the IPO process can be divided into three stages.

The first stage is before the price range is established and the order book is formed. This price is indicated in the company's prospectus, which is submitted to the markets and securities regulator. The prospectus is sent to potential investors, and the company starts a "road show" to stimulate demand for its shares. At the same time, the underwriter starts accepting applications and tries to get information on the existing demand.

In the second stage, which occurs after the close of trading on the eve of placement, the company and the underwriter set the final offer price. This is the underwriter's offer price of shares of the company among investors.

The third stage begins with the opening of trading with the company's shares on the stock market. From this moment, the share price is set by the market. The closing price of the first trading day is of particular importance. The difference between the closing price of the first day and the ask price is called the initial profitability. In analytical finance, the initial profit is considered a capital, which the company received less than the underwriter's due.

There are several methods to evaluate the share price of the issuing company:

- Asset valuation method;
- Method of using multiples of analogical firms;
- Discounted cash flow method.

The discounted cash flow method is based on a stronger theoretical foundation, but it is often difficult to estimate future cash flows and choose the right discount factor (The method of discounted cash flows in business valuation, 2015; Trading multiples in business valuation, 2016). The asset valuation method is convenient in a situation where there is a significant number of assets that are easily liquidated at market prices. However, this method is unacceptable when evaluating many IPOs, since a significant part of issuing firms' value is associated with the availability of growth opportunities.

The method of using multiples of analogical firms is the most popular. Multipliers can be very diverse, including specific ones: "market capitalization per TV viewer", "market capitalization per oil barrel reserves", "market capitalization per one company specialist", etc. When assessing mobile operators, the main factor in determining the value of shares is the number of people living in the licensed territory of the company. However, the P/E multiplier is most often used. This method of valuation is to capitalize the EPS ratio using the average multiplier P/E for open peers.

Studies have shown that the first step in the offer price valuation should be a comparison of the operating and financial characteristics of the firm with the corresponding characteristics of several open companies operating in the same sector of the economy. The firm and its underwriters determine the value of shares on the basis of coefficients analysis of the analogical companies in the market with correction for the distinctive features of the issuer, then collect additional information on the state of the market and designate the final offer price.

To calculate the earnings per share, average earnings for the last 12 months, a forecast for profits for the current year and a forecast for profits for the next year are used.

The sample consists of 143 issuers that had a positive average profit for the last 12 months. Forecasts of earnings per share are the average value of forecasts of the Wall Street investment banks financial analysts (Lukashov and Mogin, 2010). P/E for the issuer is calculated using the offer price. P/E of peers companies are calculated using the share price in the period of issuance of the preliminary IPO prospectus. As an independent variable, the geometric mean of the P/E of the two analogical companies is used. The comparison of the average P/E value based on the profits for the last 12 months is 32.7. The average strategic value of the P/E is

estimated on the basis of the forecasted profits for the current year and is 24.2 and on the basis of the forecasted profits for the following year – 16.8.

**Table 3.** Issuer P/E coefficient regression results on the P/E of analogical companies

Option of earning per share calculation during PIE calculation		Parameter valuation		R <sup>2</sup> , %	Average forecast error, %
		Const. ( $a_0$ )	P/E <sub>relative</sub> . ( $a_1$ )		
1.	Average profit for the last 12 months.	22,71 (6,23)	0,34(3,71)	8,30	55,00
2.	Forecasted profits for the current year	13,93(4,59)	0,41 (3,71)	8,30	43,00
3.	Forecasted profits for the next year	7,30 (4,93)	0,48 (5,84)	18,90	28,00
4.	Mature firms (forecasted profits for the next year)	8,09 (3,08)	0,54 (3,63)	14,60	32,00
5.	Mature firms (forecasted profits for the next year)	6,00 (4,74)	0,45 (6,56)	37,50	23,00

Analysis shows that the use of net profits for the past periods leads to inaccurate valuation. Using predicted values of net profits in P/E significantly improves the accuracy of the valuation. To determine the offer price, a number of other factors are used, in particular EV/Sales (the ratio of the company's total value to sales):

*Full enterprise value - EV = Market price of the share capital x Number of shares + Balance sheet value of the debt capital – Available funds.*

The calculation of the full enterprise value does not always depend on the amount of available funds that a firm can receive as a result of an IPO. This multiplier has several advantages over P/E.

Firstly, sales, as opposed to profits, are always positive. Therefore, this coefficient is applicable to young firms, and to firms in a difficult financial situation.

Secondly, net profits depend on the depreciation method, i.e. EV/Sales is much easier to apply for comparison of firms using different depreciation methods.

Thirdly, this coefficient can be used to compare firms with different levels of financial leverage.

Finally, information on sales is much more difficult to manipulate, and they are more stable than companies' net profits. Thanks to all these advantages, the EV/Sales ratio is very popular among analysts and is especially often used to compare firms in

sectors of the economy that require large investments in infrastructure (mobile communications, cable TV).

In countries with developed stock markets, companies often conduct initial public offerings early in their development, so comparative methods using multipliers are used when assessing their value. However, if the initial placement is carried out by mature companies with stable cash flows, then different variants of the discounted cash flow method are more suitable for them (Table 4) (Lukashov and Mogin, 2010).

**Table 4.** Comparison of different methods used to estimate the value of issuing companies on the Brussels Stock Exchange

Issuer's valuation method	IPO, %	Average error in the first month of trade, % (in brackets - median of error)	Error within 15% (first month of trade), %
Discounted free cash flow method	100,0	-5,1 (2,4)	51,5
Discounted dividend method	70,0	-17,9 (-11,4)	52,2
Multipliers (all types)	94,0		
Price/earnings			
Peer company (current year)	58,0	-21,5 (-9,3)	42,1
Peer company (next year)	58,0	-16,1 (-4,3)	52,6
Price/cash flow			
Peer company (current year)	36,0	14,7(4,6)	53,8
Peer company (next year)	36,0	11,8 (-0,8)	72,7

The most accurate valuation method for mature companies is the discounted free cash flow method (Table 7): the median of error is 2.4% and is within the statistical error.

In the comparative valuation method using multipliers, the best results were obtained using the price / cash flow ratio (using cash flow projections for the next year). In this case, the average error is 11.8%, and the median of error is 0.8%. By the valuation accuracy, this method is quite comparable with the method of discounted free cash flow and is more accurate than the discounted dividend method.

#### 4. Conclusion

Today, certain companies of Kazakhstan entered the IPO market. The country's first company, which decided to attract investments through securities, is the oil-

producing company KazMunaiGas Exploration and Production. At the end of 2006, the company issued 17.9 million shares (38%) on the Kazakhstan Stock Exchange (KASE) and 8.7 million shares on the London Stock Exchange (LSE). In 2007, the national telecom operator Kazakhtelecom offered its shares. In 2008, it issued shares in Mangistau Electricity Distribution Network JSC (Syzdykbayev, 2014). The national company KazTransOil, the oil transportation company, was one of the first to issue its shares on the "People's IPO" at the end of 2012 (Yarunina, 2015). In 2018 it is planned to enter the IPO of major national companies Kazatomprom and Air Astana. In 2019-2020, such companies as KazMunaiGas, Samruk-Energo, Kazpost and Kazakhstan Temir Zholy will be considering opportunities to enter the IPO market. All these companies are national operators of the Republic of Kazakhstan.

Among these companies, it is especially possible to single out the national company – KazMunaiGas. Its leading and subsidiary enterprises operate in the oil and gas production, transportation and refining markets. The income of enterprises depends both on external factors (world prices for oil and gas), and on internal factors. One of the company's enterprises profitability indicators are the determination of the quality of products (oil), their chemical composition (Suerbaev et al., 2007; Appazov et al., 2017), the financial position of the company, its solvency and asset liquidity (Tlessova, Shalbolova and Berzhanova, 2016). At present, the company under consideration is at the stage of transformation. The company plans to create a simple, mobile organization, since its management is carried out at nine levels. According to the restructuring plan, organizational work is currently underway to transition to a three-tier management system of the company. Realization of the set tasks will allow KazMunaiGas to enter the IPO more easily (Kasymbek, 2016). In addition, there will be a lot of work on business valuation, valuation of subsidiaries and determination of the share price.

## References:

- Appazov, N.O., Seitzhanov, S.S., Zhunissoy, A.T. and Narmanova, R.A. 2017. Synthesis of Cyclohexyl Isovalerate by Carbonylation of Isobutylene with Carbon Monoxide and Cyclohexanol in the Presence of Pd(PPh<sub>3</sub>)<sub>4</sub>-PPh<sub>3</sub>-TsOH and Its Antimicrobial Activity. *Russian Journal of Organic Chemistry*, 53(10), 1596-1597.
- Asaul, A.N., Starinsky, V.N., Starovoytov, M.K. and Faltinsky, R.A. 2014. Evaluation of the organization (enterprise, business). St. Petersburg: ANO "IPEV".
- Busov, V., Zemlyansky, O. and Polyakov, A. 2013. Enterprise (business) valuation. Moscow. Evaluation of the company's IPO value. 2016. Available at: <http://proizvodim.com/ocenka-stoimosti-kompanii-pri-ipo.html>
- Gorbunova, N.A. 2016. Methods of Analysis of Equity Securities Risk and Return: Issues and Prospects. *European Research Studies Journal*, 19(3A), 228-249
- Grima, S., Caruana, L. 2017. The Effect of the Financial Crisis on Emerging Markets: A Comparative Analysis of the Stock Market Situation Before and After. *European Research Studies Journal*, 20(4B), 727-753.
- Grima, S., Románova, I., Bezzina, F. and Dimech, C.F. 2016. Alternative Investment Fund

- Managers Directive and its Impact on Malta's Financial Service Industry. *International Journal of Economics and Business Administration*, 4(1), 70-85.
- Kasymbek, A. 2016. IPO KazMunayGas is planned to be held after 2018. Available at: <http://www.kapital.kz/economic/49699/ipo-kazmunajgaz-planiruetsya-provesti-posle-2018-goda.html>
- Kosorukova, I., Sekachev, S. and Shuklina, M. 2015. *Securities and business valuation* Moscow: Synergy University Publishing House.
- Lukashov, A. and Mogin, A. 2010. *Company valuation immediately before the IPO. IPO from 1 to 0: A manual for financial directors and analysts*. Moscow: Alpina Business Books.
- Nesterenko, E.A. 2012. Methods for venture capital valuation. *Economy: Yesterday, Today, Tomorrow*, 5-6, 129-141.
- Pontoh, W. 2017. The Capital Structure: Is Debt just a Policy or Requirement? *European Research Studies Journal*, 20(2A), 128-139.
- Suerbaev, H.A., Chepajkin, E.G., Dzhiembaev, B.Zh., Appazov, I.O. and Abyzbekova, G.M. 2007. Catalytic Hydroxycarbonylation of Isobutylene with Carbon Monoxide and Polyhydric Alcohols in the Presence of the Pd(acac)<sub>2</sub>-PPh<sub>3</sub>-TsOH System. *Petroleum Chemistry*, 47(5), 345-347.
- Syzdykbayev, A. 2014. The terms for placing shares of the largest Kazakhstan companies on the IPO have been named. Available at: [http://lenta.inform.kz/en/nazvany-sroki-razmescheniya-na-ipo-akciy-krupneyshih-kazahstanskih-kompaniy\\_a3124014](http://lenta.inform.kz/en/nazvany-sroki-razmescheniya-na-ipo-akciy-krupneyshih-kazahstanskih-kompaniy_a3124014)
- The method of discounted cash flows in business valuation. 2015. Available at: <http://vamocenka.ru/metod-diskontirovannyx-denezhnyx-potokov-v-ocenke-biznesa/>
- Tlessova, E.B., Shalbolova, U.Z. and Berzhanova, A.M. 2016. Financial stability diagnostics for construction enterprises. *Actual Problems of Economics*, 6, 357-367.
- Trading multiples in business valuation. 2016. Available at: <http://vamocenka.ru/ocenochnye-multiplikatory-v-ocenke-biznesa/>
- Vashakmadze T. 2013. Approaches to business valuation. Retrieved from: [https://www.cfin.ru/appraisal/business/intro/Valuation\\_Standard.shtml](https://www.cfin.ru/appraisal/business/intro/Valuation_Standard.shtml).
- Yarunina, I. 2015. The most profitable IPO on the Kazakhstan stock exchange. Available at: <https://www.zakon.kz/4693265-samyeygodnye-ipo-na-kazahstanskojj.html>
- Yarunina, I. 2017. The most successful IPOs in Kazakhstan have been named. Available at: <https://lsm.kz/nazvany-samyeyspeshnye-ipo-v-kazahstane>