Dividend Policy and Its Influence on the Cost of Capital

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Abstract: This article conducts a research about the dividend policy of information technology companies with the highest growth rates and a comparison of cash dividends and stock buybacks in terms of cost of capital optimization and increase of enterprise value. In addition, the article presents a comparison between the dividend policy of US and Russian technology companies and concludes that Russian policy is less complicated due to relatively low country market capitalization and short dividend policy background. It is noticed that more and more companies with share equity use share repurchase policy and shorten quantity of cash for dividends payout. Calculation of a number of indexes show that such policy positively influences on the enterprise value, may decrease cost of capital and bring more stability into financial condition of a company.

Keywords: Dividend policy, cost of capital, share price, share buybacks/repurchase, capital structure.

1. INTRODUCTION

Technology companies' inventions play a very important role in everyday life of almost every human therefore it is not a surprise that there is at least 5 technology companies in the list of top ten companies by market capitalization all over the world. All these companies have headquarters located in US and they are: Apple Inc., Alphabet Inc. (better known as Google), Microsoft, Amazon and Facebook. Therefore, most of assumptions and findings in this article are based on financial and dividend, as essential part of it, policies of named and some other technology companies.

2. ANALYSIS OF DIFFERENT THEORIES ABOUT DIVIDEND POLICIES

Over the last a hundred years three most famous theories about the dividend policy influence on the enterprise value have been proposed. These theories are listed in the Table **1**.

Despite above mentioned theories are controversial it can be stated that the dividend policy of a company depends on a number of factors among them:

1. Tax rates on dividends and capital gains;
2. Investors' habits and expectations;
3. Availability of free cash;
4. Financial conditions of a company.

3. MICROSOFT EXAMPLE OF DIVIDEND POLICY

Microsoft dividends policy history serves as a bright illustration of how tax rates can predetermine the dividend policy of a company. Microsoft has been conducting the share repurchase plan since 1990-ies and the cash dividend policy since the year 2003. Exactly in this year the new law named "Jobs and Growth Tax Relief Reconciliation Act of 2003" (JGTRRA) was implemented in US. According to the JGTRRA, maximum individual income tax rate on dividend and capital gains was lowered significantly (from 38.6 to 35 percent for dividends and from 20 to 15 percent for capital gains). Figure **1** shows that after the law has come in force Microsoft multiplied expenditures on the dividend policy in more than 10 times up to 44 billion of US dollars in the 2005 year.

Microsoft shareholders expected and required the company to payout cash dividends in 2003 year not only because of JGTRRA. Another reason was that the company accumulated the highest amount of cash on bank accounts – 56 billion US dollar in 2003 despite of the fact that the company has never avoided an opportunity to invest in a new project. It's noted that cultural difference between countries establishes a curtain patterns about investors attitude towards the dividend policy. For example, United Kingdom (UK) investors treatpayouts on a year-by-year basis and looking at the current earnings[1]. This creates volatility in the dividend rates of many UK companies, and a shareholder may get next year even if the businessdoes well and increases its dividend on a net

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[1]https://www.thebalance.com/determining-a-company-s-dividend-payout-policy-356100

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Table 1: Main Theories about Dividend Policy Influence on Enterprise Value

Theory Name	Authors	Main Idea	Weaknesses
The more dividend payouts, the higher enterprise value.			
"Bird-in-the-hand theory"	M. Gordon J. Lintner (1956)	Investors prefer cash dividends to capital gains because of inherent uncertainty of the latter. The theory considers investor's behavior and psychological features. Gordon Growth Model: P = D * (1+g) / (k-g), D –Expecteddividendpershare; g –Growth rate in dividends; k –Required rate of return.	Relevant only for companies with stable growth rates; Company growth rate must be equal to orbe higher than economy's growth rate; Precise dividend policy must be developed in a company and followed by managers.
The more dividend payouts, the lower enterprise value.			
Tax Model	R H. Litzenberger K. Ramaswamy (1980)	If dividends are levied by higher tax rates than capital gains a company will shorten dividend payouts as much as it is possible. Net income becomes a part of retained income or comes into use in a stock repurchase plan. Tax on capital gain is paid after share selling only, while tax on dividends are paid the day dividends were received.	Depends on tax policy of a country
Dividends do not matter.			
Dividend Irrelevance Theory	M. H. Miller F. Modigliani (1961)	The dividends distribution to shareholders is offset by the external financing. Due to the distribution of dividends, the price of the stock decreases and will reduce the gain made by the investors because of the dividends.	NoIncome Tax; Notransaction costs; Investorirrelevancetotypesofearnings; No information asymmetry; Cost of debt = Cost of equity

Source: authors' compilation.

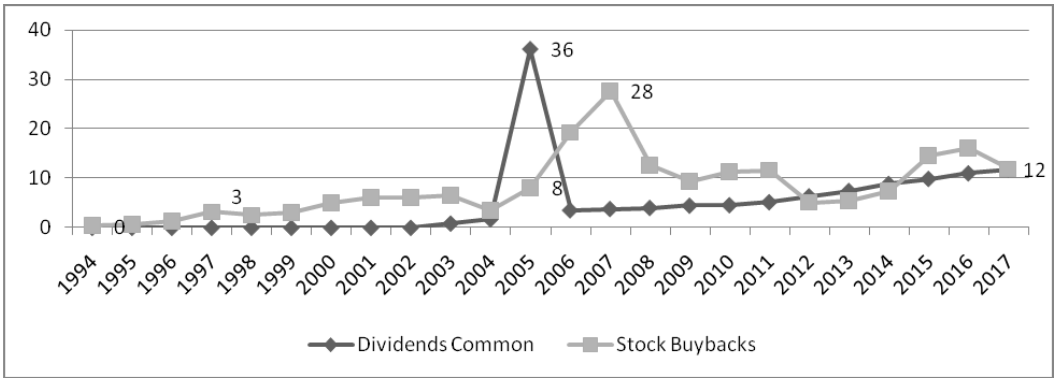

Figure 1: Dividends and Stock Buybacks trend in Microsoft for the period 1994 – 2017, bln. US dollars.

Source: authors' estimations based on company's annual reports.

basis. Such treatment would be anathema in United States (US). Figure **1** shows that US investors expect and demand companies to smooth dividend increases in a way that dividend cuts are rare so those who rely upon the income can count on it.

Considering these two reasons Microsoft made the biggest dividend payouts in 2005 and pursues both types of dividend policy till now: cash dividends are being increased year by year while stock repurchase expenditures rely on financial condition of the company.

A metric to measure how much cash can be distributed for purposes of the dividend policy is Free Cash Flow to Equity (FCFE). FCFE from the Figure **2** for Microsoft in the period from 1994 till 2017was calculated on the base of cash flow statements as follows:

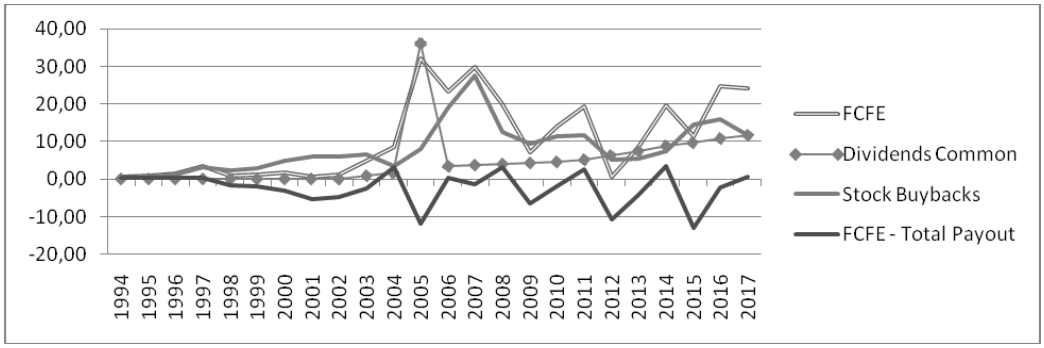

Figure 2: Dynamic of FCFE and dividend payouts (cash dividends and share buyback) in the Microsoft in the period from 1994 to 2017, bln US dollars.

Source: authors' estimations based on Microsoft annual reports.

FCFE = Net Income + Depreciation & Amortization + Capital Expenditures + Changes in Non-cash Working capital + Preferred Dividend + Increase in LT Borrowing+ Decrease in LT Borrowing + Change in ST Borrowing.

Results attained with Microsoft show a closer correlation between FCFE with stock buyback than between FCFE and dividends. During the lowest FCFE value in 2012 Microsoft managed to decrease stock buyback expenditures but dividends continued to grow. That proves that in such countries as United States dividend payouts may carry the company to bankruptcy.

In general dividend share in FCFE of Microsoft has increased from 2003 year from 17 to 49 percent. Share of stock buyback expenditures in FCFE varies between 25 and 60 percent and depends on income and forecasts.

FCFE is a good metric for determining how much cash can be used for the dividend policy but it does not always show real financial condition of a company. Financial condition includes cost of debt and equity capital as well. If cost of debt capital can be easily received from annual report and bank interestsrates data, cost of equity capital is not so obvious.

4. COMPARISON OF FIVE TECHNOLOGY COMPANIES

To estimate cost of capital in five technology companies, Discounted Cash Flow (DCF) method was used. All of companies have got stable growth rates therefore Gordon DCF growth model can be applied.

Average cost of equity of technology companies without IBM is 16 percent. Cost of capital of IBM exceeds figures of other companies because the company spends the bigger part of income on the dividends policy that others do. Some analysts consider that the company overstates its abilities and does not trust in prosperous future of the company.

The received amount of 16 percent is a quite expensive price for equity. For example, a giant buyer in the corporate-bond market – the European Central

Table 2: Cost of Equity Calculated by Discounted Cash Flow Method in Technology Companies with High Growth Rate, 2017

	Share price, US dollars	Dividends, US dollars	Dividend yield, %	Dividend growth rate, %	Cost of equity, %
	P0	DIV1	DIV / P0	g = CR * ROE	r = DIV1 / P0 + g
Microsoft	61,64	1,53	0,025	0,13	0,15
Apple	135,76	2,40	0,018	0,26	0,28
Intel	34,08	1,04	0,031	0,08	0,11
Cisco	31,59	1,10	0,035	0,06	0,10
IBM*	143,86	5,50	0,038	0,84	0,88
			Average without IBM		0,16
			Average with IBM		0,30

Source: authors' estimations based on companies' annual reports.

Figure 3: Comparison of Yandex N.V. and Microsoft real time stock prices (Nasdaq).
Source: https://finance.yahoo.com/

Bank – sets interest rate at the level from 1 to 3 percent. That makes sense for US companies and they change their priorities from equity capital and high dividends to share repurchase program and chip foreign debt.

Estimation of the dividend policy influence on enterprise value was conducted on the leading Russian technology company Yandex N.V. (Yandex). Despite the company earns most of its income in Russia and its headquarter located in Europe (The Netherlands), Yandex shares are traded on the US exchange NASDAQ. Therefore, the company was treated as an US company in the research and results received during analysis of US companies were applied to Yandex.

Share price of Yandex has not grown since Initial Public Offering (IPO) in 2011 despite of the fact that the company's current ratio in 2017 year was 4.61 and net cash flow provided by operating activities for Q1 2018 was RUB 5.2 billion (90.6 million US dollars) and capital expenditures were RUB 1.2 billion (20.2 million US dollars).

To estimate influence of the dividend policy on the Yandex enterprise value, it is used the FCFE model. The model is based on real data from annual reports of Yandex. Several indexes such us Net Income, Shareholders Equity, weighted average number of shares outstanding and FCFE were affected by implementing the dividend policy into the model. The model works under assumptions that there is no difference between tax rates on dividends and capital gains, the company buys shares on market price as usual shareholder, transactions expenditures for dividends and stock buybacks are equal.

The following figures and formulas for the model have been used:

Required rate of return is constant and equal to 12.59%;

Average growth rate of the company is constant and equal to 5%;

Cost of Equity = DIV / P + company growth rate;

Year share price = FCFE / (Cost of equity - company growth rate)

Share price = Last year share price * (1+Cost of Equity) / (12.59 – Cost of Equity).

The model is constructed for the case when the company spends 4 percent of Net Income on cash dividend payouts. And the company may spend additional 5 percent of Income but only on cash dividends or stock buybacks.

Provided the company pays off dividends in amount of 4 percent of Income, forecasted Yandex share price will count 2 031.08 RUB (33.85 US dollar). If the company carries a resolution about 5 percent increase of dividends, the index Dividend per Share will be doubled. As a result, the cost of equity capital will grow and share price will decline by 2 percent.

Table 3: Estimation of Share Price for Yandex N.V. for Two Cases: Cash Dividend Payout and Stock Buybacks (1 US dollar = 60 RUB)

	Year 1	Year 2	Year 3	Year 4	Year 5
Weighted average number of shares outstanding, mln	326 210 948.00	326 657 778.00	319 336 782.00	318 541 887.00	318 541 887.00
Cash dividends, 4% of income, US dollars	5 482 000.00	8 982 666.67	11 346 666.67	6 452 666.67	4 522 000.00
Dividend per share, US dollars DIV	0.04	0.06	0.08	0.05	0.03
Average market share price, US dollars (P)	11.33	16.47	19.07	15.70	21.15
Net Income, mln US dollars	137.05	224.57	283.67	161.32	113.05
Shareholders Equity, mln US dollars	617.45	776.62	928.93	1 168.28	1 284.77
ROE	22.20	28.92	30.54	13.81	8.80
EPS	0.42	0.69	0.89	0.51	0.35
Coefficient of Reinvestment (CR = 1 - DIV / EPS)	0.91	0.91	0.91	0.91	0.91
Dividends growth rate, % (g = CR * ROE)	20.20	26.31	27.79	12.57	8.01
FCFE	22.07	556.65	-291.58	-22.03	65.00
FCFE qrowth rate, %	5.00	5.00	5.00	5.00	5.00
Cost of equity	-	27.47	29.01	13.12	8.36
Required rate of return, %	-	12.59	12.59	12.59	12.59
Share price in case of 4% of Net Income used for cash dividend payout, no stock buyback	33.85				
Share price in case of 5% increase of cash dividend payout	33.15				
Share price in case of 5% increase of stock buyback	33.84				

Source: authors' estimations.

On the condition that the company decides to implement share repurchase plan instead of dividends payout then equity capital will be shortened and as a consequence ROE (Return on equity) will level up. That change will have a knock-on effect for dividends grow rate and cost of equity. As a result in case of share repurchase plan share price starts to grow and the more expenditures on such dividend policy the higher share price.

The model shows that company will benefit if it chooses stock repurchase program. The next important decision to be made before dividends are paid is how much does company may spend on the dividend policy without blowing up its financial stability on the market. Calculation of FCFE for the last 6 years showed FCFE varies significantly with average FCFE equals 86.14 million US dollars. The index fell till – 292 million US dollars in 2014 because of growth of Capital Expenditures (CapEx) and investing activity. The

Table 4: Estimation of FCFE for Yandex N.V. for the Period 2012-2017 (1 US dollar = 60 RUB)

	2012	2013	2014	2015	2016	2017
Net Income	137.05	224.57	283.67	161.32	113.05	144.27
Depreciation and Amortization	49.18	61.98	88.25	145.97	175.30	198.72
Capital Expenditures (CapEx)	-169.83	-11.83	-476.48	-194.60	-218.43	-129.80
Changes in Non-cash Working Capital (WC)	-0.35	-54.03	-132.98	-35.92	78.77	-16.67
Preffered Dividend	0.00	0.00	0.00	0.00	0.00	0.00
Increase in long-term borrowing	6.02	335.97	52.87	2.80	8.80	5.88
Decrease in long-term borrowing	0.00	0.00	-106.90	-101.60	-92.48	-15.67
Change in short-term borrowing	0.00	0.00	0.00	0.00	0.00	0.00
FCFE	**22.07**	**556.65**	**-291.58**	**-22.03**	**65.00**	**186.73**
Dividends Common	0.00	0.00	0.00	0.00	0.00	0.00
Stock Buybacks	0.00	141.97	140.38	0.00	0.00	0.00
Total payout	**0.00**	**141.97**	**140.38**	**0.00**	**0.00**	**0.00**
FCFE - Total Payout	**22.07**	**414.68**	**-431.97**	**-22.03**	**65.00**	**186.73**

Source: authors' estimations based on companies' annual reports.

company has bought 5 profitable companies in Russia and invested in 'search index' improvement but all these expenditures have not brought additional income to the company yet. It means that if the company starts to pay dividends under shareholders' requirements, US investors will wait for gradual and permanent increase of dividend per share amount. Unless the company does not achieve stable free cash flow, it should not implement cash dividends payouts because its amount may be crucial for the company.

Moreover, Yandex placed 600 Million US dollar of 1.125% Convertible Senior Notes in 2013 with due date in 2018. The debt rate is much lower than equity cost (min. 9 percent) estimated in the model. Repurchases of convertible debt have come out approximately 100 million US dollars annually. Seems like the company tried to issue debt in Europe like other US companies do and to buy back shares, but high exchange rate volatility in Russia obstructed the company's plan. Shareholders' equity share in total liabilities and shareholders' equity has shorten from 84% in 2012 to 64% in 2017 and we think that company will continue share buyback policy when situation with exchange rates stabilizes in Russia.

Besides shares of Yandex N.V. traded on NASDAQ there are shares of the Russian office that have been traded on the MOEX (Russia) since 2014. Market share price on the Russian stock exchange repeat with a short lag trend of shares placed in US. Placing on shares on the Russian market is important event because trade currency is Rubles and the company cannot be harmed of currency exchange rate volatility.

As it was stated above the estimated model did not consider tax rates, but they do play role while determining the company's dividend policy, in particular, in Russia. Analysis of the Russian tax legislation shows that a stock repurchase program has got pros and cons depending on a number of factors. The main implication of stock repurchase program is that shares that are bought buy the company must be used (sold) during one year otherwise they must be denominated and owner's equity reduced. In additional, if shares are denominated amount of repurchased shares will not be used to reduce tax base for Income Tax (20%) and VAT (18%). But if shares are used on operating activities, for example to buy a new office, then expenses will do reduce tax base. In that case enterprise value will increase along with income.

If the company decides to start to pay cash dividends, there will be the tax rates outlined in the Table **5**. Tax is to be paid at the dividends payment day. These taxes are paid in full and are not subject for deduction from income tax base from operations. Only if a company received dividends and paid income tax from them then the company can reduce tax base in amount of taxes paid earlier. It means if a company does not receive dividends it cannot reduce tax base.

There are exceptions from that rule for such companies as pension funds, non-profit institutions and

Table 5: Dividends Tax Rates in Russia

	If recipient of dividends registered in Russia	If recipient of dividends registered abroad
Individual	13%	15% (or rate stated in double tax treaty between countries)
Legal entity	13%	15% (or rate stated in double tax treaty between countries)

Source: The Russian Tax Code [9].

others. In addition, obligation to pay taxes does not arise if a shareholder is a Russian organization that owns 50% of shares or more during more than 365 days.

5. CONCLUSION

According to our study results above, it can be stated that Yandex and other technology companies can increase their enterprise value by means of decreasing cost of equity and conducting share repurchase policy as a part of dividend policy in future. But as it was stated above, dividend policy depends not only from financial conditions but a number of factors. In terms of Yandex N.V., it is important to keep in mind that the company makes its profits in Russia and in rubles while shares of the company are traded and dividends must be paid only in US dollars. During the last three years RUB exchange rate has been on the highest volatility level changing from 30 to 60 RUB for US dollar. Even if the company follows US companies' policy and issues a debt in Europe, the problem with exchange rates will still not be solved. Therefore the estimated model would not bring additional profits to the company but rather remedy company's losses because of exchange rates. In regards of the Russian office, local legislation allows to implement stock repurchase program but strong rules must be followed to get tax deductions and increase enterprise value.

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