



# *Dividend Signaling Theory and Asymmetric Information*

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## **Introduction**

In recent years, investors meet the unprecedented turbulence in capital markets. The financial crisis of 2008, the pandemic in 2020 cause unseen from the time of the Great depression fluctuations in share prices on capital markets. That sparks the interest of shareholders in dividends and dividend policy of the companies. In Bulgaria, the capital market has just 20 years of history and investors never perceived the dividends as a flow of constant income. However, publicly traded companies are under pressure to consider the distribution of dividends as a signal of trustworthiness and value creation in the future.

The discussion on basic theoretical models of dividend policy defined by Gordon and Litner and Modigliani-Miller is discussed in detail in Berg and DeMarzo (Berk & DeMarzo, 2019), Brealey, Myers and Allen (Brealey, Myers, & Allen, 2019), and Tanushev (Tanushev, 2016).

This research focuses on more modern concept of signaling theory of dividends, on asymmetric information and the role of dividend policy adopted by managers in order to influence the decision-making process of investors.

Financial management of the firm is oriented to link the sources of funds with their allocation. To distribute effectively the free cash flow from operations financial management have to coordinate between short and long term perspectives. The dividends reflect the attractiveness of company's shares and willingness of investors to trust the managers that their assets will increase in time. At the same time, dividends are an item that insure balance between current payoffs to shareholders and supporting the projects oriented towards the future. The dividends create a

focal point between these two different facets: decision-making process and time relevance. The dividend signaling theory focuses on questions if and how dividend policy allows insiders to credibly communicate information to less informed outsiders about the prospects and growth potential of the firm.

This conceptual paper aims to investigate:

- the approach of different researchers to evaluate the information gap between internal and external agents and how managers use the dividends to convey information to the market;
- empirical evidences about what exactly do dividends signal;
- how the theoretical models and empirical research influence the management decisions about dividend policy.

## ***Initial Perception of Signaling Role of Dividends: Literature Review***

In this study, the definition of the dividend is the same as used by Frankfurter, Wood & Wansley (Frankfurter, Wood, & Wansley, 2003). The term dividends is defined as the distribution in real assets of net profits (both past and current) between the shareholders of the company in proportion to their shareholdings. The dividends have three main characteristics. First, the capital used for paying out dividends comes solely from the net profits of the firm. No other source of capital is to be used. Secondly, they are provided in the form of real assets, most commonly as cash. Lastly, the dividends are paid based on the relative shares held by the individual investors in the capital of the company.

The existence of asymmetric information among managers and shareholders is a fundamental market flaw that underlines three separate theoretical models used to justify the corporate dividend policy. These include the signaling theory, the agent cost theory, and the free-cash-flow hypothesis.

The term “asymmetric information” denotes that the corporate management knows more about the prospects, risks, and the value of the company than external investors do. In the presence of asymmetric information, there is a potential danger that the better-informed party will use the informational advantage at the expense of the other market participants. If this happens before a given transaction, the action is defined as an adverse

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choice, and if the misuse happens afterwards it is labeled as a moral hazard. Managers have an incentive to take more risk when they operate with a shareholders money because the costs of failure will be on investors. The temptation increases when the managers' remuneration is linked to specific financial indicators. Sometimes, the problem escalates if the company is considered "too big to fail".

Asymmetric information is observable in the choice of managers between internal and external financing. There is a rule for implementing the so-called pecking order financing, according to which the investments are first financed using internal funds, most commonly in the form of reinvesting profits, then by borrowing funds (issuing bonds), and lastly by issuing shares.

Signaling theory addresses unexpected changes in the amount of dividend paid out by companies as a way of transferring information to investors regarding the current and expected future state of the company. As a result, this so-called "signal", from which the theory derives its name, leads to a change in the stock prices.

Foreign investors judge the company using various financial indicators that describe the capital structure and cash flows. Because of the information asymmetry, investors interpret outflows of equity, in the form of share repurchases or increase in cash dividends as positive signals for the health and development of the company. On the contrary, the reduction or suspension of cash dividends, the issue of new shares serves as a means of holding or increasing equity and is perceived as a negative signal for the future of the company. In the first case, the managers show that they are sure of the company's financial stability – there are sufficient internal financing resources and/or there are expectations of significant profits in the future. In the second case, the corporate leadership limits the outflow of internal funds to stabilize or ensure the survival of the company.

Modigliani and Miller also report the informational content of dividends. (Miller & Modigliani, Dividend Policy, Growth, and the Valuation of Shares, 1961) According to their findings, in perfect capital markets, the unexpected change in dividends may influence the stock prices. In doing so, two important characteristics are observed.

- If the primary reason for the change in the

share prices is the development of future cash flow and the growth potential of the company, the unexpected dividend change is perceived as a signal precisely for their change.

- The reported information effect from dividends may occur under the condition that the company follows a consistent dividend policy (for example, a stable dividend policy, or a stable dividend policy with growth factor), and the change in the dividend payments being unexpected by the market. When declaring a redemption of shares, that also should be unexpected.

One should not forget, that according to Modigliani and Miller in a perfect market, there is no direct relationship between dividends and stock price – the price is a secondary result of other factors. They argue that all stocks on the market, which have equal risk, exhibit the same returns (measured as the sum of dividends and capital gain per unit of investment) at any point in time. Because of the existence of arbitration mechanisms when a group of shares bears the same risk, investors will sell lower-yielding shares and buy those with higher returns to increase their overall wealth. As a result of those transactions, the prices of the first shares will decrease and the second ones will increase until the difference in the returns is completely eliminated.

This thesis strongly contrasts with the Gordon growth model. (Gordon, 1959) Gordon estimates the value of the company by discounting future dividend payments. The model argues that increasing dividend payments over time leads to an increase in share prices. Paying out dividends also leads to a decrease in funds available for investment, which undermines the future dividend growth rate. According to Gordon (Gordon, 1959) low dividend rates lead to a higher discount rate. As a result, the share prices increase, due to the low cost of capital that could offset the decline caused by the weak growth. In this day and age, Gordon's model is applied in the financial world as a tool used to measure ordinary shares based on dividend payments. Gordon concludes empirically that dividends have a greater, statistically significant impact on stock prices than unallocated earnings (Gordon, 1959). Despite its limitations, the Gordon model is still the industry staple in financial theory when assessing the value of the given company's shares. Gordon's theory implies that the company's dividend policy may change the perceived risk level of investors or the uncertainty of future dividends



which in turn should lead to a change in the return of equity. His arguments are the precursor to the theory of asymmetric information.

In turn, signaling theory examines the possibility for investors to obtain information regarding the company's future profits by analyzing the dividend policy it pursues, taking into account both the consistency and the stability of dividend payments as well as their changes. The information effect is primarily contained in this change in dividends, which is unexpected for the market, defining "unexpected" through the larger amount of change. The tendency of firms to follow a relatively stable trend in paying out dividends is defined by Lintner as "sticky dividends" (Lintner, 1956). Managers tend to adjust the value over time to the previous dividend payments and profits made by the corporation. Overall a trend is observable, namely that dividends tend to fluctuate far less than stock prices or firm profits. The sticky dividends theory has been the subject of the survey even in the middle of the last century. Lintner is also one of the first researchers to show how the market reacts to changes in the dividend levels.

### ***Dividend Signaling Theory***

The development of the Dividend Signaling Theory is primarily associated with the Spence model (Spence, 1974), which despite its limitations, is often considered applicable to financial signaling models. The main requirements of the model are two: that the alerting mechanism has a price and can be modified by the sender. Netseva-Porcheva mentioned that: "The perceived value is manageable similar to the cost" (Netseva-Porcheva, 2010).

The price is related to the fact that the payment of dividends leads to the outflow of internal funds for the company and is accompanied by a multitude of costs. These include the transaction costs, which are connected with external financing to provide the required investment funds; the opportunity cost of using the funds to achieve optimal investment solution; taxes on dividends, which as a general rule are higher than taxes on capital gains. It is this so-called price of the dividend signal that guarantees the plausibility of the information it provides and prevents the possibility of false signals. Therefore, only well-developed, undervalued companies would use increased dividend payments to disclose favorable outlook, while poorly-performing

companies could not afford to send false signals to the market through their dividend policy.

Signaling models on corporate dividends policy are mainly researched by Ross (Ross, 1977), Bhattacharya (Bhattacharya, 1979), Talmor (Talmor, 1981), Hakansson (Hakansson, 1982), Miller and Rock (Miller & Rock, 1985).

Ross (Ross, 1977) initially explores the signaling argument that investors assess the future cash flow of the firm based on their perception of it. This model examines changes in the capital structure and shows that by taking out an external loan, the managers signal an increase in the company's ability to generate cash flow. Later on, he expands his research to include the company's dividend policy. He divides companies into two categories: A and B. The profits of companies from type A are higher than those of type B, but in the initial first period, they are indistinguishable for the market. According to this model, managers are rewarded for a positive change in the company's market value and are penalized if the firm goes bankrupt. Ensuring a growing level of dividend payments is within the capabilities of Type A firms without worsening their financial condition, but with Type B this may lead to bankruptcy. Thus, as a result, Type A executives have an incentive to signal higher corporate value, whereas Type B managers do not. The existence of a dividend price warrants its credibility, which gives investors a reason to interpret the increased dividend payments as a signal that they are dealing with a Type A firm. This is the reason for the positive revaluation of the share price of companies as a result of the dividend increases they have taken.

Bhattacharya (Bhattacharya, 1979) builds on Ross's model explains why companies are willing to pay dividends despite their higher tax liabilities relative to capital gains. He shows that when higher dividends are paid out, a signal is sent to the market, and as a result, the stock prices of the company rises. This offsets the tax burden of dividends as the share of shareholders in equity remains unchanged. In the following research, Bhattacharya (Bhattacharya, 1980) enriches the model by using two observable periods. Talmor (Talmor, 1981) further develops the research by introducing a multivariate model, arguing that the dividend policy is just one of many financial decisions that managers make, and not the single signaling source interpreted by the market. Thus, he raises the question of the influence of the



complex character of financial management on the market. Which decision is perceived as a signal, is it a change in the capital or an effect of a chosen marketing technique (such as advertising, public relations, etc.).

Hakansson (Hakansson, 1982) introduces the basic prerequisites that, when fulfilled, allow dividends to be used as an information signal. For that purpose at least one of the following conditions must be met:

- incomplete markets – there is an information asymmetry between the parties, transaction costs apply, number of available securities is limited, which allow investors to realize part of their wealth in future periods depending on which different scenario is attained;

- investors have heterogeneous expectations;

- investors have different consumption distribution in time

The model presents arguments in favor of signaling theory by examining the benefits of dividend payments for the shareholders' welfare. It is unable to explain neither why the investors prefer cash dividends nor what exactly motivates managers to pay them.

Miller and Rock (Miller & Rock, 1985) develop the model of net dividends. A net dividend is defined as the difference between the dividend payment and the amount of external financing of the firm. The authors conclude that dividends and external financing, that are inarguably interconnected nevertheless have the opposite effect on stock prices. For example, a positive change in the amount of dividends paid out leads to an increase in stock prices, then the related announcement of a possible increase in external financing (or sale of shares) will lead to a negative information effect. In this case, the non-optimal investment policy acts as the price signal, as dividends are allocated to money that could have been used for investment purposes. According to Miller and Rock, profits, dividends, and external financing reports are closely interwoven, with corporate dividends and profits being perfect substitutes. Thus unexpected changes in dividends lead to an increase in shareholder wealth. It can be concluded that changes in the trends in the current dividend policy, rather than the value of the dividends itself are the basis on which the market assesses future profits.

Ambarish et.al. (Ambarish, John, & Williams, 1987) use a model where managers can use various other means to transmit information to the market apart from dividend payments, such as investment policy, sale of new shares, and redemption of shares. It is also possible to use a combination of changes in dividend and investment policy or between dividends and the sale of new shares/redemption of shares. In the case where the dividends are used to send a signal, its price is determined by the tax burden on them. According to this model, the use of the information effect of dividends is justified only when the total cost of using a particular combination of methods is as low as possible.

A key question in signaling theory is what exactly do the dividends signal. In response, several hypotheses arise that represent the interdependence of dividend payments with the financial state of the firm, its market performance, and its future prospects.

- Share prices change in the same direction as the unexpected change in dividends. With increasing dividend payments prices are rising and when they decrease the prices are also falling. This is verified by Pettit (Pettit, 1972); Kwan (Kwan, 1981); Woolridge (Woolridge, 1983).

- The initial payment of dividends as well as the sudden suspension have the highest informational impact over all other dividend policy changes. This is discussed by Asquith and Mullins (Asquith & Mullins, 1983); Michaely, Thaler and Womack (Michaely, Thaler, & Womack, 1995).

- The positive market reaction and the increase in stock prices when a dividend is increased/renewed is weaker than the negative reaction, specifically, the reduction of share prices when reduction/omission of dividend payments is observed. The negative market reaction is stronger than the positive one. This is confirmed in the findings of Benesh, Keown, and Pinkerton (Benesh, Keown, & Pinkerton, 1984); Bali (Bali, 2003).

- Redemption of shares is a more significant information supplier than cash dividends. Ofer and Thakor (Ofer & Thakor, 1987) prove this hypothesis by taking into account that the redemption of shares is associated with higher costs than cash dividends. In their opinion, cash dividends serve as a sign of minor levels of underestimation of shares, while in severe cases of significant underestimation a redemption of shares is observed.





- Statements of current profits and announcements of foreseeable dividend payments provided by public companies cannot be regarded as substitutes. The amount of dividends distributed does not sufficiently reflect the current profits. Both sources of information separately have a significant impact on stock prices. Discussed by: Aharony and Swary (Aharony & Swary, 1980); Kane, Lee and Marcus (Kane, Lee, & Marcus, 1984).

- Because of the smoothing of the dividend flow over time, changes in dividend levels can only be considered as an approximate signal of expected future earnings, as the two values do not always change in the same direction. The weak link between dividends and future profits is discussed by Kumar (Kumar, 1988); DeAngelo, DeAngelo and Skinner (DeAngelo, DeAngelo, & Skinner, 1972); DeAngelo, H., L. DeAnReversal of Fortune: Dividend Signaling and the Disappearance of Sustained Earnings Growth, 1996); Benartzi, Michaely and Thaler (Benartzi, Michaely, & Thaler, 1997). Evidence of a positive relationship on future earnings when dividend growth is observed is found in Kale and Noe (Kale & Noe, 1990); Brook, Carlton and Hendershott (Brook, Carlton, & Hendershott, 1998). Reducing the dividend is not a reliable signal for low future profits, as it may be a measure to stabilize the firm and improve its future performance. This is examined by Healy and Palepu (Healey & Palepu, 1998); Jensen and Johnson (Jensen & Johnson, 1995); Iqbal and Rahman (Iqbal & Rahman, 2003).

On one hand, a significant part of the empirical research supports the signaling theory regarding dividends by examining different time periods and seeking the interdependencies of a multitude of factors on the dividends. On the other hand, some authors: Watts (Watts, 1973), Gonedes (Gonedes, 1978), DeAngelo, DeAngelo and Skinner (DeAngelo, DeAngelo, & Skinner, 1996), Grullon et.al. (Grullon, Michaely, Benartzi, & Thaler, 2005) reject the signaling hypothesis and subscribe to the notion that the signaling theory insufficiently explains the benefits of dividend policy.

### **Conclusion**

In summary, several main conclusions can be drawn that emphasize the contributions of signaling theory in the study of dividend policy.

- A basic argument of signaling theory is that

due to the existence of asymmetric information between the firm's internal and external agents, unexpected changes in the company's dividend policy have the potential of reducing the information gap. As a result, the market reacts by adjusting the price of the shares, knowing the high cost of sending a false signal. One of the possible reasons for this reaction is the hypothesis that dividend changes mirror the trends in current and future profits of the firm. However, this thesis is not sufficiently supported by empirical evidence.

- Signaling theory cannot explain the existence of dividend policy. Nevertheless, it shows why managers should be extremely diligent when considering revisions of it as it will inevitably result in a market reaction. Any unexpected change in the dividend policy is reflected in the market, leading to either a positive or negative share price. The signaling theory highlights the benefits of implementing a consistent and stable dividend policy.

- The main criticism of the signaling theory is widely used by many authors' assumption that dividends have a higher price than other alternative means of communication such as advertising and public relations. Measures that in theory should yield the same informational result. The use of dividends as a signal means that these alternative methods are not perfect substitutes. As a compromise, in the real world when faced with a decision of how best to communicate to outsiders the inner stability of the firm or the expected future returns managers choose to implement a mixture of several methods to ensure that the correct signal is sent.

- Signaling theory is built on the assumption that internal agents want to signal the real value of the company by issuing dividends. Contrary to that thesis, a separate argument arises that managers are not always eager to pay out dividends and oftentimes must be persuaded or ever pressured to do so. This line of reasoning is the core of the opportunity cost theory.

It is important to be mentioned that the theoretical models developed by the scientific communities have been successful to a certain degree in explaining the signaling functions of dividends. However, the information role of unexpected changes in dividends is an important feature that should be taken heavily into account by companies when forming their dividend policy.



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