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THE M&M DIVIDEND POLICY-FIRM VALUE IRRELEVANCY HYPOTHESIS AFTER 62 YEARS HUSEYIN

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Abstract

M&M divined policy hypothesis was proposed in 1961 by Modigliani &Miller through their M&M (1961) article. They asserted that dividend policy does not affect the firm value. This proposition has been being discussed for 62 years. About half of the finance literature has not accepted the dividend policy irrelevancy hypothesis since the proposition has been published. They have some reasons and opinions not to accept the proposition. Some of the M&M critiques were replied by the Modigliani and Miller while they were living. Some opinions of the M&M were found from their articles such as M&M (1958), M&M (1961), and M&M (1966) by the writer to reply some critiques. As a result, the proposition IV has not theorized yet in 62 Nd years of its publication. It is still a hypothesis, not a theory.

1. INTRODUCTION

M&M proposed four propositions totally on the theory of corporate finance. The three of them (M&M, 1958) are about the effect of capital structure on firm value, the effect of capital structure on cost of capital, and the effect of capital structure on investment value (project value). The three propositions, their effects on the finance literature, and discussions about these propositions were investigated in Yilmaz (2020) and Yilmaz (2021). The M&M's fourth proposition (M&M, 1961) is about the effect of dividend policy on firm value. I will investigate discussions and critiques about this proposition by investigating finance literature to date. In the Section II, I will summarize the fourth proposition and its assumptions. In the Section III, firstly, I will determine the critiques to the hypothesis chronologically. Then, I will group the critiques as positive critiques and negative critiques. At the same time, some calculations about the directions of the critiques will be done in this chapter. The Table 1, Table 2, Table 3, and Table 4 are given as useful tools for grouping and summarizing the critiques in this section. In the Section IV, I will investigate the replies given by the Modigliani & Miller to the negative critiques in three subsections. I grouped the replies in three sub sections as below:

4.1. Cancellation of Some Assumptions Could Do the Theorem Invalid

4.2. Reply to Rubinstein's Two Critiques

4.3. Reply to the Similarity of M&M's Dividend Policy Theorem with Fisher's Separation Theorem in the Section IV, a summary of the replies is given.

2. THE M&M DIVIDEND POLICY THEOREM: THE PROPOSITION 4

2.1. The Assumptions of the M&M Theorem on Dividend policy

The M&M (1961:412) give their assumptions about the M&M dividend policy proposition which are perfect capital markets, rational behavior, and perfect certainty. They explain the

assumptions like that:

a. In perfect capital markets, no buyer or seller (or issuer) of securities is large enough for his transactions to have an appreciable impact on the then ruling prices. All traders have equal and costless access to information about the ruling price and about all other relevant characteristics of shares. No brokerage fees, transfer taxes, or other transaction costs are incurred when securities are bought, sold, or issued, and there are no tax differentials either between distributed and undistributed profits or between dividends or capital gains.
b. Rational behavior means that investors always prefer more wealth to less and are indifferent as to whether a given increment to their wealth takes the form of cash payments or an increase in the market value of their holdings of shares.
c. Perfect certainty implies complete assurance on the part of every investor as to the future investment program and the future profits of every corporation. Because of this assurance, there is, among other things, no need to distinguish between stocks and bonds as sources of funds at this stage of the analysis. For this reason, it could be seen that as if there were only a single type of financial instrument which, for convenience, it could be referred to as shares of stock.

2.2. The M&M Dividend Policy Theorem

The fourth proposition of the M&M is the dividend irrelevancy proposition. Under perfect capital markets, rational behavior, and perfect certainty, the valuation of all shares would be governed by the following fundamental principle: the price of each share must be such that the rate of return (dividends plus capital gain per dollar invested) on every share will be same throughout the market over any given interval of time (Miller H. &Modigliani, 1961:412). They think that the change in the policy about dividend payment and capital gain does not affect the firm value because it is only distribution of profits to cash payment to owners and/or retention in the Corporation. The two choices are the rights of the shareholders. The firm value was not affected from dividend policy.

3. THE CRITIQUES, THEIR GROUPING AS POSITIVE AND NEGATIVE

3.1 The Critiques to the Fourth Hypothesis

Van Horne (1971:245- 253) supports the M&M dividend irrelevance theorem with his “what if” scenario. He says “what if the external financing involved debt” (after dividend payment)? Then, he explains his positive opinion through the other M&M irrelevance, the capital structure irrelevancy. He connects the two-irrelevance situation to each other for the case of debt financing to complete the dividend paid to the equity owners. Van Horne asserts that the favorable effect upon share price is due to the investment decision and not to the dividend decision. He does not accept informational content of dividend argument, too. Van Horne says that the basic factor affecting value is not dividends but expectations of future performance. He accepts that there may be no systematic preference in the market as a whole for current dividends. At the margin, the market may behave in a manner consistent with the irrelevance proposition. He accepts the irrelevancy for only tax-free institutional investors. However, he thinks that different tax rates and different applications about dividend tax and capital gain tax cancel the M&M dividend policy irrelevancy. Dividend tax is paid immediately while capital gain tax is paid after the stock is sold. This is a reason for retention preference by investors, so the M&M dividend policy irrelevancy does not work for this case.

As looked generally, he accepts the irrelevancy except different dividend tax and capital tax and their timing.
Black (1976:5-6) supports the M&M dividend irrelevancy theorem. He says that if a company pays dividend, its share value decreases as its cash payment. If it does not pay dividend, it invests the dividend amount maybe more profitable than that of dividend the shareholders collected from the company. He also adds to his supportive opinions that the shareholders could meet their cash requirements with other ways. If the firm is closely held, the firm can buy back some shares from the shareholders who are in needs of cash, it could give jobs at inflated salaries or ordering goods from other firms owned by the shareholders at inflated prices. If the firm is not closely held, another individual or firm can make a tender which will have the effect of making it closely held. Then the same methods
for taking cash out of the firm can be used.

Black thinks that if taxes are considered, even the status of tax of the investors, firm value is affected.

This is valid for paying, not paying, and partial paying dividend.

He also thinks that stock market prices are affected from each other's dividend paying status. In my opinion, he thinks that if no taxes assumption is cancelled, the firm value is affected.
He does not believe the importance of transaction costs in affecting the stock value. His dividend irrelevancy supporter ship is not affected from the transaction costs.
He offers some alternative ways such as share repurchase plans, dividend reinvestment plans etc. which provide cash without transaction costs for the investors.
The opinion share repurchases plans instead of dividend payment could be criticized. Its reason is share repurchasing or stock buyback is leaving of the shareholders who sell their stocks from the shareholder ship according to the plan. If the shareholders do not want to leave the corporate's shareholder ship or ownership the plan does not work. Some owners still could want to solve their cash problems via dividends. Even a partial stock sale of a shareholder means a decrease of the ownership so it could not have been preferred by the owner. Actually, he wants continuing its shareholder ship because he is glad of his corporation and ownership of the corporate.
Fama (1978:275) supports M&M dividend irrelevancy theorem. He thinks that when a firm's securities are protected by me-first rules, the firm's dividend decision determines how the wealth of its shareholders is split between dividends and outstanding value, that is retained earnings, but the sum of the two components of shareholder wealth is unaffected by the dividend decision. That is, dividend decisions are a matter of indifference to the firm's security holders whenever financing decisions are a matter of indifference.
Copeland and Weston (1988:544) think that dividend payout does not affect the value of the firm. However, in a world with personal as well as corporate taxes the possibility arises that dividend may affect value. They also think that agency costs and information heterogeneity are proposed as possible explanations for dividend policy.
Bhattacharya (1988:135-136) thinks that the key methodological contributions of M&M papers 1958,1961, and 1966 were:

a. introduction of risk class notion,

b. consideration of investor arbitrage in pricing securities,

c. initiation of integrated after-tax analysis of dividend and debt supply policies of firms,

d. consideration of empirical evidence and introduction of "respectable" econometric methods in corporate finance,
e. planting seeds for the development of economic modeling of unexplained phenomena, such as the "informational content" of dividends for stock prices.
He thinks about the M&M dividend policy positively and his article (1988) does not cover any negative opinion about that matter.
Shiller (2004:1) thinks that the M&M (1958) and the M&M (1961) about dividends, earnings, and the cost of capital have become a cornerstone of financial theory. He thinks that the Modigliani–Miller theory freed the financial scientists from financial thinking that is tied to artificial categories of thought and led the scientists to thinking of the firm as a whole as an entity that merely divides up its cash flow among different classes of claimants. The theory freed the scientists from a number of fundamental confusions that had infected the scientists' thinking until then, and changed the basic units of description for empirical finance. Rubinstein (2006:142-143) thinks that the reason of M&M dividend theorem (1961) is a rough intuition. Rubinstein explains this like this: Cateris paribus, to the extend a firm pays out greater dividends, it will have less earnings to reinvest. In turn, this will reduce future earnings, which will eventually reduce future dividends. One can have more dividends now or more dividends later, but not both; moreover, shareholders are indifferent to this trade-off. Another way to see this is to ask what should happen to the stock price, cateris paribus, immediately after a dividend is paid. The dividends can be viewed as a partial liquidation. After this sentence, Rubinstein says in a parenthesis that: "a dividend of 100% of the firm would be a complete liquidation after which the stock would be worth zero". He continues his explanation that, **o**n the one hand, shareholders are better-off since they receive the dividend; on the other, they are worse off because the firm now has less to invest by the amount of the dividend, so the stock price falls by the amount of the dividend. Taking these together, the shareholder is no better off as a result of the dividend. For these reasons, the Miller and Modigliani's dividend irrelevancy theorem is transparent. He also adds that these arguments seem to hold the investment policy of the firm fixed. However, that is not really required. Rubinstein also asserts a paradox between the two articles of Modigliani and Miller (1958 and 1961) about dividend irrelevancy theorem explanation. He says that, in M&M (1958), dividend policy irrelevancy can be interpreted as an immediate and simple consequence of present value additivity. From this perspective, it is easy to see that if a firm reduces its dividend in one period and reinvests the extra retained earnings in a zero net present value project that provides increased future dividends, then (provided state-prices are not affected) the present value of the firm's dividends, and hence its current stock price, will remain unchanged.
It could be seen from his opinions that he does not accept the dividend irrelevancy theorem. He brings so much critique about the theorem. His logic does not fit the M&M dividend irrelevancy theorem.[2]
Bossaerts and 0degaard (2006:190-191) think that dividend irrelevancy is only valid under assumptions of no taxes. In most countries including the U.S, corporate and personal taxation is very important for changing preferences for dividends. The writers remind that dividends are double taxed because they are after tax based and they remind that on the level of an individual investor, there is a clear preference for capital gains relative to dividends. The writers also add to their opinions that capital gains are taxed only when realized and only if an investor has not died yet. The writers think that by that argument, firms do a disservice to

shareholders when paying dividends. If shareholders need the money, they can borrow against their shareholding, with the promise to pay back the loan when they die. Alternatively, each individual investor may want to sell some small fraction of her shares to create "homemade dividends".

He implies that the dividend policy irrelevancy is not valid because of taxes and dividend payments affect firm value.

McLaney (2009:328-329) thinks that M&M took the separation theorem slightly further by asserting that the value of a share will be unaffected by the pattern of dividends expected from it. He also says that M&M's assertion does rely on several assumptions of dubious validity in the real world. There are some limitations of these assumptions and these should be considered.

Al-Malkawi at all (2010:194) think that in perfect capital markets, M&M asserted that the value of a firm is independent of its dividend policy. However, various market imperfections such as taxes, transaction costs, information asymmetry, agency problems etc. exist and these market imperfections have provided the basis for the development of various theories of dividend policy including tax-preference, clientele effects, signaling, and agency costs.

They mean that the M&M dividend policy theorem is not valid in non-perfect capital markets. It is only valid in perfect capital markets.

Rees and Valentincic (2013:647) think that basic assumptions of M&M dividend irrelevance theorem such as perfect markets, rational behavior and perfect certainty clarify some of the circumstances in which we might find a positive valuation effect of dividends. That is, the M&M exclude from their model dominant shareholders, information asymmetry, transaction costs, tax effects, incentives other than wealth maximization, and uncertainty about the future investment programmed and future profits of every corporation. The writers think that since these assumptions are not valid for current life in where inefficient capital markets, governance issues, agency problems, information asymmetry and signaling, differential tax treatment or uncertainty, it might be looked for a value impact of dividend payment. These writers have a logic that the assumptions break the dividend irrelevance insight of the M&M. From a negative side, if there were not the assumptions, the irrelevance opinion was valid. I think that they do not accept the irrelevance opinion or the proposition IV with these assumptions.

Baker and Weigand (2015:128) think that, in reality, capital markets are neither frictionless nor perfectly efficient. Researchers have tried to find reasons that dividends exist focusing either on market frictions or imperfections such as taxes, asymmetric information (signaling) and agency costs, or on behavioral considerations such as investor preferences. Thus, dividend policy can affect shareholder wealth because of market imperfections or behavioral considerations.

As you see, Baker and Weigand does not accept the dividend policy irrelevancy theorem.

Tanushev (2016: 306) asserts that because of the strict assumptions it is based on, MM's theory remains an idealized model not applicable in its entirety in practice due to a number of market imperfections in the real world. However, the significance of this fundamental theory is undeniable and it is used as a basis for further development of the knowledge of the dividend policy.

3.2. General Evaluation of the Critiques

The finance writers having opinions about the M&M dividend policy irrelevancy and the routes of their opinions are shown at the Table 1 below:

Table 1: Critiques by Direction and Year

Writer	Direction of the Critique
Van Horne (1971)	both positive and negative
Black (1976)	both positive and negative
Fama (1978)	Positive
Copeland and Wetson (1988)	both positive and negative
Battacharya (1988)	Positive
Schiller (2004)	Positive
Rubinstein (2006)	Negative
Bossaerts and Odegaard (2006)	Negative
Mc Laney (2009)	Negative
Al-Malcawi et.all (2010)	both positive and negative
Rees and Valentincic (2013)	Negative
Baker and Weigand (2015)	Negative
Tanushev (2016)	both positive and negative

As it could be seen from the Table 1, Fama (1978), Battacharya (1988), and Schiller (2004) think positively about the M&M dividend irrelevance theorem. Rubinstein (2006), Bossaerts and Odegaard (2006), Mc Laney (2009), Rees and Valentincic (2013), and Baker and Weigand (2015) think negatively about the M&M dividend irrelevance theorem. Van Horne (1971), Black (1976), Copeland and Wetson (1988), Al-Malcawi (2010), and Tanushev (2016) have both positive and negative opinions about the M&M dividend policy theorem.
It is interesting that, after Rubinstein (2006), all writers have negative opinions although some of them have positive opinions in addition of their negative opinions about the dividend policy irrelevancy theorem. However, when it is investigated from Bossaerts and Odegaard (2006), Mc Laney (2009), Al Malcavi et all. (2010), Rees and Valentincic (2013), Baker and Veigand (2015), and Tanushev (2016), there have not seem any Rubinstein (2006) as a source in the source lists or footnotes of their source lists. This means that these writers are independent of the Rubinstein (2006).
This shows that an important writers of finance literature do not accept the M&M dividend policy – firm value irrelevancy theorem.

The acceptance level of the M& M dividend policy theorem is shown at the Table 2 below:

Table 2: Summary of the Direction of the Critiques

Direction of the Critique	Number of the Writers	% Of Total Critiques
Positive critiques	3	16.67
Both positive and negative critiques -positive critiques	5	27.78
Total positive critiques	8	44.45
Negative critiques	5	27.78
Both positive and negative critiques -negative critiques	5	27.78
Total negative critiques	10	55.55
Total opinion	18	100

As it could be seen from the Table 2, the number of negative critiques is more than that of positive critiques. The five writers have both positive and negative opinions about the M&M dividend policy theorem. For this reason, eight opinions are positive and ten opinions are negative. This means that 55.55
% of the opinions are negative. They do not accept the dividend irrelevancy proposition of the M&M. They are 10 writers of 13 writers investigated. However, the 5 writers of the 10 writer have positive opinions, too. The acceptance side is weaker than that of the rejection side.

They are 8 writers of 13 writers and the 5 of the writers have negative opinions, too. The only 3 writers have positive opinions about the theorem.
The positive critiques are summarized at the Table 3 below.

Table 3: Summary of Positive Critiques

Writer	Positive Critique
Van Horne (1971)	- the favorable effect upon share price is due to the investment decision and expectation of future performance, and not to the dividend decision -there is no informational content of dividend Policy - there may be no systematic preference in the market as a whole for current dividends - at the margin, the market may behave in a manner consistent with the irrelevance proposition.
Black (1976)	- a company's dividend payment or not payment is not important because if it pays firm value increases as payment and if does not pay the amount is used in investments - the owners have ways to get cash
Fama (1978)	-when a firm's securities are protected by me- first rules, the firm's dividend decision determines how the wealth of its shareholders is split between dividends and outstanding value, that is retained earnings, but the sum of the two components of shareholder wealth is unaffected by the dividend decision
Copeland and Wetson (1988)	-dividend payout does not affect the value of the firm
Battacharya (1988)	-the theorem is M&M's initiation of integrated after-tax analysis of dividend and debt supply policies of firms - the theorem is planting seeds for the development of economic modeling of unexplained phenomena, such as the "informational content" of dividends for stock prices
Schiller (2004)	-the M&M theory freed the financial scientists from financial thinking that is tied to artificial categories of thought and led the scientists to thinking of the firm as a whole as an entity that merely divides up its cash flow among different classes of claimants
Al-Malcawi et.al (2010)	- the value of a firm is independent of its dividend policy in perfect capital markets
Tanushev (2016)	-the significance of this fundamental theory is undeniable and it is used as a basis for further development of the knowledge of the dividend policy

The negative critiques are summarized at the Table 4 below.

Table 4: Summary of Negative Critiques

Writer	Negative Critique
Van Horne (1971)	-different tax rates and different applications about dividend tax and capital gain tax cancels the M&M dividend policy irrelevancy
Black (1976)	- if taxes are considered, even the status of tax of the investors, firm value is affected; this is valid for paying, not paying, and partial paying dividend - stock market prices are affected from each other's dividend paying status
Copeland and Wetson (1988)	-in a world with personal as well as corporate taxes, the possibility arises that dividend may affect value
Rubinstein (2006)	-after 100 per cent dividend payment, the corporation's stock price should be zero -there is a paradox between the two articles of Modigliani and Miller (1958 and 1961) about dividend irrelevancy theorem explanation

Bossaerts and Odegaard (2006)	-dividend irrelevancy is only valid under assumptions of no taxes; firms do a disservice to shareholders when paying dividends because of the higher tax rates than that of the capital gains
Mc Laney (2009)	-the M&M took the separation theorem slightly further by asserting that the value of a share will be unaffected by the pattern of dividends expected from it - M&M's assertion does rely on several assumptions of dubious validity in the real world. There are some limitations of these assumptions and these should be considered
Al-Malcawi (2010)	- the M&M dividend policy theorem is not valid in non-perfect capital markets
Rees and Valentincic (2013)	-basic assumptions of M&M dividend irrelevance theorem such as perfect markets, rational behavior and perfect certainty clarify some of the circumstances in which we might find a positive valuation effect of dividends
Baker and Weigand (2015)	-dividend policy can affect shareholder wealth because of market imperfections or behavioral considerations
Tanushev (2016)	-because of the strict assumptions it is based on, MM's theory remains an idealized model not applicable in its entirety in practice due to a number of market imperfections in the real World

4. Replies to the Negative Critiques by the Modigliani&Miller

4.1. Cancellation of Some Assumptions Could Do the Theorem Invalid

4.1.1 Reply to Imperfections Generally

Mc Laney (2009) thinks that M&M's assertion does rely on several assumptions of dubious validity in the real world. There are some limitations of these assumptions and these should be considered. Rees and Valentincic (2013) think that basic assumptions of M&M dividend irrelevance theorem such as perfect markets, rational behavior and perfect certainty clarify some of the circumstances in which we might find a positive valuation effect of dividends. Baker and Weigand (2015) think that dividend policy can affect shareholder wealth because of market imperfections or behavioral considerations. Tanushev (2016) thinks that because of the strict assumptions it is based on, MM's theory remains an idealized model not applicable in its entirety in practice due to a number of market imperfections in the real world. Al-Malkawi (2019) thinks that the M&M dividend policy theorem is not valid in non-perfect capital markets.

M&M (1961:428, 431-432) think about rational behavior or behavioral consideration that symmetric market rationality cannot be deduced from individual rational behavior in the usual sense since that sense does not imply imputing rationality to others. It may imply a choice behavior inconsistent with imputed rationality unless the individual actually believes the market to be symmetrically rational. For if an ordinarily rational investor had good reason to believe that other investors would not behave rationally, then it might well be rational for him to adopt a strategy he would otherwise have rejected as irrational. The M&M says that, their rational behavior assumption rules out the possibility of speculative bubbles wherein an individually rational investor buys a security he knows to be overpriced in the expectation that he can resell it at a still more inflated price before the bubble bursts. M&M think that market imperfection is not clear. It is easier to say than to do principally because there is no unique set of circumstances that constitutes "imperfection". They say that from the standpoint of dividend policy, what counts is not imperfection per se but only imperfection that might lead an investor to have a systematic preference as between a dollar of current dividends and a dollar of current capital gains. Where no such systematic preference is produced, we can subsume the imperfection in the random error term always carried along when applying

propositions derived from ideal models to real world events. At the same time, even where we do find imperfections that bias individual preferences such as the existence of brokerage fees which tend to make young accumulators prefer low payout shares and retired persons lean toward income stocks, such imperfections are at best only necessary but not sufficient conditions for certain payout policies to command a permanent premium in the market.

4.1.2. Reply to Different Dividend Tax and Capital Gain Tax Rates

Van Horne (1971) thinks that different tax rates and different applications about dividend tax and capital gain tax cancels the M&M dividend policy irrelevancy. Dividend tax is paid immediately while capital gain tax is paid after the stock is sold. This is a reason for retention preference by investors, so the M&M dividend policy irrelevancy does not work for this case. Black (1976) thinks that if taxes are considered, even the status of tax of the investors, firm value is affected, this is valid for paying, not paying, and partial paying dividend. Copeland and Wetson (1988) thinks that in a world with personal as well as corporate taxes, the possibility arises that dividend may affect value. Bossaerts and Odegaard (2006) believes that dividend irrelevancy is only valid under assumptions of no taxes. M&M (1961:431-432) The M&M think that tax differential between capital gains and dividend income is actually an imperfection. However, it does not affect the M&M dividend policy theorem. The reason of not producing of low payout companies a premium at stock price is systematic irrationality on the part of the investing public. However, M&M (1966:345-346) think that the picture becomes considerably more complicated about some other weakening in assumptions (or imperfections) such as to allow for the present tax subsidy on capital gains and for the existence of substantial brokerage fees and flotation costs. Under this conditions, a firm's dividend policy can be expected to have an effect on its market value though the precise amount of the effect is impossible to determine a priori. Unlike the case of corporate debt, the tax subsidy to capital gains is not a constant but varies widely from investor to investor by virtue of the partial exclusion of intercorporate dividends.
Modigliani (1988:155-156) replies in advance to Bossaert and Odegaard (2006) 's critiques that at least under the M&M 1961 assumption that investment policy is independent of dividend policy, a company paying dividend will increase the flow of taxes and reduce the net of tax stream received by the public at least as long as the alternative to paying dividends is to buy back equity. The effect on the value of a corporation can then be assessed by capitalizing the stream of tax losses. If current dividend is paid forever, its effect to the firm value will be negative. That is the value decreases. However, Modigliani adds that the dividend payments are not forever and certain. They are short term oriented, not long term oriented. He thinks that even the effect of taxes on the firm value is accepted, the effect could easily be swamped by other factors such as the lack of investment opportunities, restraint in buying back one's own share because of IRS disapproval or convention, or signaling.

4.1.3. Reply to the Uncertainty Conditions

Rees and Valentincic (2013) thinks that if assumption of perfect certainty is cancelled, the firm value could be changed.
M&M (1961: 427, 429) replies to the opinion that all this is not to say that there are insuperable difficulties in the way of developing a testable theory of rational market valuation under uncertainty.[3] On the contrary, their investigations of the problem to date have convinced them that it is indeed possible to construct such a theory though the construction is a fairly complex and space-consuming task. The M&M say that they will set a new theory about

valuation under uncertainty condition in which dividend policy will place an addition of other factors affecting valuation. M&M assert that by the assumption of symmetric market rationality, current valuation is unaffected by differences in dividend payments in any future period and thus that dividend policy is irrelevant for the determination of market prices, given investment policy. They add at the footnote 27 of the same page (p.429) that the assumption of symmetric market rationality is sufficient to derive this conclusion but not strictly necessary if we are willing to weaken the irrelevance proposition to one running in terms of long-run, average tendencies in the market. Individual rationality alone could conceivably bring about the latter, for over the long pull rational investors could enforce this result by buying and holding undervalued securities because this would insure them higher long-run returns when eventually the prices became the same. However, they might have a long, long wait.
M&M (1966: 345-346) think that their dividend irrelevancy proposition (the proposition 4) is still valid even uncertainty conditions such as certainty conditions. They still assert that dividend policy serves to determine only the division of the stockholders' return as between current cash receipts and capital appreciation; and the division of the firm's equity financing as between retained earnings and external flotations.
Miller (1988:104) replies to Rees and Valentistic (2013)'s opinion that he does not separate the two conditions of certainty and uncertainty. He says that the dividend invariance proposition stated only that given the firm's investment decision, its dividend decision would have no effect on the value of the shares. The added cash to fund the higher dividend payout must come from somewhere and with investment given that somewhere could only be from selling off part of the firm. As long as the securities sold off could be presumed sold at their market determined values, then whether the analysis was carried out under conditions of certainty or uncertainty, the whole operation of paying dividends, investment given could be seen as just a wash a swap of equal values not much different in principle from withdrawing money from a passbook saving account.

4.2. Reply to Rubinstein's Two Critiques

4.2.1. Conflict Between M&M (1958) and M&M (1961)

Rubinstein (2006) criticizes that dividend irrelevancy is transparent and there is a conflict between the M&M (1958) and the M&M (1961) about dividend policy irrelevancy.
The M&M (1958:287-288) say that caution is indicated especially with regard to their test of Proposition II, partly because of possible statistical pitfalls and partly because not all the factors that might have a systematic effect on stock yields have been considered. In particular, no attempt was made to test the possible influence of the dividend payout ratio whose role has tended to receive a great deal of attention in current research and thinking. The M&M say that there are two reasons for this omission. First, their main objective has been to assess the prima facie tenability of their model, and in this model, based as it is on rational behavior by investors, dividend per se play no role. Second, in a world in which the policy of dividend stabilization is widespread, there is no simple way of disentangling the true effect of dividend payment on stock prices from their apparent effect, the latter reflecting only the role of dividends as a proxy measure of long-term measure anticipations. The difficulties just mentioned are further compounded by possible interrelations between dividend policy and leverage. In the footnote 43 at p.289 they suggest that failure to appreciate this difficulty is responsible for many fallacious, or at least unwarranted, conclusions about the role of dividends. In the footnote 44 at the same page, they point out that in the sample of electric

utilities, there is a substantial negative correlation between yield and pay- out ratios, but also between payout ratios and leverage, suggesting that either the association of yields and leverage or of yields and pay-out ratios may be (at least partly) spurious. However, these difficulties do not arise in the case of the oil industry sample. A preliminary analysis indicates that there is here no significant relation between leverage and payout ratios and also no significant correlation (either gross or partial) between yields and payout ratios.

The M&M (1958:289-290) says that in the case of retaining earnings, suppose that in the course of its operations the firm acquired I dollar of cash without impairing the earning power of its assets. If the cash is distributed as a dividend to the stockholders, their wealth Wo, after the distribution will be[4] :

$$W_o = S_0 + I = (\bar{X}_0 / P_k) - D_0 + I \qquad (1)$$

Where:

$\bar{X}_0$ represents the expected returns from the assets exclusive of the amount I in question. If, however the funds are retained by the company and used to finance new assets whose expected rate of return is p* [5], then the stockholders' wealth would become[6]:

$$W_1 = S_1 = [(\bar{X}_0 + P^*I)/ P_k] - D_0 = S_0 + (p^*I / P_k) \qquad (2)$$

They say that clearly $W1 \leq \geqq W0$ as $p^* \leq \geqq pk$ so that an investment financed by retained earnings raises the net worth of the owners if and only if $p^* > pk$.

The M&M (1958) means that if there is no dividend payment because of retained earnings, the firm value increases. The condition of $p^* > pk$ is valid for all the investment of the firm. It does not affect the opinion of the M&M that not to distribute the profit and transfer it to the retained earnings (self-financing) increases the firm value. It is against to the dividend irrelevancy opinion of M&M. In this point, Rubinstein seems right. The M&M (1961) accepts that the dividend and retained earnings is equal and what is important is their total, that is rate of return. For this reason, distributing dividend or not distributing is not important for firm value. The important thing about that is the return.

It seems that, as if Rubinstein is right about the conflict between the M&M (1958) and M&M (1961). The first publication separates effects of dividends and retained earnings. The second publication does not separate them. This means an adoption of the irrelevancy about dividend policy. It could be thought that the M&M's opinion is different in 1958 and 1961.

4.2.2. Fallacy of "100% Distribution of the Profit Make Value of the Stock Zero"

Rubinstein (2006) uses a sentence in a parenthesis in the p.142 that "a dividend of 100% of the firm would be a complete liquidation after which the stock would be worth zero".

M&M (1961:412) replies to this critique via their following fundamental principle:" the price of each share must be such that the rate of return (dividends plus capital gain per dollar invested) on every share will be same throughout the market over any given interval of time". They already do not separate dividend and capital gain in their 1961 paper. 100% dividend does not decrease the firm's value at all, especially to the zero. Its reason is the shareholders get their return as a cash instead of keeping it in retained earnings on the balance sheet. The firm value is not affected.

4.3. Reply to the Similarity of M&M's Dividend Policy Theorem with Fisher's Separation Theorem

McLaney (2009:328-329) thinks that M&M took the separation theorem slightly further by asserting that the value of a share will be unaffected by the pattern of dividends expected from it.

Miller (1988:103) says that they (Himself and Modigliani) are opt for a Fisherian rather than the Marshallian representation of the firm. He says that Irwing Fisher's view of the firm –now the standard one in finance, but then just becoming known- impounds the details of technology, production, and sales in a black box and focuses on the underlying net cash flow. He adds that firm for Fisher was just an abstract engine transforming current consumable resources, obtained by issuing securities, into future consumable resources payable to the owners of the securities.

4.4 Summary of the Replies of the M&M

Table 5: Summary of Replies by the Modigliani and Miller

Van Horne (1971), Copeland and Wetson (1988), Black (1976), Bossaerts and Odegaard (2006) - dividend income tax, capital gain tax and their timing affect the firm value	Modigliani (1988) -investment policy is independent of dividend policy -the dividend payments are not forever and certain - even the effect of taxes on the firm value is accepted, the effect could easily be swamped by other factors such as the lack of investment opportunities, restraint in buying back one's own share because of IRS disapproval or convention, or signaling.
Black (1976)	No Reply by the M&M.
Rubinstein (2006) -there is a paradox between the two articles of M&Miller (1958 and 1961) about dividend irrelevancy theorem explanation	No Reply by the M&M.
Rubinstein (2006) - after 100 per cent dividend payment, the corporation's stock price should be zero	M&M (1961) Dividend or retained earnings is not important for the stockholders. What the important is profit for the increase of firm value.
McLaney (2009), Rees and Valentincic (2013), Baker and Weigand (2015), Tanushev (2016), and Al-Malkawi (2019) - imperfections such as in markets, certainty, rational behavior are reasons for to change firm value	M&M (1961): -symmetric market rationality cannot be deduced from individual rational behavior in the usual sense since that sense does not imply imputing rationality to others - if an ordinarily rational investor had good reason to believe that other investors would not behave rationally, then it might well be rational for him to adopt a strategy he would otherwise have rejected as irrational. - market imperfection is not clear. It is easier to say than to do principally because there is no unique set of circumstances that constitutes "imperfection".
McLaney (2009) -the M&M (1961) is only the slightly further of the separation theory of Fisher	Miller (1988): -Himself and Modigliani are opted for a Fisherian rather than the Marshallian representation of the firm. -he thinks that firm for Fisher was just an abstract engine transforming current consumable resources, obtained by issuing securities, into future consumable resources payable to the owners of the securities.
Rees and Valentincic (2013) -if assumption of perfect certainly is cancelled, firm value could be changed	M&M 1961: -M&M say that they will improve a new theory under uncertainty about valuation and dividend policy will take place a factor affecting firm value in addition of the other factors M&M (1966):

	-the dividend irrelevancy proposition (the proposition 4) is still valid even uncertainty conditions such as certainty conditions, dividend policy decides division of equity financing between stockholders and retained earnings Miller (1988): -he does not separate the two conditions of certainty and uncertainty - the dividend invariance proposition stated only that given the firm's investment decision, its dividend decision would have no effect on the value of the shares

5. UNREPLACED CRITIQUES BY THE M&M AND SOME COMMENTS OF MINE

Black (1976) says that stock market prices are affected from each other's dividend paying status. This is right for capital markets. The owners of stock (or stock investors), watch the other companies if they distribute dividend or not. If the other companies pay dividend and their company do not pay, they think about their own company or companies negatively. In real life, this could be reality in an important degree. So, a cross correlation is possible and could be common for the investors investing in stock markets.

However, in my opinion, the purpose of the M&M dividend policy irrelevancy hypothesis is not explained cross correlation among the corporations about payment or not payment or less – more payment. Its purpose is what important is profit. Its distribution to the investors or not is not important because the part of undistributed profit waits in "retaining earning" and its still rights of the stock owners. Actually, Black (1977) accepts these opinions. He says about the comparison dividend payment with other companies an addition opinion to his M&M opinion.

Rubinstein (2006) says that the M&M (1958) think that retaining earnings increases firm value while M&M (1961) think that retaining earnings and dividend payment is equal and both of them do not affect firm value. This is not replied by M&M papers via joint papers such as M&M (1958), M&M (1961) and separate written papers such as Modigliani (1988) and Miller (1988). This was explained in Yilmaz (2021). It was been explained at the Section 4 (4.2.1. Conflict Between M&M (1958) and M&M (1961) in this article. The general reply by me is that Rubinstein is right about that. The detail could be found from Yilmaz (2021).

I have some critiques of Rubinstein (2006)'s opinion "after 100 per cent dividend payment, the corporation's stock price should be zero". It means that if a company does not pay dividend its value will be zero. In my opinion, if a firm operates, continues to produce, continues to employ its workers and other employees, continues to sell its product or products, continues to collect its account receivables, why is its value zero? I think it is extreme comment by the Black. It is only returning or not returning problem of profit to cash. Not a zero-value problem. Profitability, social responsibility, corporate governance, company size etc. are other factors affecting firm value.

6. CONCLUSION

While Fama (1978), Battacharya (1988), and Schiller (2004) think positively about the M&M dividend irrelevance theorem, Rubinstein (2006), Bossaerts and Odegaard (2006), Mc Laney (2009), Rees and Valentincic (2013), and Baker and Weigand (2015) think negatively about the M&M dividend irrelevance theorem. Some financial scientists such as Van Horne (1971), Black (1976), Copeland and Wetson (1988), Al-Malcawi (2010), and Tanushev (2016) have both positive and negative opinions about the M&M dividend policy

hypothesis. 55.55% of the finance scientists think about the hypothesis negatively. This is majority investigated in this article. This shows that there is still no consensus about the M&M dividend policy hypothesis. After 62 years of the hypothesis, there has not been an agreement about the hypothesis. They question the hypothesis and do not accept it as a valid theory. Their most important question is the assumptions such as perfect certainty, rational behavior as you could see from the opinions of McLaney (2009), Rees and Valentincic (2013), Baker and Weigand (2015), Tanushev (2016), and Al-Malkawi (2019). They generally think that, if these assumptions were not exist, the firm value could change with dividend policy changes.

Rees and Valentincic (2013) thinks that if assumption of perfect certainly is cancelled, firm value could be changed. I could add to the M&M's replies to this assertion like that: Uncertainty actually increases profit. According to my MBA experience in the U.S.A., several finance professors used to write to the blackboard as "risk up, profit up, risk down, profit down". It means that risk and profit are directly proportional. If risk is accepted as uncertainty, as risk increases the discount rate increases, too. At the same time, according to the rule "risk up, profit up, risk down profit down" profits and cash inflows increase, so the firm value could not change, or change in very unimportant manner something like 0.0003 %. For this reason, it needs not to be given extreme-meaning for uncertainty in the mean of firm value. Uncertainty is already balanced by increased cash inflows in the numerator in addition to the risk premium in the denominator. I accept that the plenty of assumption is an important problem for this hypothesis to be accepted. Actually, in my opinion, the assumptions no buyer or issuer of securities is large enough for his transactions to have an appreciable impact on the then ruling prices, all traders have equal and costless access to information, no brokerage fees, transfer taxes, or other transaction costs are incurred when securities are bought, sold, or issued, and no tax differentials between dividends or capital gains all are not realistic. In real life, these assumptions almost impossible to be realized. It could be thought that these assumptions are obstacles to be accepted the dividend policy irrelevancy by most of the financial theoreticians. Van Horne (1971), Copeland and Wetson (1988), Black (1976), Bossaerts and Odegaard (2006) criticize the hypothesis about tax differentials between dividend income tax and capital gain tax and their timing affect from the point of view of firm value. They believe that the differences about the tax rates could affect the firm value. They could be right about that. For very big companies, the differences between the tax rates could be huge quantities and affect firm value.

Mc Laney (2009) does not see the M&M dividend irrelevance theorem as an innovation. He sees it a slightly further version of Fisher's Separation theorem. In my opinion, the unimportance opinion of the M&M irrelevancy theorem is an injustice because it is a financial innovation. The theorem is the one of a couple of pioneer financial innovations. Even it is not accepted exactly, it is still very important for the theory of corporate finance. Payout, not payout, or less payout of dividend is important for corporations. Actually, the M&M think that these three choices is not important for firm value, that is, stock value. This comforts a corporation in need of cash or financing because this helps to protect a business from the pressure of investors who know and understand that the dividend application of a company does not affect the value of a business. As it could be seen, from the discussions, the dividend policy proposition could not turn into a theory yet. It is still a hypothesis.

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