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MM, Coase, and Corporate Finance

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Harry DeAngelo
University of Southern California
Jonathan M. Karpoff
University of Washington and ECGI

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Abstract

Despite cosmetic similarities, the Modigliani-Miller and Coase Theorems provide conceptually distinct insights for analysis of corporate financial policy and governance that are driven by substantively different economic considerations, with neither theorem a special case of the other. Coase's main lesson is the existence of opportunity-cost pressure toward allocative efficiency, which in a corporate context means pressure to increase firm value. Such pressure plays no role in the MM Theorem, which indicates that financial policy is indeterminate (because all choices are equally valuable) and whose main lesson is that investment policy is the foundational driver of firm value. Contact: hdeangelo@marshall.usc.edu and karpoff@uw.edu

Harry DeAngelo

University of Southern California

Jonathan M. Karpoff

University of Washington

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Harry DeAngelo* and Jonathan M. Karpoff**

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Contact: hdeangelo@marshall.usc.edu and karpoff@uw.edu

*Kenneth King Stonier Chair Emeritus, Marshall School of Business, University of Southern California.

**Washington Mutual Endowed Chair in Innovation, Foster School of Business, University of Washington.

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MM, Coase, and Corporate Finance

1. Introduction

The MM Theorem and the Coase Theorem are two of the most important contributions to modern economics, garnering Nobel Prizes for their authors and serving as foundations for revolutions in the analysis of corporate financial policy (Modigliani and Miller (1958, 1961, MM)) and property rights, externalities, and contracting to foster efficient use of real resources (Coase (1960)). The MM and Coase Theorems are structurally similar in that both describe idealized conditions under which variables of economic interest are irrelevant. In MM, the capital structure and dividend policy chosen by a firm do not affect firm value, while in Coase, the initial allocation of property rights does not affect the equilibrium allocation of those rights.

This structural similarity between MM and Coase has fostered a common view that the two theorems are essentially the same idea applied to different economic settings. In a recent JEL survey paper, for example, Medema (2020, section 6.3) highlights a long-standing claim in the literature that the MM Theorem simply takes Coase's general logic and applies it to corporate financial policy. Medema (2020, p. 1101) traces this view back to Monissen (1976), whom he quotes as saying that MM "can be interpreted as a special case of the more general Coase Theorem." He also cites statements by Hirshleifer (1973) and Alchian and Demsetz (1973) that point to a tight logical connection between MM and Coase. This claim persists in recent contributions to the corporate finance literature, with Brickley and Smith (2022, pp. 40-41) saying that "one might think of the M&M proposition as a special case of the Coase Theorem" and Aivazian and Callen (2023, abstract) saying that MM is "subsumed by the Coase Theorem."

This paper's central message is that the MM and Coase Theorems provide conceptually distinct insights that are driven by substantively different economic considerations, with neither theorem a special case of the other. By clarifying their distinct insights, we highlight the unique and fundamental contributions of MM for understanding corporate financial policy and Coase for understanding corporate governance.

Our analysis also challenges the prevailing wisdom in the economics literature – as articulated, e.g., by Medema (2020, p. 1046) and Thaler and Imas (2025, pp. 70-72) – that Coase's main contribution is to

provide a general result about the irrelevance of endowed allocations when contracting is costless. Coase's far more important insight is identifying the pervasive role of opportunity-cost pressure in fostering allocative efficiency in real-world – i.e., costly – contracting environments, including but not limited to the way corporate governance systems mitigate agency-related efficiency losses.

The notion that the MM Theorem nests as a special case of the Coase Theorem is easily refuted because Coase assumes costless contracting, while MM's conclusion holds in incomplete capital markets where the costs of trading some patterns of state-contingent claims are prohibitively high. The essential conditions for the MM Theorem to hold are fixed investment by the firm, no taxes, strong-form market efficiency, frictionless trading of securities by price-taking investors, and the absence of firm-specific monopoly power in security supply. The MM Theorem is consistent with, but does not require, the far more powerful (Coasian) ability to negotiate and enforce minutely detailed contracts at zero cost.

The MM and Coase Theorems also differ in that they advance incompatible claims about the endogenous decisions they analyze. MM establish that firm value is constant for all feasible debt-equity and dividend decisions and is determined by the firm's (assumed-to-be-fixed) investment decisions. All feasible financial decisions are equally good, which means they are *indeterminate*. In Coase, by contrast, the optimal allocation of resources is *strictly determinate* and is always selected in equilibrium when contracting is costless regardless of who initially has the property rights to make decisions.

The crux of the difference is that opportunity-cost pressure in Coase leads contracting parties to arrive at the uniquely optimal set of decisions whereas, in MM, no such pressure is at work to induce the firm to select any specific financial policies. Opportunity-cost pressure refers to incentives that contracting parties have to capture net gains, or avoid net losses, by avoiding strictly suboptimal decisions. In MM, the indeterminacy (or "irrelevance") of a firm's financial choices follows from the pie-slicing nature of those choices when investment is fixed, taxes are absent, and capital markets are strong-form efficient and competitive. Financial decisions simply divide a given total cash-flow pie into slices with different shapes, and markets rationally price each slice so that the constituent present values always sum to the same total.

When all feasible choices yield the same total market value, as they do under MM's pie-slicing conditions, there is no opportunity-cost pressure present – or needed – to shape the firm's financial choices.

The most important difference between the MM and Coase Theorems concerns the distinct lessons they provide for corporate finance outside their idealized theoretical settings. The key lesson from MM is not that financial policy is irrelevant. Rather, it is that investment policy is the foundational driver of firm value and that financial policy potentially matters because of factors excluded from MM's analysis (such as taxes, bankruptcy costs, and agency problems). This lesson is well understood in the literature, central to basic textbook discussions of corporate financial policy, and the foundational premise of the most important contributions to modern corporate finance theory, including the early pathbreaking work of Robichek and Myers (1966), Jensen and Meckling (1976), Myers (1977), Myers and Majluf (1984), and Jensen (1986).

In contrast, the important lesson from Coase is often misunderstood. Coase's key lesson does not concern the irrelevance of the initial assignment of corporate decision rights. Rather, his main point is that opportunity-cost pressure to improve allocative efficiency is a pervasive phenomenon. Most corporate finance theory is grounded in the Fisher Separation principle, which indicates that firm value is a proper index of the welfare of a firm's owners. Consequently, in a corporate context, opportunity-cost pressure to improve allocative efficiency typically implies pressure to increase firm value. Opportunity-cost pressure exists whenever choices matter and is not at work when a firm's choices are all equally good, e.g., as with the financial decisions analyzed by MM. It is not limited to costless contracting settings, and it applies to all aspects of corporate decision-making, not just those involving externalities.

We begin in section 2 with a discussion that highlights how Coase's opportunity-cost logic regarding externalities applies to contracting problems generally. Section 3 discusses the MM Theorem and delineates its similarities to, and differences from, the Coase Theorem. Section 4 analyzes what the literature has said about the relation between the two theorems. Section 5 summarizes key points.

2. What Coase's logic teaches us about contracting and corporate finance

Coase's logic identifies a pervasive source of ongoing economic pressure to mitigate the value losses that inevitably arise in the real world of limited information, costly transacting, and imperfectly aligned incentives. This insight shifts the focus of research to recognize not only the prospect of losses from agency problems and contracting frictions, but also the emergent nature of value-increasing corporate governance behaviors – including private contracting and legal rulings – that arise to mitigate losses as they become apparent. This section traces the path from Coase (1960) to this important message and briefly summarizes prominent governance phenomena that reflect Coasian opportunity-cost pressure.

Coase (1960) studies situations in which the actions of one party have spillover (externality) effects on another party. As an example, suppose a factory creates waste that, if dumped into a nearby river, adversely affects downstream users. Coase shows that, when contracting is costless, the equilibrium allocation of resources is the same regardless of how property rights to choose the level of spillovers are initially specified, i.e., whether the factory initially owns the right to pollute or downstream users initially have the right to a clean river. The reason is that the parties will negotiate a deal that captures all possible gains. The contracted equilibrium outcome – a polluted or clean river – depends on whether the benefits of pollution outweigh the costs, not on who initially holds the rights to determine the level of spillovers.

Coase's central insight is that the opportunity cost of using a resource is felt by all potential users. The cost to the factory owner of dumping waste into the river is not zero even if the owner is endowed with a legal right to pollute because he or she will consider the opportunity cost of payments from downstream users to keep the river clean. Similarly, if downstream users initially own the right to a clean river, they will consider the opportunity cost of foregone payments from the factory owner to use the river to dump waste. Whether the river is kept clean or used as a receptacle for waste depends on which use generates the most net benefits, but either way, everyone considers the full cost of foregoing the alternate use. In modern parlance, the spillover (or externality) effects are fully internalized in the negotiation between the factory owner and downstream users.

As Coase emphasized, the initial legal assignment of rights can affect resource allocations if contracting costs are positive. The demands of downstream users, for example, might not bear on the factory owner's decision to pollute if nontrivial contracting costs deter them from negotiating with the factory. Coase devotes much of his 1960 paper to the analysis of common law court decisions in which the assignment of rights had material effects on resource allocations precisely because contracting costs were positive.

Coase's main point is that, *even with positive contracting costs, opportunity-cost pressure persists*, nudging judges toward legal rulings and economic agents toward contractual agreements that allocate resources more efficiently. Indeed, Coase emphasizes the importance of opportunity-cost pressure when contracting costs are positive, contrasting this more realistic approach to theoretical models with frictionless contracting that he called "blackboard economics" (Coase (1964, p. 195)).

Coase's analysis was extended and clarified by Harold Demsetz and others. Demsetz (1972), for example, shows that the final allocation of resources in Coase's (1960) analysis can differ if a change in the initial assignment of property rights creates wealth transfers that alter the structure of demand. Demsetz (1967, 2011) points out that contracting costs are analogous to the costs of other resources used in production such as labor and capital. He accordingly cautions against inferring that actual resource allocations are "inefficient" in costly contracting settings simply because they differ from theoretical Nirvana counterfactual predictions in which contracting is assumed to be costless.

Given our corporate finance focus, the important implication from Coase's analysis is that opportunity-cost pressure to improve allocative efficiency is relevant for contracting in general, not just contracting over spillover effects. This point was recognized early by Demsetz (1972, p. 16):

> It is not generally appreciated that Coase's reasoning has … applications that extend beyond problems of the divergence between social and private cost … Private property takes the form of a bundle of rights, of which different components may be held by different persons. In the absence of significant negotiating cost, the use to which these property rights is put is independent of the identities of the owners since *each owner will be given market incentives to use his property right in the most valuable way.* [emphasis added]

In this passage, Demsetz generalizes a point he previously made that, when contracting is costless, the distortionary effects of monopoly power will be eliminated through contracts that expand supply in exchange for (price discriminatory) side payments; see Demsetz (1968, p. 33).

Coasian opportunity-cost pressure provides the foundation for many of the contracting mechanisms identified early in the history of corporate finance research and that serve as foundations for current research. Fama (1978, section VIII), for example, argues that Coase's logic implies the existence of pressure on managers to generate greater overall value. Jensen and Meckling (1976) discuss how security prices capitalize agency costs and how opportunity-cost pressure operates through takeover threats and the capital market in its role of information aggregator and price setter – arguments that echo Manne's (1965) earlier insight about the disciplinary role of the corporate control market. Fama (1978) also makes the point that costless contracting implies that any externalities across a firm's debt and equity security classes will be fully internalized so that investment decisions that maximize overall firm value will always be selected in equilibrium. Fama's point here is an application of Coasian opportunity-cost pressure. It is not the point made in the MM Theorem, which holds investment fixed.

The archetypal agency theory example of Coasian opportunity-cost pressure is the price-protection mechanism in Jensen and Meckling (1976) in which security prices reflect expected agency costs and create incentives for firms to design and market securities that motivate managerial behavior that is better aligned with the interests of a firm's owners. Other examples of opportunity-cost pressure are the governance mechanisms that drive incentives for managers to increase firm value, including the disciplinary role of the corporate control market (Manne (1965)), shareholder activism (Denes, Karpoff, and McWilliams (2017), Brav, Jiang, and Li (2022)), board monitoring (Coles, Daniel, and Naveen (2024)), and incentive compensation (Jensen and Murphy (1990)).

We should note that, as Medema (2020) makes clear, Coase's paper has generated many extensions, applications, and criticisms. For example, behavioral economists criticize the Coase Theorem because lab experiments reject its prediction that equilibrium allocations are invariant to the endowed assignment of property rights; see, e.g., Thaler and Imas (2025, pp. 70-72). Previous commentators have debated the

meaning of these experimental results. However, we view the debate and the criticism that spawned it as largely beside the point for corporate finance theory because Coase's key lesson is not that the equilibrium decisions of a firm are independent of the initial assignment of corporate decision rights. Rather, it is the existence of opportunity-cost pressure to improve allocative efficiency, i.e., to increase firm value.

One way to summarize Coase's contribution is that it adds significant texture to Adam Smith's message about the beneficial influence of self-interest on resource allocation. His logic indicates that opportunity-cost pressure to improve resource allocation operates pervasively – in bargaining over externalities, in judicial rulings, and in contracting between principals and agents in corporate settings – and not just when explicit markets set prices that govern the production and distribution of goods and services. Coase's reasoning was so novel that, as Stigler (1988, pp. 74–79) recounts, all twenty Chicago economists at a dinner where Coase presented his analysis initially "strongly objected" to his argument as "heresy." By the end of the evening, all twenty had reversed themselves, and Stigler gave the title "Eureka!" to his chapter that discusses the episode.

3. The substantive differences between the MM and Coase Theorems

Here is a simple way to visualize the difference between MM and Coase. Consider two theories that differ in their predicted functional relationships that map a given (investment or financial) decision into firm value. In theory #1, all choices result in the same value – i.e., the value function is perfectly flat for all feasible choices. In theory #2, the value function reaches its maximum at a single (unique) choice. In #1, there is no opportunity-cost pressure to select any specific decision because every possible choice is as good as any other, i.e., "anything goes." In #2, any choice that differs from the decision that yields maximum value comes with opportunity-cost pressure for the firm to switch to the specific decision that yields the maximum on the value function. Theory #1, of course, describes MM on financial policy. Its irrelevance implication has nothing to do with opportunity-cost pressure. Coase's opportunity-cost pressure comes into play only when, as with theory #2, the choice under analysis affects firm value, e.g., the choice among mutually exclusive investment projects that have different NPVs.

This section discusses three themes that clarify the MM Theorem and how it differs from the Coase Theorem: (1) analytical differences between the two (sections 3.1 and 3.2), (2) aspects of MM that are often not appreciated (sections 3.3 to 3.6), and (3) the cosmetic similarity between MM and Coase (section 3.7).

3.1 Anything goes (MM) versus contracted outcomes matter (Coase)

MM delivered their financial policy irrelevance message in two installments. MM (1958) indicates that, in perfect markets and absent taxes, a firm cannot generate value simply by dividing the cash flows generated by a fixed investment policy among holders of equity, debt, or any other type of security. MM (1961) indicates that, under the same conditions, a firm cannot generate value by altering the mix of equity payouts in a given period between dividends and share repurchases or by making changes in payouts that are exactly matched by contemporaneous offsetting changes in outside capital raised.

The MM Theorem describes a firm's financial policy opportunity set: Holding investment fixed, all possible financial choices are equally good when there are no taxes and capital markets are competitive and strong-form efficient. MM hold investment fixed to avoid mistakenly attributing to financial decisions the value impact of varying investment. MM's analysis should thus be viewed as showing that, conditional on investment, financial policy per se does not affect firm value. When one treats investment as endogenous, it becomes clear that their financial policy irrelevance result assumes the absence of agency costs. The reason is that, with agency costs, different financial decisions lead to different degrees of warping of investment decisions (Jensen and Meckling (1976), Myers (1977), Jensen (1986)).

MM's analysis is silent about the firm's equilibrium financial choices because their framework contains no basis for selecting among the (equally good) feasible choices. In technical terms, financial decisions are indeterminate in MM.

Importantly then, MM's analysis does not explain a firm's financial choices. Since all financial choices are equilibrium solutions in MM, their analysis yields no refutable prediction about the choices firms make. Their theorem *is* refutable in terms of *valuations*. For example, MM predict that, holding investment fixed, changes in a firm's debt-equity ratio will leave firm value unchanged. That prediction is falsifiable using

observed security prices. The point here is that there is no debt-equity ratio that, if observed, would indicate that the MM Theorem is refuted. Anything goes is not a refutable hypothesis.

Although anything goes in equilibrium is the central implication of MM, anything goes would render Coase's (1960) analysis vacuous if it were a property of the equilibrium outcome in his model. Coase starts from the assumption that the choice made by the contracting parties – pollute the river or keep it clean – *does matter,* and his analysis predicts that the same (uniquely optimal) choice will be made in equilibrium independent of the initial allocation of property rights. Coase's analysis would have little import if the chosen pollution outcome were irrelevant, as is true of the choice among a firm's financial policies in MM.

3.2 Why anything goes in MM: Financial decisions are pure pie-slicing exercises

In MM's no-tax world, the assumption of fixed investment for the firm dictates that all feasible financial decisions simply divide the same total cash-flow pie – viewed on a date- and state-contingent basis and determined by investment policy – into different slices or packages of cash flows. There is no fooling of investors or market mispricing in strong-form efficient markets. Everyone understands that the same total cash flow is being generated (and distributed) by the firm at every date and in every state of nature under all feasible financial decisions when investment is fixed. Given perfectly competitive capital markets (as described in section 3.3), the market values of the various constituent cash flow slices always sum to the same total firm value, and so the MM Theorem obtains.

When all feasible choices yield the same firm value as they do under MM's pure pie-slicing conditions, there is no opportunity-cost pressure present – or needed – to avoid bad choices. One could not make a bad choice even if one wanted to.

3.3 The MM Theorem requires a competitive capital market, not costless contracting

The absence of firm-specific monopoly power in security supply is a property of all legitimate proofs of the MM Theorem, including the complete markets proof of Hirshleifer (1970, pp. 263-264) and the proofs of Stiglitz (1969, 1974), Fama and Miller (1972), and Fama (1978) that allow incomplete markets.

The latter proofs indicate that the MM Theorem does not require costless contracting because, with incomplete markets, investors effectively face prohibitive costs of trading some financial claims. These proofs all invoke assumptions that dictate that the firm's decisions do not affect the set of tradeable financial assets (packages of state-contingent claims).[1]

These assumptions are a requirement for a competitive capital market because, if a firm has the power to create or eliminate the tradability of unique state-claim packages, it is clearly not a price taker in the capital market. In their proof of the MM Theorem, Fama and Miller (1972, p. 151) assume that:

> Investors perceive that there are always perfect substitutes for any securities issued by an individual investor or firm, and individual investors and firms are "atomistic competitors" in the sense that their activities in the capital market have no effect on the prices of securities issued by other investors and firms. In short, as usual, we assume that investors and firms are price takers in the capital market.

This statement conforms with MM's (1958, p. 267) point that their analysis presumes "… that the shares concerned are traded in perfect markets under conditions of atomistic competition." Thus, MM's notion of perfect capital markets concerns frictionless trading of securities by parties who behave as price takers, not the far more powerful (Coasian) ability to negotiate and enforce complex contracts at zero cost.

The key point is that the MM Theorem assumes a perfectly competitive capital market in which the set of tradeable state-claim packages and their unit prices are treated as parametric by both firms and investors. The condition that unit prices are parametric to firms when making financial choices in MM is confirmable in general equilibrium analysis because pure pie-slicing decisions affect neither the aggregate supplies of, nor the aggregate demands for, state-claim packages; see, e.g., Stiglitz (1969, section I).

The necessity of a competitive capital market for MM is evident from Hirshleifer (1970, pp. 271-272) and Hagen (1976) who show that the MM Theorem fails when a firm has monopoly power to create or eliminate unique packages of state-contingent claims for trade in incomplete markets. The intuitive reason

[1] When markets are complete (as in Hirshleifer's (1970) MM proof), every possible package of state-contingent claims is always available to investors regardless of what a given firm does. Fama and Miller (1972, p. 151) and Fama (1978, p. 279) posit the existence of perfect substitutes for whatever securities a firm might issue. Stiglitz's (1969, 1974) riskless debt assumption ensures that the firm's financial decisions do not affect the vector space of state-contingent claims that investors may attain. See DeAngelo (1981) for more on this issue.

is that the firm's financial choices affect whether some state-claim packages are available at a finite price or unavailable at any price. The firm's financial decisions are still pie-slicing in nature, but the availability of some attractive types of slices (state-claim packages) depends on the firm's financial choices, and that is why the choice of financial policy is no longer irrelevant.

3.4 Fisher Separation, MM, and Coase

The MM Theorem, and indeed much of modern corporate finance theory, rests on the Fisher Separation principle, which indicates that optimal corporate decisions do not depend on the preferences of a firm's owners (Hirshleifer (1970, p. 14), Fama and Miller (1972, pp. 70-71)). Fisher Separation assumes strong-from efficient markets that are competitive in the same sense required for the MM Theorem (per section 3.3). In such markets, a firm's decisions affect owners only through personal wealth, with no effect on the set of available goods (packages of state claims) or their unit prices. Greater firm value means more wealth, hence greater consumption opportunities for every owner. Fisher Separation obtains because owners can trade out of their endowment positions. Each owner can take his or her wealth and make trades (at parametric prices) that move away from the pre-exchange share-ownership position in the firm to a post-exchange portfolio that is optimal for his or her idiosyncratic risk-return and consumption preferences.

When only wealth counts (because of Fisher Separation) and corporate decisions do not affect firm value – as in MM's analysis of financial policy – the personal wealth and therefore the trading opportunities of owners are invariant to the firm's choices. Consequently, every owner always can (and does) arrive at the same post-exchange (risk-return/consumption) portfolio position regardless of what the firm does, and so the firm's decisions do not affect the welfare of its owners.

Personal trading opportunities are a necessary, but not sufficient, condition for the MM Theorem. For example, the theorem fails when financial decisions are not pure pie-slicing exercises, even though a firm's owners can still trade securities in competitive markets. Such trading has no effect on financial decisions that alter the size of the corporate pie delivered to investors, e.g., when a firm takes on debt in the face of a corporate income tax with interest deductibility. All owners want financial policies that distribute a larger

total (after-tax) cash-flow pie to security holders, since the resultant greater wealth provides greater consumption opportunities. Trades among investors do not create a debt-related corporate tax shield. The firm must have the debt to capture a tax-shield benefit, and so its debt choice matters. The same reasoning applies when MM's assumptions are relaxed to allow corporate cash retention (per section 3.5).

The MM Theorem and Fisher Separation both generally fail in semi-strong-form efficient markets with asymmetrically informed investors (DeAngelo (2022, section VII.F)). Firm value does not gauge welfare because owners no longer can always trade securities at fair prices to reach portfolio positions best suited to their preferences. Different owners now want all firm decisions – including the financial decisions that are irrelevant under MM's assumptions – to be tailored to their unique personal preferences. ESG-related concerns of owners similarly cause Fisher Separation to break down.

Although Fisher Separation fails under plausible conditions, Coase's (1960) message about the role of opportunity-cost pressure in mitigating avoidable losses salvages its foundational implication for corporate finance theory, which is that the pursuit of value for owners is a sensible objective for firms. Coase's logic provides a sound basis for corporate laws and corporate charters that task boards of directors with using their business judgment to advance the general pecuniary interests of owners. This corporate governance architecture, which is pervasive in real-world firms, attenuates the losses that would otherwise plague corporate decision-making because of disagreements among owners who want the firm to pursue policies tailored to their preferences, including but not limited to ESG-related conflicts. Karpoff (2021), Hart and Zingales (2023), and DeAngelo (2024) analyze how governance architecture can address breakdowns in Fisher Separation, with the latter paper focused on the implications of Coase.

The connections among Fisher Separation, MM, and Coase thus come full circle. Fisher Separation is a basic premise of the MM Theorem, with both technically failing given even minor violations of their shared perfect markets conditions. Yet Coase's notion of opportunity-cost pressure rescues the main implication of Fisher Separation, which is that tasking managers with the pursuit of pecuniary benefits for a firm's owners is a sound foundation for a theory of corporate finance. As we next explain, MM's main lesson is similarly robust beyond the technical conditions under which their formal theorem is valid.

3.5 Robustness of MM's main lesson that investment is the foundational driver of firm value

With investment fixed in MM, the firm cannot vary its cash holdings because doing so would alter the asset side of its (economic) balance sheet and, in this sense, alter investment policy. Their theorem thus assumes away many real-world financial choices. Their admissible changes in financial policy are: (i) exactly offsetting changes in debt and equity, e.g., security swaps; (ii) changes in share repurchases that exactly offset dividend changes; and (iii) changes in distributions that exactly equal changes in capital infusions. Financial changes that are inadmissible in MM include: (i) a reduction in the debt-to-equity and equity-payout ratios that occur when the firm increases its cash balances through greater retention of profits; and (ii) changes in debt-maturity structure that increase cash balances when the firm reduces short-term debt obligations while increasing deferred debt obligations. Such financial decisions are not considered in the MM Theorem because they do not solely affect the right-hand side of the balance sheet.

Modifying MM's assumptions to allow variation in corporate cash retention implies that some now-feasible financial choices for the firm are strictly better than others – an important point first recognized by Jensen (1986).[2] Maximizing the wealth of the firm's owners requires that, over the life of the enterprise, the firm distribute the full present value of the free-cash-flow stream generated by investment. Optimal policies distribute full value, but the distributions can come at different dates and can be split among security classes. The timing is irrelevant in that the firm can put today's incremental cash retention in value-neutral (zero-NPV) investments and then parcel out the full resultant accumulation in future periods. The form is also irrelevant, e.g., distributions can all go directly to shareholders or, as Jensen emphasized, the firm could swap new debt for outstanding equity and then distribute more cash to holders of debt.

Although the form and timing of distributions do not affect firm value under these conditions, the total amount (in present-value terms) of a firm's distributions to investors does matter, which means that the firm's choice of financial policy is no longer irrelevant. This analysis says nothing about whether optimal

[2] Jensen's (1986) landmark contribution is analyzed in detail by DeAngelo, Kahle, and Skinner (2025). The discussion here is based on arguments in Ross (2005), DeAngelo and DeAngelo (2006), and DeAngelo, DeAngelo, and Skinner (2008, chapter 2) that were inspired by Jensen (1986).

or strictly suboptimal distributions will be chosen by the firm in equilibrium. It is silent on that issue. It simply indicates that some feasible financial choices are now better than others.

If we take an additional step and assume that contracting is costless, opportunity-cost pressure will lead the firm to distribute the full present value of the free-cash-flow stream generated by investment policy. This implication about the firm's equilibrium choice is from Coase, however, not MM. Any suboptimal financial policy, such as failing to distribute full value to investors, is now subject to Coasian opportunity-cost pressure such that a bargain will be reached in which no value is left on the table.

Importantly, MM's main lesson remains unchanged even when corporate cash retention is feasible so that some financial decisions are better than others. Investment policy is still the foundational driver of firm value. The reason this lesson from MM is robust is that the feasible scale of distributions to investors is still dictated by a firm's investments because, as we next discuss, distributions to holders of debt and equity cannot be manufactured out of thin air in rational markets.

3.6 The limited power of personal trades: Homemade dividends and leverage

Suppose a firm chooses a suboptimal financial policy that distributes less than the full value generated by its investments. Can't investors overcome that suboptimality by trading on personal account, e.g., by selling personally held shares or borrowing while using those shares as collateral?

No. The reason is that any policy chosen by the firm that falls short of distributing the full present value of its free-cash-flow stream implies a lower (than the maximum feasible) value for its securities. That, in turn, implies a strictly lower ceiling on the ability of the owners to obtain spendable cash from the sale of shares (homemade dividends) or from personal borrowing against their shareholdings (homemade leverage) in a strong-form efficient market. Personal trades by investors cannot overcome differences in the size of the pie delivered to investors under different decisions by the firm. The ability of investors to trade is necessary for the MM Theorem (per section 3.4), but it is not sufficient.

3.7 The cosmetic similarity between MM and Coase

The analyses of Coase and MM yield the following correct statements:

- **Coase**: In a world of costless contracting, the decisions of lawmakers who set the rules that specify the initial allocation of property rights to resources have no impact on the final allocation or use of those resources.

- **MM**: In a no-tax world with a firm's investment held fixed and with strong-form efficient markets, the debt-equity and dividend decisions made by the managers of the firm have no impact on the final overall risk-return portfolio positions attained by its shareholders.

The common element is that the final (chosen) allocation of resources across individual agents is unaffected by the decisions of lawmakers (Coase) and managers (MM).

These statements omit two important points of differentiation and thus create the false impression that Coase and MM deliver conceptually identical results. First, the same post-exchange allocation obtains in Coase's argument for all ex-ante property-rights rules, but obtains in MM's argument only for financial decisions that are purely pie-slicing in nature and not for other empirically important financial decisions and not for investment decisions. In short, Coase makes a universal claim about invariant final allocations, while MM make a restricted claim about the consequences of a specific subset of corporate decisions that satisfy a technical (pie-slicing) condition on cash flows.

Second, the statements mask the underlying difference in the economic considerations that lead to the results of MM and Coase. Opportunity-cost pressure to improve allocative efficiency drives Coase's result, whereas MM's result applies only to financial decisions that are pie-slicing in nature. The MM Theorem fails absent the pie-slicing property, but the Coase Theorem's opportunity-cost pressure survives (because contracting parties still have incentives to use resources more efficiently). Conversely, the Coase Theorem fails when contracting costs dampen opportunity-cost pressure, but the MM Theorem survives (because all pie-slicing choices are still equally good).

The narrow statements above also mask the conceptually distinct lessons from MM and Coase for understanding corporate behavior outside the idealized conditions of the models that yield their theorems: Investment is the fundamental driver of firm value (MM) and opportunity-cost pressure provides ongoing incentives to increase firm value (Coase).

4. What the literature says about the relation between the MM and Coase Theorems

The cosmetic similarity between the Coase and MM Theorems has led some researchers to conclude that MM is Coase applied to financial policy. Medema (2020, section 6.3) traces this idea back to Monissen (1976), whom he quotes as saying that MM "can be interpreted as a special case of the more general Coase Theorem." Medema also notes that Hirshleifer (1973, p. 129) and Alchian and Demsetz (1973, p. 26) discuss the similarity between Coase and MM. A closer look indicates that Hirshleifer simply (and correctly) notes that the MM Theorem cannot explain a firm's capital structure because, as he had shown in Hirshleifer (1970, pp. 263-264), MM establish the indeterminacy of a firm's debt-equity mix. Alchian and Demsetz correctly note that Coase's assumptions are sufficient for MM's irrelevance result, but intimate incorrectly (per section 3) that his assumptions are necessary. Smith (1990, p. 9) and Brickley and Smith (2022, pp. 40-41) say that the MM Theorem can be viewed as a special case of the Coase Theorem, but do not explain why or in what sense.

Aivazian and Callen (2023, abstract) say MM is subsumed by Coase, but the Coase-based irrelevance result they develop to support this claim differs substantively from MM's irrelevance result. They recognize that a firm's opportunity set includes negative-NPV investments and financial policies that fall short of distributing all free cash flow. They also note that, given costless contracting, any suboptimal decision that might be initially considered by the firm will not ultimately be chosen in equilibrium because, e.g., the firm will be taken over and its new owners will implement the optimal policy. They conclude that, in a world of costless contracting, regardless of who initially owns the firm or what their initially planned policies might be, strictly suboptimal policies will not be adopted by the firm in equilibrium. The implication is that initial ownership and initial plans are irrelevant.

That is a legitimate conclusion, but it is not what the MM Theorem establishes. Irrelevance in MM means that a firm's equilibrium financial decisions are *indeterminate*. Strictly suboptimal financial decisions do not exist. All feasible choices are equally good. In equilibrium, anything goes.

Aivazian and Callen (2023) go on to criticize Myers (1977) and DeAngelo and DeAngelo (2006) for ostensibly failing to recognize that investment distortions and suboptimal payouts will be eliminated when

contracting is costless. This criticism, however, is a straw man as it does not accurately convey what the criticized studies say. Myers (1977, section 3.2.2) is keenly aware that investment distortions disappear when contracting costs are trivial. DeAngelo and DeAngelo (2006, pp. 304-305) clearly discuss the difference between a firm's opportunity set – a comprehensive list of all decisions that could be chosen – and the distortion-free decisions actually chosen under costless contracting. All three studies agree about the distortion-free nature of contracted equilibria when contracting is costless.

5. Summary

The MM and Coase Theorems both articulate idealized conditions under which variables of economic interest are irrelevant. Viewing these theorems primarily as assertions about irrelevance, however, makes it easy to miss their conceptually distinct lessons for corporate finance outside their idealized settings. Coase's main lesson is the pervasive existence of opportunity-cost pressure to foster allocative efficiency, which in a corporate context typically means pressure to increase firm value, while MM's analysis has nothing to do with opportunity-cost pressure and yields the main lesson that investment policy is the foundational driver of firm value.

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