EXPLAINING INVESTOR PREFERENCE FOR CASH DIVIDENDS*

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The well-known tendency of investors to favor cash dividends emerges quite naturally in two new theories of choice behavior [the theory of self-control due to Thaler and Shefrin (1981), and the version of prospect theory set out by Kahneman and Tversky (1979)]. Although our treatment is novel when viewed from the perspective of standard financial theory, it provides explanations for a phenomenon that has long been described as perplexing.

1. Introduction

Why do so many individuals have a strong preference for cash dividends? This important question has intrigued financial theorists for years. The present paper is concerned with the way in which the preference for dividends is explained by two new theories of individual choice behavior: the theory of self-control by Thaler and Shefrin (1981) and the descriptive theory of choice under uncertainty by Kahneman and Tversky (1979).

It is generally accepted that dividends and capital gains should be perfect substitutes for each other if taxes and transaction costs are ignored. The reasoning is quite simple. Given a firm's investment plan, the payment of a one-dollar cash dividend results in a drop of exactly one dollar in the price of the firm's stock. Thus, an individual is indifferent between a one-dollar cash dividend and a one-dollar 'homemade' cash dividend created by selling one dollar's worth of stock.

Of course, the argument against generous cash dividend payout is the tax argument. Since the tax on cash dividends exceeds the tax on capital gains for most investors, investors should prefer to receive no dividends as long as the firm has investment opportunities with yields equal to or higher than the cost of capital. Yet the strong preference for cash dividends is difficult to refute. A well-known case reported by Loomis (1968) illustrates the point.

Mr. Kuhns, president of General Public Utilities Corp. (G.P.U.) proposed to substitute stock dividends for cash dividends. He also offered to sell these stock dividends (with minimal brokerage costs) for any stockholder who wanted to realize the same cash income he had been receiving from dividends. The effect of substituting stock dividends for cash dividends would have resulted in a direct tax savings to the shareholders of at least $4 million annually. Direct savings to G.P.U. would have amounted to an additional $20 million annually. Yet most G.P.U. shareholders did not regard the proposal as reasonable. Reactions were strongly negative, if not outright hostile. The price of the company's stock dropped sharply, and a barrage of unfavorable mail arrived on Kuhn's desk. One stockholder called him a 'hypocritical ass'; another suggested that he seek psychiatric care. When both individual investors and institutions made it clear that implementation of the plan would lead them to sell their G.P.U. stock, it was abandoned.

Consider the major explanations which have been advanced to explain the strong preference for cash dividends. Black and Scholes (1974) argue that investors who concentrate their portfolios in stocks with any given yield will reduce the degree of diversification in their portfolios without a consistent offsetting benefit in terms of higher expected return (either before tax or after tax). Since Black and Scholes' empirical efforts did not uncover a statistically significant relationship between dividend yield and portfolio return, they suggest that investors simply ignore dividend yield in making portfolio decisions, and concentrate instead on diversification. However, this suggestion is not consistent with the available evidence. Using survey data, Pettit (1977) finds that investors in high marginal tax brackets concentrate their portfolios in stocks with low dividend yield. In addition, there is evidence from Rosenberg and Marathe (1979) and Litzenberger and Ramaswamy (1979, 1980, 1982) that high-dividend-yield stocks provide a higher before-tax return than low-dividend-yield stocks.

Not all authors accept the idea that cash dividends involve a tax disadvantage. Miller and Scholes (1978) present a rather complicated (and probably costly) arrangement to defer the tax on dividends indefinitely.[1] However, they do not explain why companies fail to choose the 'easier' way: low or zero payout of dividends. Moreover, Feenberg (1981) finds that the special circumstances under which the Miller–Scholes arrangement can occur applies to recipients of only two-and-one-half percent of dividend income. Feenberg

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[1]A provision of the Economic Recovery act of 1981 is that up to $1,500 (for a joint return) in dividends from public utilities are not taxed if reinvested in the firm. Capital gains tax must, of course, be paid on the shares bought with the dividends when these shares are sold (the cost basis for the shares is zero). Proponents of this provision actually tried to apply it to all stocks, not just utilities, and to make the dollar limit much higher ('Utilities get ready for a tax break', *Business Week*, November 16, 1981). Arrangements to defer taxes on dividends must be costly if efforts are expended on changes in the law that would make such deferments possible.

concludes that 'no dominant role may therefore be ascribed to their hypothesis in the determination of corporate dividend policy' (p. 265).

The only good argument supporting the preference for cash dividends is based on informational considerations. The basic idea is that raising and lowering of dividends provides information that is not otherwise available [see Miller and Modigliani (1961), Bhattacharya (1979), Hakansson (1982), and Asquith and Mullins (1983)]. It is worth mentioning that the motives for dividend preference that we discuss will often interact with the signalling function of dividends. At the same time our theory accounts for important features about the demand for dividends such as the clientele effect (see below) which signalling theory seems incapable of explaining. Therefore, while we are not arguing against the information-based explanation of cash dividends, we do agree with Brealey and Myers (1981, p. 345) that casual evidence, such as the G.P.U. dividend story, suggests the existence of alternative, plausible explanations. This paper considers alternative explanations based upon self-control theory and prospect theory which appear plausible on both theoretical and empirical grounds. The key point which emerges from the two theories is as follows: the perfect substitutes feature of capital gains and dividends (in the absence of taxes and transaction costs) which characterizes the standard approach is not always appropriate.

The paper is organized in two parts. First, we consider why capital and cash dividends need not be perfect substitutes, even in the absence of taxes and transaction costs. Section 2 discusses a self-control-based explanation of this phenomenon, while sections 3 and 4 develop two separate explanations which arise from the work of Kahneman and Tversky. The second part of the paper contains a discussion of some empirical implications of the theory. In particular, we focus on the clientele effect and draw on some important empirical studies concerning dividend clienteles (section 5). In section 6 we present an interesting and insightful case on dividend omission by Consolidated Edison. Section 7 presents further research directions, and section 8 contains some concluding remarks.

2. Self-control and dividends

Understanding what has come to be called the principle–agent conflict, together with its resolution, provides significant insights into many aspects of corporate behavior. In a pioneering paper, Jensen and Meckling (1976) demonstrate how the principal–agent framework accounts for some apparent departures from the standard economic theory of the firm. Subsequent work such as Zimmerman's (1979) shows that the principal–agent framework can explain why firms persist in allocating overhead costs in spite of admonitions that such allocation is inherently arbitrary and serves no useful purpose. It appears that

the allocation of overhead costs is a useful tool in the control of managers' actions.

Significantly, the descriptive power of the principal–agent framework is not confined to firms. Following the same line of inquiry in connection with individual behavior, Thaler and Shefrin (1981, 1983) demonstrate the use of the principal–agent framework in describing persistent departures in consumer choice from behavior predicted by the economic theory of the consumer.[2] The departures all involve the inability of individuals to delay gratification because of a lack of self-control.

There are numerous examples of self-control difficulties, as the prevalence of smoking clinics, credit counselors, diet clubs, and alcoholic assistance groups attests. In the Thaler–Shefrin framework such difficulties are regarded as signifying an internal conflict. The individual wishes to deny himself a present indulgence, yet simultaneously finds that he yields to the temptation. The representation of this conflict in terms of principal–agent theory is accomplished by identifying the individual's desire for self-denial with a principal, and the urge for immediate gratification with an agent. The principal is regarded as the individual's internal 'planner', who expresses consistent long-run preferences (through a utility function V). However, responsibility for carrying out the individual's date t action lies not with the planner but with an agent (the date t 'doer') who is also internalized. In order to identify the 'doer' with the urge for immediate gratification, the date t doer is assigned a utility function Z_t which overwhelmingly favors date t consumption.

Thaler and Shefrin assume that the planner has two kinds of self-control techniques which can be used to exert an influence over the doer's actions. The first technique is the exercise of 'will'. Specifically, increased will-power serves to induce greater 'self denial' on the part of the date t doer through the modification of that doer's incentives: this effect comes through $Z_t(\cdot)$. However, such self-denial is assumed to entail some utility cost to the planner; otherwise the exercise of will is simply not problematic. It is precisely because of this utility cost that the planner may wish to use the second technique, manipulation of the doers' opportunities. By imposing additional constraints upon a doer's opportunities, the planner may limit the amount of damage done when the individual is weak-willed (meaning the use of will-power is too costly). In addition, the restriction of a doer's opportunities reduces the temptation, and hence the amount of self-denial to be exercised. Both of these features play an important role in the analysis of dividends.

It appears that opportunity manipulation is widely used in self-control situations in everyday life. This technique seems to correspond with the

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[2] This section presents a thumbnail sketch of the Thaler–Shefrin model. For further details, see the two papers by Thaler and Shefrin.

generally accepted notion of a rule. For instance:
- jog at least two miles per day;
- do not consume more than 1,200 calories per day;
- bank the wife's salary and only spend from the husband's paycheck;
- save at least two percent of every paycheck for children's college education, and never withdraw from this fund;
- never touch a drop;

all provide examples of rules. Some may be enforced externally (e.g., 'fat farms', pension plans with automatic deductions), while others may be enforced internally (by habit). Thaler and Shefrin point out that such rules may also prevent the usual type of internal arbitrage that characterizes standard consumer choice theory. Individuals who simultaneously set aside funds for their children's college education at one interest rate, yet borrow to finance the purchase of durable goods at a higher interest rate, are not acting as standard utility maximizers. Yet the underlying rationale seems quite straightforward. By prohibiting withdrawals from the 'college fund', the possibility of not replenishing that fund because of a weak will is avoided. Alternatively, credit markets provide individuals with regimented loan repayments for which the default penalties are much more immediate than facing the prospect of a disappointed, disillusioned child in the distant future. In a similar vein, many people simultaneously borrow and yet take too few income tax exemptions in order to receive a large tax refund from the IRS.[3]

Observe that in the examples pertaining to college education and saving the wife's salary, money is not treated as a homogeneous item. It can be treated in a variety of ways depending on its source, or the use to which it will be put. Consequently, an individual who wishes to safeguard long-run wealth against a compulsion for immediate gratification might employ a rule that prohibits spending from capital. Such an individual may be better off by allowing current consumption to be determined by the dividend payout from his stock portfolio. In other words, this individual may wish to follow a *rule* stipulating that portfolio capital is not to be consumed, only dividends. What needs to be explained is why such a rule would be in the individual's interest since it imposes unnecessary constraints when viewed from standard financial theory. There may be times when disallowing the sale of capital for the purpose of increasing current consumption might be inconvenient, especially if one is short of liquid assets. However, the reason for actually employing such a rule is to stop the doer (meaning desire for immediate gratification) from gaining access to the capital. Moreover, with consumption financed by dividends

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[3] The degree to which any of the above self-control problems exist is something that varies across individuals. What one individual finds to be a severe self-control problem may be entirely absent in another. In addition, the subsequent discussion about dividend preference is part of a much broader picture dealing with pensions and the differential treatment of wealth and current income [Shefrin and Thaler (1984)].

instead of capital, the amount of will-power required by the planner decreases, along with the potential damage resulting from weakness of will. The exact same feature underscores why a parent may be reluctant to 'borrow' from the educational fund: a conscious worry about drawing the fund down too far, and experiencing difficulty in exercising the self-control necessary to replenish it.[4]

Of course, in standard theory the above discussion makes no sense. As Brealey and Myers (1981) argue, all the positions advanced to explain the favored treatment accorded firms which pay handsome dividends are poorly founded because the sale of stock serves as a perfect substitute for increased dividends. In a self-control framework the two are not perfect substitutes. Because of possible self-control difficulties, allowing oneself the discretion of selling stock for current consumption may cause the portfolio to be consumed more quickly than is consistent with one's long-term goals.

3. Prospect theory and dividends

Our first explanation of why investors prefer cash dividends deals with the distinction between 'issues of form' and 'issues of substance'. In standard financial theory it does not matter whether wealth is embodied in the form of a cash dividend or in the form of stock, because they are perfect substitutes. Fischer Black (1976, p. 5) uses the following example to make this point succinctly:

> 'Suppose you are offered the following choice. You may have $2 today, and a 50–50 chance of $54 or $50 tomorrow. Or you may have nothing today, and a 50–50 chance of $56 or $52 tomorrow. Would you prefer one of these gambles to the other?'

> 'Probably you would not. Ignoring such factors as the cost of holding the $2 and one day's interest on $2, you would be indifferent between these two gambles.'

However, a substantial literature is now growing which indicates that 'form' matters. This literature is discussed by Arrow (1982) who provides a dramatic example from the work of McNeill, Pauker, Sox and Tversky (1981) to illustrate the importance of form. A group of physicians was presented with probabilistic data about the effectiveness of two alternative treatments (surgery and radiation therapy) for a particular form of cancer. Each physician was

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[4] There is a clear anology with the Jensen–Meckling (1976) firm here. Jensen and Meckling were concerned about the 'overconsumption' of perquisites by manager/agents. Thaler and Shefrin are concerned with 'overly-early consumption' of wealth by the individual resulting from the desire for immediate gratification. In both cases improvements might be generated by adopting seemingly suboptimal rules that limit the agent's ability to exercise discretion.

asked to choose between the two treatments. However, while some physicians were presented with the data in the form of 'survival probabilities', the remainder were given the *equivalent* information in the form of 'mortality probabilities'. The authors found that 84 percent of the physicians chose surgery over radiation when 'survival probabilities' were presented, but only 50 percent made that choice when 'mortality probabilities' were presented. Needless to say, the conversion of 'mortality probability' into 'survival probability' (and vice versa) is easily computed by subtraction from unity.

In standard theory it does not matter whether wealth is embodied in the form of dividends or in the form of capital, so long as they have the same value. However, the previous section made clear that the distinction between dividends and capital does matter in self-control theory. In the present section we discuss some additional reasons, quite apart from self-control, which cause the distinction in form to matter. These reasons concern the way individuals confront risk rather than the intertemporal considerations inherent in self-control.

Before taking up the uncertainty aspects of the dividend problem, we first outline the key features of the descriptive theory of choice under uncertainty due to Kahneman and Tversky (1979) and some related work by Thaler (1983). We then apply this theory to Black's preceding example, in order to discuss how the theory helps to explain dividend preference.

Kahneman and Tversky (1979, 1981) argue that decision-makers who face risky prospects consistently confuse issues of form and substance. In modelling such behavior these authors modify standard expected utility along the following lines. Let X be a (finite) set of certain outcomes with $x \in X$. Take p to be a probability distribution (or gamble) on X. Suppose that $u(x)$ is a von Neumann–Morgenstern utility function. Then the standard theory of choice under uncertainty has the space of gambles (or prospects) ranked according to the expected utility function

$$EU(p) = \sum_{x \in X} u(x)p(x).$$

Kahneman and Tversky modify this framework by replacing both u and p with transformations. The probability $p(x)$ is replaced by a term $\pi(p(x))$. While Kahneman and Tversky take $\pi(0)$ to be 0 and $\pi(1)$ to be 1, $\pi(p(x))$ is not equal to $p(x)$ for all intermediate values. For example, sufficiently small probabilities tend to get overweighted in the sense that $\pi(p(x)) > p(x)$. An important feature of $\pi(\cdot)$ which we discuss again later is the 'subcertainty' property: if a prospect p features some uncertainty in the sense that $0 < p(x')$ < 1 for *some* outcome x', then

$$\sum_x \pi(p(x)) < 1.$$

For instance, this property would make a risk-averse individual willing to pay more for the *complete* elimination of uncertainty than his attitude to risk *alone* would suggest. [See Kahneman and Tversky (1979) for a full discussion.]

In Kahneman and Tversky's theory the utility function u is replaced by a 'value' function v which has as its argument the difference

$$x - \omega$$

between the certain outcome x and some standard reference point ω. Kahneman and Tversky argue that individuals tend to rank gambles according to gains or losses $(x - \omega)$ relative to some reference point ω, rather than according to the final consequence x.[5] Moreover, they postulate that individuals typically

(1) display risk-averse behavior over gambles which involve only gains;
(2) display risk-seeking behavior over gambles which involve only losses; and
(3) have losses loom larger than gains in those gambles which admit the possibility of either a gain or loss of equal magnitude.

Therefore, in the single-variable case, a standard Kahneman–Tversky value function is concave in gains and convex in losses with a somewhat non-symmetric shape to reflect the third property above. See fig. 1.

Like Kahneman and Tversky, Friedman and Savage (1948) consider gambles which are defined in terms of gains and losses. However, Friedman and Savage use expected utility to rank gambles. Consequently, the associated preference relation satisfies the 'independence axiom' which says that an individual's preference relation over complex lotteries is determined by ranking simple lotteries. In addition, a Friedman–Savage individual exhibits preferences which are generally contingent upon initial wealth. By way of contrast, Kahneman–Tversky individuals have preferences which both violate the independence axiom, and are not contingent upon initial wealth. Kahneman and Tversky (1979) point out that it was Markowitz (1952) who first proposed that preferences be defined on gains and losses instead of on final-asset position. In discussing the differences between their approach and that of Markowitz, Kahneman and Tversky also indicate that Markowitz had both concave and convex regions in both regions of fig. 1. The Markowitz paper is also considered by Machina (1982) in his discussion of the independence axiom.

A germane issue raised by Kahneman and Tversky concerns the feature of 'coding'. They consider the way an individual would decide whether to pay a 'certain amount',[6] s, in order to purchase a lottery which promises amount x with probability $p(x)$, and amount y with probability $p(y) = 1 - p(x)$. The

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[5]It is important to understand that Kahneman and Tversky's model is not intended as a theory of rational behavior: their theory is positive, not normative.

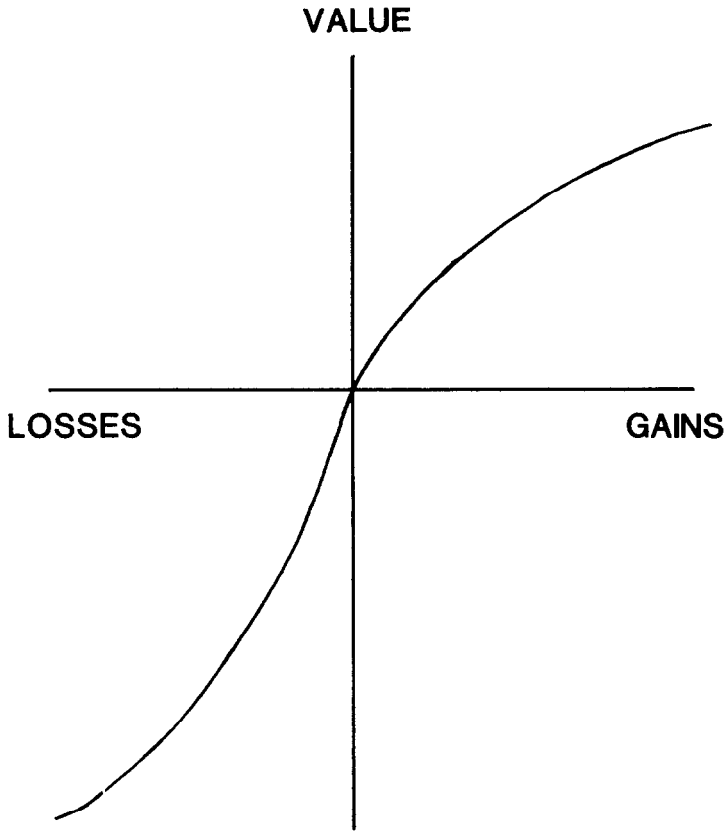[6]Meaning a non-random amount with no uncertain component.

VALUE

Fig. 1. The Kahneman–Tversky value function representing an individual's preferences over gains and losses measured relative to some reference point in a gamble. The figure shows that the individual is risk-averse in gains, risk-seeking in losses, with losses looming larger than gains.

question is whether an individual will decide to purchase the lottery by noting that the net payoffs from the lottery are $x - s$ and $y - s$, respectively? Kahneman and Tversky refer to such netting as integration. If payoffs are integrated then the decision rule would be to purchase the lottery only if

$$\pi(p(x))v(x - s) + \pi(p(y))v(y - s) \geq v(0). \tag{1}$$

Yet Kahneman and Tversky postulate that the risky and riskless prospects will not be integrated in quite this way. Rather, they suggest that individuals typically evaluate lottery payoffs and lottery cost separately. Consequently, the individual will only purchase the lottery if the combined value is positive; that

is, if

$$\pi(p(x))v(x) + \pi(p(y))v(y) + v(-s) \geq 0. \tag{2}$$

In this case the price s of the lottery is said to be segregated from the lottery payoffs. Kahneman and Tversky stress that (1) and (2) do not give rise to the same decision rule. Consequently, the issue of whether an individual makes his decision by integrating or segregating outcomes is germane. An obvious example involves the decision to buy stock: s represents the price of the stock at the time of purchase, while x and y signify possible future market value.

Thaler (1980) discusses the application of the Kahnemann–Tversky framework to consumer choice theory. His (1983) paper employs the integration/segregation idea to study situations in which outcomes take the form (α, β) with total monetary payoff $\alpha + \beta$. Thaler argues that $v(x)$ may depend upon the decomposition of $\alpha + \beta$ into (α, β), and not just on the total. Significantly, he also represents the reference point ω in the decomposed form $(\omega_\alpha, \omega_\beta)$. Thaler than argues that the individual's decision about whether to segregate or to integrate depends on the magnitudes of both $(\alpha - \omega_\alpha)$ and $(\beta - \omega_\beta)$. His analysis establishes that the space $(\alpha - \omega_\alpha)$, $(\beta - \omega_\beta)$ will be partitioned into integration regions and segregation regions. Fig. 2 portrays the regions with the dotted line demarcating the zone of net gain from the zone of net loss.

To understand what determines the regions in fig. 2, consider a series of cases. In the first case (α, β) is such that $\alpha > \omega_\alpha$ and $\beta > \omega_\beta$. Then (α, β) can be regarded as an outcome involving two gains. In evaluating these gains, Thaler distinguishes between two distinct value functions $w(\cdot)$ and $v(\cdot)$: $w(\cdot)$ is a function of one variable, while $v(\cdot)$ is a function of two variables. Consider the act of integration. Assume that $w(\cdot)$ has the shape depicted in fig. 1. Then integration means that the two gains $(\alpha - \omega_\alpha)$ and $(\beta - \omega_\beta)$ are netted together as $(\alpha - \omega_\alpha) + (\beta - \omega_\beta)$. It follows that the multi-variable value function $v(x) = v(\alpha - \omega_\alpha, \beta - \omega_\beta)$ would take the form

$$v(x) = w\big((\alpha - \omega_\alpha) + (\beta - \omega_\beta)\big). \tag{3}$$

Alternatively, segregation would represent the idea that the two gains α and β are 'savored' separately. Thaler (1983) describes this feature as wanting to have one's Christmas presents wrapped separately in order to experience the pleasure of opening each one individually. Formally, segregation means that the expression

$$v(x) = w(\alpha - \omega_\alpha) + w(\beta - \omega_\beta) \tag{4}$$

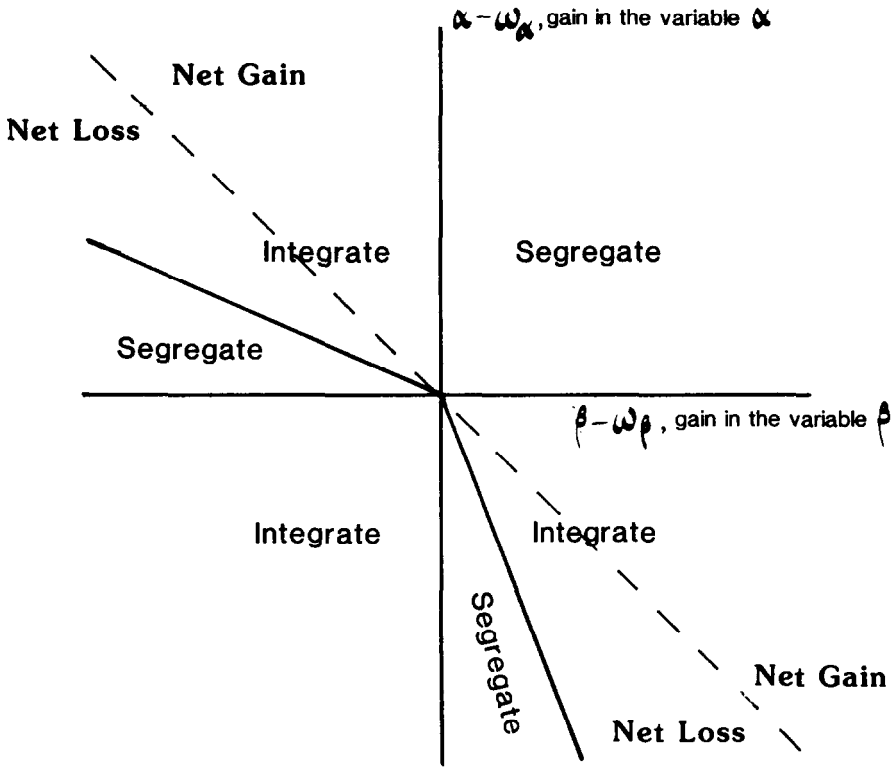serves as a representation of $v(\cdot)$.

Fig. 2. This figure portrays the integration and segregation regions for an individual who simultaneously incurs gains and/or losses in two distinct variables, α and β (measured relative to reference points ω_α and ω_β, respectively). The figure indicates whether a given combination $((\alpha - \omega_\alpha), (\beta - \omega_\beta))$ leads the individual to segregate or to integrate. The net gain (or loss) associated with the final position is computed by adding $(\alpha - \omega_\alpha)$ to $(\beta - \omega_\beta)$.

Given the same function $w(\cdot)$ in (3) and (4), it is clear that (4) yields a higher value for $v(x)$ than (3): this is because α and β both represent gains, and $w(\cdot)$ is concave in gains. Next, consider the plausible assumption that the Kahneman–Tversky value function $v(\cdot)$ serves as a utility indicator. Then it seems sensible to say that the decision about whether to segregate or to integrate will be determined according to the procedure which yields the higher value for $v(\cdot)$. That is, for $x = (\alpha - \omega_\alpha, \beta - \omega_\beta)$, $v(\cdot)$ is given by

$$v(x) = \max\left\{ w\big((\alpha - \omega_\alpha) + (\beta - \omega_\beta)\big), w(\alpha - \omega_\alpha) + w(\beta - \omega_\beta) \right\}.$$

Carrying the above argument to its next step, suppose that both α and β signify losses. That is, suppose that

$$\alpha < \omega_\alpha \quad \text{and} \quad \beta < \omega_\beta.$$

Then it seems reasonable that the individual would want all losses reported in a lump sum rather than having to experience the psychological pain of considering them separately. The formal analogue of this last statement is that the integrated form (3) would be chosen over the segregated form (4). Indeed, notice that with $w(\cdot)$ being convex in losses, and both α and β signifying losses, the value of (3) will be higher than that of (4) [for fixed $w(\cdot)$].

In the mixed case, one component, say α, represents a gain, but the other, β, represents a loss. It is easy to see what happens in this situation by interpreting x within the context of a stock market problem. For the purpose of simplicity, consider a single stock. Let α correspond to the dividend, β to the current stock price, and ω_β to the price of the stock when it was originally purchased. For convenience, take the reference value for dividends ω_α to be zero. In order to clarify the main features of the integration/segregation decision in the mixed case, hold both the dividend α and the reference point stock price ω_β constant at strictly positive values. Observe that α is interpreted as a gain. Next consider how the decision changes as we vary the stock price, β. In fig. 3, begin with the case of a capital-gain, meaning $\beta > \omega_\beta$. Then, as we discussed, the investor will wish to segregate. When $\beta = \omega_\beta$, and therefore $\beta - \omega_\beta = 0$, there is neither a capital gain nor loss: therefore, the investor will be indifferent between integration and segregation.

Next, consider the case in which $\beta < \omega_\beta$, so that a capital loss is incurred, but let this capital-loss be exactly offset by the dividend α. Notice that with integration the magnitude $v(x)$ is $w(0) = 0$ [from (3)], while with segregation
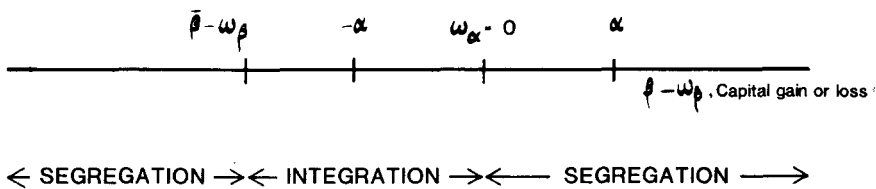

Fig. 3. This figure portrays the integration and segregation regions associated with dividends and capital gains. The dividend per share is α, and the dividend reference point, ω_α, is zero. The original purchase price of the stock is ω_β, and the current stock price is β. The point $(\beta - \omega_\beta)$ signifies the critical capital loss for which the individual will be indifferent to segregating and integrating. The figure represents a horizontal cross-section of fig. 2 at a fixed positive value of $(\alpha - \omega_\alpha)$. That is, it represents the points on a horizontal line which intersects the vertical axis at (a positive value of) $\alpha - \omega_\alpha$. In the right-most segregation region the capital gain serves as a 'super added benefit', while in the left-most region the dividend serves as a 'consolation' or 'silver lining'.

we obtain

$$v(x) = w(\alpha) + w(\beta - \omega_\beta) = w(\alpha) + w(-\alpha) < 0.$$

This last inequality follows from (4) and fig. 1 (since losses loom larger than gains). Consequently, integration is strictly preferred when $\beta - \omega_\beta = -\alpha$. Indeed, it is straightforward to verify that integration will be preferred to segregation for all β satisfying $-\alpha \le \beta - \omega_\beta < 0$. Finally, consider the case in which the capital loss $\omega_\beta - \beta$ exceeds the dividend α. Notice from fig. 1 that as $\beta - \omega_\beta$ becomes increasingly negative, the slope of $w(\cdot)$ grows smaller because of convexity. Consequently, there will be a sufficiently low stock price $\bar{\beta}$, for which segregation will be preferred to integration for all prices below this level. Fig. 3 indicates the regions in which segregation or integration is preferred given a constant dividend α and varying capital gain $\beta - \omega_\beta$. Notice that fig. 3 represents the points on a horizontal line drawn through the point $\alpha - \omega_\alpha > 0$ on the vertical axis of fig. 2.

Fig. 3 indicates that there are two distinct segregation regions which are relevant to dividends. To convey the intuition underlying these regions consider the following remarks from a manual for stockbrokers by Gross (1982, p. 177):

> 'By purchasing shares that pay good dividends, most investors persuade themselves of their prudence, based on the expected income. They feel the gain potential is a super added benefit. Should the stock fall in value from their purchase level, they console themselves that the dividend provides a return on their cost.'

Observe in fig. 3 that the right-most segregation region is associated with a positive capital gain; therefore, the investor segregates in order to obtain 'super added benefit' from this gain. But in the left-most segregation region, where a sizeable capital loss is incurred, he segregates in order to treat the dividend as a silver lining with which he can 'console himself'. In the intermediate region of 'small' capital losses, he integrates in order to offset part or all of the capital loss by the dividend.

To see the contrast between our treatment of dividends and standard theory, recall the example from Black (1976) that illustrates the standard argument. Consider an interpretation of Black's two gambles in terms of fig. 3. Implicit in Black's argument is the assumption that the relative magnitude of capital gains (losses) to dividends plays no role. To underscore the importance of this feature in our treatment of dividends we extend Black's example to cover three special cases that differ only by the reference point the investor uses to define capital gains and losses. In each of these cases the dividend α is equal to 2, and β is either 50 or 54.

Case 1. The investor purchased the stock for $40. Then the outcome of Black's first gamble consists of a $2 dividend together with a capital gain of either $10 or $14. In terms of fig. 3 we have $\omega_\beta = 40$, with $\beta - \omega_\beta$ equal to either 10 or 14. Notice that this places the individual in the right-most segregation region in fig. 3. Intuitively, the investor segregates the dividend from the capital gain in order to 'savor' the two separately, just as individually wrapped Christmas gifts are savored separately. Notice that the first gamble provides the investor with the flexibility to segregate or integrate as he wishes. That is, the investor can always perform the computation which transforms the first gamble into the second. However, he will not be able to transform the second (integrated) gamble into the first (segregated) gamble. Since the investor definitely prefers to segregate in this case, he will strictly prefer the first gamble to the second.[7]

Case 2. Suppose the investor purchased the stock for $70. Therefore, a capital loss of either $16 or $20 will be incurred, although a $2 dividend will also be earned. Then $\omega_\beta = 70$, and $\beta - \omega_\beta$ is equal to either -16 or -20. For the purpose of this discussion, assume that the value of $\bar\beta - \omega_\beta$ in fig. 3 is -5. Then the investor will find himself in the left-most segregation region of fig. 3. Intuitively, the investor prefers to segregate because the dividend can be regarded as a 'silver lining'. That is, segregation enables the investor to stress the positive aspects of his (net) loss as much as possible.[8] Consequently, the first gamble will be preferred to the second just as in Case 1.

Case 3. Suppose the initial purchase price was $51. This case illustrates a situation where integration emerges. Observe that with a $2 dividend, there will be either a capital gain of $3 or a capital loss of $1. Then $\omega_\beta = 51$, and $\beta - \omega_\beta$ is either 3 or -1. Notice from fig. 3 that this places the investor in the integration region. Intuitively, integration is preferred to segregation here because it eliminates any consideration of a loss. Therefore, the investor who faces gamble 1 would himself integrate, thereby transforming gamble 1 into gamble 2. Because the investor has this option available, the indifference suggested by Black will actually be achieved in this case.[9]

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[7] We allow the decision about whether to segregate or integrate to be made after the realization of the gamble is revealed.

[8] The idea is also consistent with the principle of cognitive dissonance whose economic consequences have been discussed by Akerlof and Dickens (1982).

[9] There is the possibility that the investor will be unable to carry out the integration from a psychological point of view. That is, the investor may not be able to forget about the segregated amounts. In this case he would strictly prefer gamble 2 to gamble 1. Thus, the investor would wish to segregate in some outcomes and integrate in others. Since the gamble involving the dividend might preclude integration (psychologically), he would need to compare the relative likelihoods of the outcomes before deciding whether to choose the dividend-paying stock. Given that the investor will generally choose a stock with a positive expected capital gain, and will wish to segregate if such a gain materializes, there is a strong tendency to select a dividend-paying stock.

Observe that in Black's discussion the $2 dividend is treated as a certainty in gamble 1. This brings to mind Kahneman and Tversky's 'subcertainty' feature. Subcertainty suggests that for segregated gambles, the certain or 'bird in the hand' component (in this case $2) will provide an added attraction. To see how this would emerge, let the initial purchase price of the stock be $40 ($\omega_\alpha = 40$). Then from (2) Black's first gamble would be accorded a value of

$$w(2) + \pi(0.5)w(10) + \pi(0.5)w(14),\tag{5}$$

while from (1) his second gamble would be accorded a value of

$$\pi(0.5)w(12) + \pi(0.5)w(16).\tag{6}$$

Were $\pi(0.5) = 0.5$, then our earlier argument involving (3) and (4) would imply that (5) exceeds (6). This inequality will only be strengthened by the subcertainty feature $\pi(0.5) < 0.5$ [which must hold since $\pi(0.5) + \pi(0.5) < 1$].

We caution the reader that the subcertainty argument is by no means intended to portray the old 'bird in the hand' explanation of dividend preference as correct: Miller and Modigliani's (1961) analysis makes clear why it is flawed. However, our discussion points out that Kahneman–Tversky investors may find the certainty feature of dividends attractive because of the subcertainty property.[10]

Kahneman and Tversky's prospect theory also offers explanations for a variety of other curious features about dividends noted in the literature. We mention two particular issues. First, Kahneman and Tversky postulate that losses loom larger than gains and this appears to be consistent with the observation that announced dividend decreases have a much more pronounced effect on market value than do announced increases in dividends. See Charest (1978). Second, while the separation of dividends into 'regular' and 'extra' components can possibly convey information [see Brickley (1983)], prospect theory provides an additional independent explanation. Kahneman and Tversky emphasize the tendency of decision-makers to evaluate prospects in terms of gains and/or losses relative to a fixed reference point. Moreover, a reference point can change with time, for instance, as might happen when a dividend increase is announced. By segregating a dividend payment into 'regular' and 'extra' components, a firm may prevent an increase in total dividends per share from leading to a reference point shift on the part of the shareholder. Otherwise, a subsequent reversion of total dividend payout to its original level might be interpreted as a loss in view of a new (higher) reference point; and losses loom larger than gains. This explanation is consistent with Brickley's (1983) finding that dividend payouts in the year following dividend increases

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[10]Attractive is not synonymous with rational. Recall that Kahneman and Tversky do not offer a theory of rational decision-making.

are significantly larger for regular dividend increases than for specially desig-
nated dividends.

4. Regret aversion and dividend preference

Compare the following two cases:

(1) You take $600 received as dividends and use it to buy a television set.
(2) You sell $600 worth of stock and use it to buy a television set.

Subsequently, the price of the stock increases significantly. Would you feel
more regret in case 1 or in case 2? If dividends and the receipts from the sale of
stock are perfect substitutes, then it is clear that you should feel no more regret
in case 2 than in case 1. However, evidence by Kahneman and Tversky (1982)
indicates that for most people the sale of stock causes more regret.[11] What we
argue here is that consumption from dividends may be preferred to consump-
tion from capital for people who are averse to regret. Consequently, dividends
and capital cannot be treated as perfect substitutes, even abstracting from tax
and informational considerations.

The general idea of regret aversion and its effect on individual behavior is
described well by Kahneman and Tversky (1982, pp. 172–173):

'Regret is a special form of frustration in which the event one would
change is an action one has either taken or failed to take ... Regret is felt
if one can readily imagine having taken an action that would have led to a
more desirable outcome. This interpretation explains the close link be-
tween the experience of regret and the availability of choice: actions taken
under duress generate little regret. The reluctance to violate standard
procedures and to act innovatively can also be an effective defense against
subsequent regret because it is easy to imagine doing the conventional
thing and more difficult to imagine doing the unconventional one.

A closely related hypothesis is that it is often easier to mentally delete
an event from a chain of occurrences than it is to imagine the insertion of
an event into the chain. Such a difference in imaginability could help to
explain the observation that the regret associated with failures to act is
often less intense than the regret associated with the failure of an action.
Consider the following:

Paul owns shares in Company A. During the past year he considered
switching to stock in Company B, but he decided against it. He now finds

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[11]We know an economist who refers to his $30,000 kitchen renovation. Actually, the renovation
cost amounted to only $3,000, but it was paid for from the proceeds of the sale of stock. The
economist added that he rarely sells stock to finance consumption. Subsequently, the price of
the stock increased. Would he have felt the same regret if dividends were used to pay for the
renovation?

that he would have been better off by $1,200 if he had switched to the stock of Company B. George owned shares in Company B. During the past year he switched to stock in Company A. He now finds that he would have been better off by $1,200 if he had kept his stock in Company B. Who feels more regret?

Here again it is generally agreed that George is more upset than Paul, although their objective situations are now identical (both own the stock

VALUE

LOSSES   GAINS

Value Function
Without Responsibility
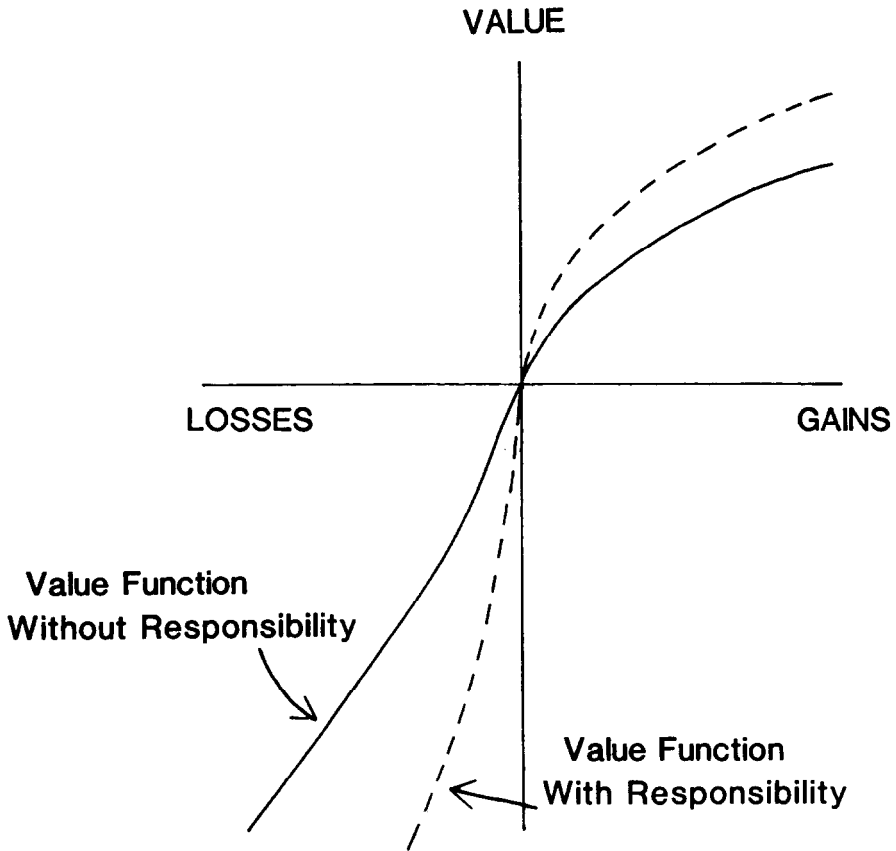
Value Function
With Responsibility

Fig. 4. This figure indicates how an individual's Kahneman–Tversky value function changes when he feels responsible for the outcome of a gamble. When the gamble results in a gain he receives extra value stemming from a sense of pride. When the gamble results in a loss he feels a sense of regret and receives less value. The figure is drawn so that the regret effect (measured by the vertical distance between the two functions in the third quadrant) is stronger than the pride effect (measured by the vertical distance between the two functions in the first quadrant). This feature tends to make individuals reluctant to choose gambles in which they feel responsible for the outcome.

of Company A) and each reached his situation by deliberate decision.

Apparently it is easier for George to imagine not taking an action (and thereby retaining the more advantageous stock) than it would be for Paul to imagine taking the action. Furthermore, one would expect both men to anticipate the possibility of regret and to act accordingly. In general the anticipation of regret is likely to favor inaction over action and routine behavior over innovative behavior.'

Thaler (1980) discusses a related point. He considers why the possibility of regret discourages decisions in which the individual feels he must take 're-sponsibility' for the final outcome. This idea can be used to relate Kahneman and Tversky's treatment of regret to their formal analysis of prospect theory. Suppose that a favorable outcome enables the decision-maker to take pride in his action, while an unfavorable outcome involves regret. As Kahneman and Tversky argue, the reasons for regret and pride stem from the consideration of what would have occurred had another decision been made. If regret generates stronger emotions than pride, then decisions involving responsibility will tend to be avoided. One way of seeing how this feature relates to the previous section is to consider fig. 4. This figure displays two value functions. The solid function is associated with a gamble in which the individual does not take responsibility, while the other function applies to the responsibility case. Notice that while pride increases the value of a gain, and regret increases the (absolute) value of a loss, the effect due to regret is the greater.

The implication of this discussion for dividend preference is not difficult to see. Consider the following case: Paul normally spends cash dividends. There-fore, when he receives a $1 cash dividend he spends it. George rarely sells stocks for consumption, but let him sell $1 worth of stock and spend it. Subsequently, the price of the stock increases. It is easier for George to imagine not selling the stock (i.e., not taking an action) than it is for Paul to imagine reinvesting the cash dividend in the stock (i.e., taking an action). George feels more regret because he feels 'responsible'. Paul, who can easily be in an identical net financial position, is able to avoid feeling regret because consuming dividends constitutes what Kahneman and Tversky call 'standard proce-dure'.[12] This point demonstrates that a rule (standard procedure) can perform functions other than self-control, like reducing regret. For instance, let Paul follow the rule of reinvesting his dividends, but suppose he deviated this one time. Then the theory holds that he will experience regret for breaking the rule

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[12] Fig. 4 indicates how the value function is affected when responsibility for action is taken into account. This figure does not imply that a decision avoiding responsibility will always be chosen over a decision involving responsibility, since account must also be taken of the odds attached to the respective gambles. A similar point is made in Loomes and Sugden (1982, 1983). Interestingly, Loomes and Sugden as well as Bell (1982) use the idea of regret to explain the major features described by prospect theory.

and having it turn out badly. Thus, the argument that dividends and capital are perfect substitutes in the absence of taxes and transaction cost may not hold. Regret aversion can induce a preference for dividends through the use of a rule like 'finance consumption out of dividends, not capital'.

5. The clientele effect: Some empirical implications

Our interest is in providing plausible reasons why investors display a distinct preference for cash dividends. Of course, the strength of this preference need not be the same for all investors. Indeed, it could well be that investor clienteles with different characteristics favor dividends in varying degrees. To be more precise, there may be investors who favor high dividend yield stocks, investors who prefer low dividend yield stocks, and still others who are totally indifferent to dividend yield. In this section we discuss the implications of our theory for the clientele effect, suggest some testable hypotheses, and supply supporting evidence.

Our analysis of the clientele effect focuses upon the life cycle of a given investor who, because of self-control problems, might experience difficulty in accumulating savings for retirement. Thaler and Shefrin (1981) point out that saving for retirement may be especially problematic during the early phase of the life cycle when retirement seems such a long way off. Consequently, a young investor who appreciates this aspect of self-control may wish to adopt rules which both:

(i) encourage savings; and
(ii) discourage dissaving from already accumulated wealth.

We hypothesize that dividends play a significant role in rules which discourage dissaving; however, we see no compelling reason to expect that low (current) dividend payout acts to encourage (current) saving per se. Consider, therefore, a rule to limit dissaving which consists of the following two-pronged strategy:

(1) Do not consume out of investment capital.
(2) Choose a portfolio with a relatively low dividend yield.

Such a strategy clearly serves to discourage dissaving, since the low dividend yields prevent high consumption out of the portfolio.

Consider a somewhat older investor later in the life cycle who is still employed, owns most of the equity in his home, has no dependent children, and so on. Such an investor might now wish to begin dissaving from his portfolio on a regular basis, and possibly in significant amounts. Of course, the basic self-control conflict may still exist; that is, the individual might still have to worry about dissaving too rapidly. Thus, it is plausible to suggest that he will continue to employ the above consumption–dividend rule, but will adjust

the overall dividend yield of the portfolio in order to facilitate greater dissaving.

Finally, in the retired stage of the life cycle labor income is sharply reduced, and the investor depends heavily on his portfolio to finance consumption. However, a self-control problem still remains because wealth must be allocated over the entire retirement phase. Since it is quite possible to deplete 'too great a portion' of wealth immediately after retirement, the same dividend–consumption rule might be retained, although the dividend yield of the portfolio would now need to be much higher.[13]

In summary, the self-control portion of our theory predicts that dividend yield will be positively correlated with the planned rate of dissaving for individual investors. Therefore, we would observe that whenever the rate of dissaving is positively correlated with age and negatively correlated with income, we should find that:

(a) portfolio dividend yield is positively correlated with age; and

(b) portfolio dividend yield is negatively correlated with income (from human wealth).

An additional implication emerges when the motives of self-control, segregation, and regret-aversion are considered jointly. Recall that an investor interested in self-control will design a portfolio in which consumption is financed out of dividends instead of the sale of stock. Observe that this practice will also serve to limit regret once it becomes what Kahneman and Tversky call 'standard procedure'. However, these motives may be in conflict with the desire to segregate, especially for an investor in the saving stage of the life cycle. This is because self-control theory suggests that such an investor will wish to hold a portfolio containing little or no dividend-paying stocks. However, the absence of dividends eliminates the ability to segregate. We would expect this investor to choose a portfolio which balances the conflicting motives. Consequently, the fraction of the portfolio devoted to dividend-paying stock will represent a compromise. There is no reason to expect a relationship between the strength of the motives for either segregation or regret-aversion and the stage of the life cycle. Therefore, our theory continues to imply that the proportion of the portfolio devoted to dividend-paying stock will increase when the investor moves from the saving stage of the life cycle to the dissaving stage.

In an important empirical study Lease, Lewellen and Schlarbaum (1976) use panel data collected at Purdue to analyze the demographic attributes and portfolio compositions of a wide variety of individual investors. These authors

[13]Analyzing self-control during retirement is fairly complex as a general matter because there are a variety of factors to be taken into account. Space limitations do not permit a thorough analysis of the alternatives which a retired individual might choose. Instead, we focus on the implications which arise when 'don't dip into capital' is the rule being followed.

Table 1

Importance of alternative investment goals to various demographic groups as measured by average rating (4 = very important goal, 1 = low priority goal) and percent of portfolio in income securities.[a]

	(1) Young unmarried professionals & managers	(2) Highly educated young professional men	(3) Older males still at work	(4) Females, mostly retired	(5) Retired males
Investment goal rating:					
Short-term capital gains	2.19	2.00	1.86	1.50	1.53
Long-term capital gains	3.61	3.54	3.63	3.46	3.45
Dividend income	2.04	2.30	2.46	3.36	3.39
Percent of portfolio in income securities	27%	34%	39%	57%	56%
Average number of securities in portfolio	9.4	10.4	11.6	12.1	12.1

[a] Source: Lease, Lewellen and Schlarbaum (1976, table 3).

obtained comprehensive profile data on a large random sample of investors who had maintained an open account over the period 1964–1970 with a large national retail brokerage house.[14] The sample appears to be highly representative of the shareholding public. Lease, Lewellen, and Schlarbaum use cluster analysis in order to partition their sample into five relatively homogeneous groups:

1. young, unmarried professionals and managers;
2. highly educated young professional men;
3. older males still at work;
4. females, mostly retired;
5. retired males.

In their questionnaire Lease, Lewellen and Schlarbaum asked each respondent to rate, on a scale of one to four (where four denoted a 'very important' goal), short-term capital gains, long-term capital appreciation, and dividend income as portfolio objectives. It also asked investors to estimate the (perceived) proportionate representation in their portfolio of securities chosen primarily for their ability to generate dividend-income. Also, as a crude measure of diversification, the number of different companies' securities held was solicited. The responses are striking. We reproduce a portion of their table above.

[14] The profiles describe age, sex, income, education, occupation, assets, marital status, portfolio composition, investment criteria, etc., of each investor.

The two groups of young investors devote 27 percent and 34 percent of their portfolios, respectively, to dividend-income-generating securities. This is consistent with the 2.04 and 2.30 rating accorded to dividends by these groups. For older working men, the proportion of the portfolio devoted to dividend-generation rises somewhat to 39 percent, and their rating of dividends rises to 2.46. Finally, the retired groups' proportions jump to 56 percent and 57 percent, respectively. These percentages, together with the two ratings, 3.36 and 3.39 on the scale of 1 to 4, show just how important dividends are to the retired groups.

These findings are consistent with the implications of our theory. Unfortunately, the Purdue data does not include direct information about the rate of dissaving by investors. Recall that the theoretical implication for dividend yield and age derive from the more fundamental relationship between dividend yield and the rate of dissaving, and similarly for the correlation between dividend yield and income. Using the Purdue data further, Pettit (1977) regressed dividend yield (for a given investor's portfolio) on the investor's age, income, differential tax rate, and the beta of his portfolio. Consistent with our theory, his analysis indicates that the correlation between dividend yield and age is significantly positive, and the correlation between dividend yield and income is significantly negative. Interestingly, Pettit's analysis shows that age is negatively correlated (-0.15) with income. Of course, this is somewhat misleading in that age and income are almost certainly positively correlated for young investors. Nevertheless, it does point to the likely increase in dissaving as individuals get older and retire.

Consider next the implications which arise from the interaction of self-control, segregation, and regret-aversion. Notice from table 1 that young investors hold approximately one-third of their portfolios in dividend-paying stocks: this proportion can hardly be characterized as low. Second, observe that the proportion of dividend-paying stock in the portfolios of retired investors is considerably higher, exceeding 50 percent. Both features are consistent with the empirical implications outlined earlier.

Self-control can explain why people in the saving stage of the life cycle hold portfolios with lower dividend yields than those held by people in the dissaving stage of the life cycle. Alternatively, transaction costs (brokerage commissions) make it more efficient for people who consume from their portfolios to consume from dividends rather than sell shares and pay brokerage commissions. Moreover, there is no conclusive evidence to suggest that the transaction cost explanation for dividend preference is false. Yet transaction cost undoubtedly plays some role in the preference for dividends, though it does not appear to provide a major (let alone complete) explanation of the phenomenon. For instance, when a corporation omits a dividend, shareholders do not seem to complain about the additional transaction costs incurred when they

sell stock to obtain cash. Indeed, the next section deals with one dividend. omission by Consolidated Edison in which shareholders argued that the corporation's action forced them to reduce consumption by the *full* amount of the omitted dividend. The question of transaction costs did not even arise during the course of the stockholders' meeting.

A second issue connected with dividend omission concerns the extent to which a capital gain from one stock in the portfolio can play the part of a silver lining for the capital loss in another stock. To some extent it certainly can; however, it needs to be understood that some investors may be interested in the magnitude of the silver lining just as they are interested in the magnitude of their general insurance coverage. In fact, the silver lining function of dividends is analogous to insurance against the disappointment of a capital loss. We suggest two reasons why dividends provide more effective 'coverage' than capital gains from other stocks in the portfolio.

1. The investors described in table 1 held portfolios consisting of no more than twelve securities on average. Suppose that none of the stocks in such a portfolio paid any dividends. In a down market it is quite likely that just one or two stocks might be up in price, and the capital gain may not be especially large. Thus, the silver lining may be smaller than the corresponding amount associated with a high dividend yield portfolio. Clearly, dividends are a more reliable source of consolation for capital losses in the portfolio.

2. Thaler (1980) argues that out-of-pocket gains are accorded greater weight than opportunity gains. This argument suggests that a dividend check-in-the-mail would be a more effective silver lining than a 'paper capital gain' on another stock. The argument also appears in a manual for stockbrokers by Gross (1982, p. 177):

> 'The regular dividend stream makes the losing investor a more patient holder and often a fairly eager willing purchaser of more shares with only the slightest encouragement from the salesperson.'

While the above analysis deals exclusively with individual investors, it is worth adding that similar arguments can be made for some institutional investors. Indeed, Thaler and Shefrin (1981) placed considerable emphasis on the fact that the types of rules followed by firms facing inter-person conflicts are very similar to the rules used by individuals with intra-person self-control problems. Thus Brealey and Myers (1981, p. 335) mention that 'most colleges and universities are legally free to spend capital gains from their endowments, but this is rarely done'. This suggests that institutions, as well as individuals, may use dividends as a control device. For instance, university trustees might use dividends as a way to control spending by deans, and the adoption of such

a rule can also signal potential donors that the institution is financially prudent and likely to be around for a long time.[15]

6. Consolidated Edison: A case of dividend omission

The case of Consolidated Edison Company of New York reinforces the previous discussion on clienteles and provides new insights into the basic problem. Con Ed income fell in 1973–74, largely because of the quadrupling of oil prices. Consequently, after 89 years of uninterrupted dividends, they omitted a dividend. Company representatives encountered an angry group of stockholders at the 1974 annual meeting.

In his opening remarks at the annual meeting, Charles F. Luce, the Chairman of the Board, described Con Ed's clientele (p. 3):

> 'Investors buy Con Edison stock for assured income. A typical stockholder lives in or near New York City,..., owns about 100 shares – of course, many own more but some own less – is retired or nearing retirement. Most of our stockholders are women, many are widowed ... When the dividend check doesn't come, there is real hardship for many people'.

As for the main topic of discussion at the meeting, he stated (p. 3):

> 'I know, too, that your most immediate concern ... is the dividend on your common stock. Why did we pass the June dividend, and when will we recommence paying dividends?'

Judging from shareholders' remarks, it appears that the Chairman's statements accurately reflected, indeed understated, the importance of dividends for this group. The following representative statements by stockholders at the meeting illustrate the point (p. 36):

> 'I recommend that you shall hold ... a special meeting of the Board of Directors ... ordering the restoration of the dividend, and to restore the good name of Con Edison that has been known for 89 years as a widow's stock, and no risk involved of ever eliminating the dividend.'

And (p. 109):

> 'What are we to do? You give us shorthand answers. You don't know when the dividend is coming back. Who is going to pay my rent? I had a husband. Now Con Ed has to be my husband.'

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[15] Those institutions which do permit capital gains to be spent often adopt an iron-clad rule to limit the extent to which this is possible. For instance, the University of Rochester requires that annual expenditure not exceed five percent of the five-year moving average of its endowment portfolio value.

And (p. 65):

> 'A Lady came over to me a minute ago and she said to me, 'Please say a word for the senior citizens.' And she had tears in her eyes. And I really know what she means by that. She simply means that now she will get only one check a month, and that will be her Social Security, and she's not going to make it, because you have denied her that dividend.'

These angry comments make it clear that selling some Con Ed stock to create 'homemade' dividends (the standard device in financial theory), never occurred to the speakers. We believe that this is not without reason.[16] Indeed, it appears likely that most of these stockholders were following a rule which stipulates that consumption can only be financed out of dividends, but not out of capital. Some explicitly said that they viewed dividend receipts as pension benefits, having 'no other pensions except dividends' (p. 3). Moreover, several of the shareholders who protested quite vigorously about the omission of the cash dividend held several thousand shares of Con Ed stock apiece; so it is unlikely that the absence of the dividend would place them in 'real hardship', to use chairman Luce's phrase. What emerges from such remarks is that these investors are very resistant to selling off stock already in their portfolios. Consequently, the shareholders' remarks are consistent with the implications of self-control theory. From the perspective of prospect theory there are two points to be made. First, if an investor breaks the rule and creates a 'home-made dividend' by selling off stock, then he or she will likely have to sell the stock at less than its original purchase price, given market conditions at that time.[17] In such a situation the Kahneman–Tversky reference point for the stock lies above the (current) price, and the investor will have to come to terms with a loss.[18] Second, the omission of the dividend also prevents the investor from segregating; and recall that in this case segregation would reduce the psychological effect of the decline in the value of Con Ed stock.

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[16] Transaction costs might help to explain the disappointment of stockholders, but it seems unlikely to us that it could adequately account for the strength of the sentiments expressed. Specifically, on the date of the meeting, May 20, 1974, Con Ed stock was selling at $8.75. The sale of 100 shares valued at $875 would have entailed a brokerage fee of only $25.71. Moreover, shareholders did not complain that Con Ed's action would force them to incur unexpected brokerage fees when selling off stock to provide for consumption. Rather, they argued that Con Ed's action was forcing them to reduce consumption by the full amount of the dividend.

[17] The price of the stock had fallen from $23 to $8.75.

[18] It is also likely that the foregone dividend is interpreted as a loss. That is, the investor will have to come to terms with a loss which is now 'out of pocket', not just on paper. Thaler (1980) argues that out-of-pocket costs are accorded much greater weight than opportunity costs.

The declaration of a stock dividend could play a role with respect to each of the above aspects. In fact, one stockholder asked why such a dividend was not declared 'so at least the blow which was given to stockholders by the omission of the dividend would have been much less' (p. 28). The chairman gave the standard financial theory explanation of why stock dividends would not make most shareholders better off. However, our theory suggests a number of advantages to the declaration of a stock dividend, despite the G.P.U. experience described earlier. First, stock dividends are labeled as dividends. Consequently, the investor does not have to break his or her 'do not consume out of capital' rule by selling off and subsequently consuming the stock dividend. Second, the reference point for the stock acquired as a dividend will not generally be the same as stock already in the portfolio. The reference points of two blocks of the same stock typically varies according to the price paid for each block, so long as investors think in terms of gains and losses.[19] Consequently, selling the stock dividend entails no perceived loss on the sale. Finally, stock dividends provide some semblance of gain (a silver lining) which can be segregated out from the investor's portfolio.

6. Further directions

Financial theory has tended to ignore the question of how individual investors actually behave, concentrating instead on how asset prices are determined. Indeed, the way individual investors behave does not seem to be especially important for the workings of financial models. In this regard it is usually argued that learning and arbitrage will serve to eliminate the effects of behavior not in conformity with standard normative precepts. However, a counterargument by Russell and Thaler (1982) has shown why the necessary arbitrage possibilities need not exist. Arrow (1982, p. 8) provides a second counterargument in which 'if everyone else is 'irrational', it by no means follows that one can make money by being rational ... As Keynes argued long ago, the value of a security depends in good measure on other people's opinions.' There is also empirical support for these kinds of theoretical claims. Besides the dividend issue, standard models seem incapable of accounting for such features as the January anomaly and small firm anomaly.[20] This suggests

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[19]Many stockholders at the Con Ed meeting viewed dividends in the same light as the salaries of Con Ed representatives. Consequently, they expressed a desire that the decrease in dividends be carried out with a parallel decrease in salary. This conforms with Brealey and Myers' (1981, p. 334) discussion concerning the call for dividend controls as part of an overall wage and price controls program. While Brealey and Myers argue that this last view is fallacious, our arguments suggest that some investors would indeed feel the effect of dividend controls.

[20]See the June, 1983 symposium issue of the Journal of Financial Economics, especially the papers by Schwert and Reinganum.

the presence of a substantial gap in the finance literature, and the present paper can be viewed as a beginning towards filling this gap.

Our specific concern is with the question of why individual investors find cash dividends attractive. Consequently, our attention is confined to the demand side of the market. Extending the present analysis to a complete equilibrium is beyond the scope of this paper, although it is possible to offer a few tentative remarks about the direction of future research.

A first step would involve a formal analysis of the portfolio selection problem for an individual investor interested in self-control and segregation. This entails the development of a single model which captures the features discussed in both Shefrin and Thaler (1983) and Kahneman and Tversky (1979). Constructing such a model turns out to be relatively straightforward. This analysis will serve to make clear how an individual investor evaluates increases and decreases in the dividend yield of a given firm's stock. Because investors who use dividends as a self-control device select a dividend payout ratio which conforms with their desired consumption level, it is possible for a given firm's share price to fall if it increases its dividend payout ratio beyond a particular level, even if its shareholders belong to a single clientele. Dividend payouts which are 'too large' can induce the need for additional will-power. If a firm's shareholder constituency consists of members from several distinct groups, then the firm will have to choose its payout ratio to balance off the different demand responses of the various groups. In other words, when the dividend yield is chosen to maximize the market value of the firm, then any further increase in this yield will cause a loss in demand by the members of some group(s) (say the group of young professionals) which is not offset by the others.

A similar feature can be found in Feldstein and Green's (1983) study of why companies pay dividends. In their model each firm sets a dividend yield to maximize the value of its shares by balancing off the demand of individual investors against that of tax-exempt institutions. However, in their model, individual investors choose to hold stock in companies that pay dividends only for diversification. Consequently, a Feldstein–Green firm pays dividends to attract institutions, not individual investors. This contrasts sharply with the treatment of investor preference for dividends in the present paper.

8. Conclusion

We present here a framework that explains why investors exhibit preference for dividends, based on the theory of self-control by Thaler and Shefrin and the theory of choice under uncertainty by Kahneman and Tversky. The essence of our argument is that dividends and capital cannot be treated as perfect substitutes. In the absence of taxes and transaction costs, the perfect sub-

stitutes feature forms the basis of dividend irrelevancy. Moreover, we argue that in our theory it can be reasonable for many investors to prefer specific dividend payouts, and we identify the demographic attributes of investors who prefer high and low dividend payout portfolios. Furthermore, available empirical evidence on this issue is consistent with the theory.

Our theory suggests that some investors would be willing to pay a premium for cash dividends because of self-control reasons, the desire to segregate, or the wish to avoid regret. John Long (1978) presents compelling evidence that 'there is a significant demand for cash dividends in spite of a generally lower after-tax total return to investors holding claims to these dividends'. Higher tax payments resulting from the preference for dividends may therefore be interpreted as a price paid for self-control, segregation, regret reduction, and possibly all three. Such tax payments are the intrapersonal analogue of what Jensen and Meckling call agency cost.

When discussing the possibility of finding alternatives to the standard explanations of the dividend phenomenon, Brealey and Myers (1980) indicate that investor behavior in these new explanations would be 'less rational'. However, interpreting rationality is an extremely delicate task in the theories advanced here. Clearly, an individual investor who incurs unnecessary 'agency costs' is acting irrationally. But what about an individual with a serious self-control problem such as impulse buying? Such an individual may be forced to choose from a group of alternatives, all of which involve agency cost. In this case the term 'irrational' is better applied to somebody who does not minimize agency cost, rather than somebody who incurs non-zero agency cost. In practice, however, great care must be taken in establishing that an individual investor is not minimizing agency cost. For instance, it can be argued that an individual investor could improve on the rule 'consume from dividends but don't dip into capital' by letting a financial manager assume partial control of his portfolio. Specifically, the fund manager could be instructed to sell off stock at regular intervals and send the investor an amount, part of which would represent capital gains. Such a strategy could conceivably lead to a higher after-tax return than the 'consuming from dividends' rule and also cope with the self-control problem. An alternative procedure to escape the double tax bite associated with dividends is to purchase a portfolio consisting of both high yield bonds and stocks which pay no dividends. Consumption would then be financed out of bond coupons *alone*. Procedures such as these might make an investor better off, though an improvement is by no means guaranteed. For one thing, such changes represent alterations in 'form', and form seems to matter. In addition, a key feature of a successful internally enforced self-control technique is its habitual characteristic. Breaking old habits and creating new ones is rarely an intellectual decision alone. Consequently, the normative aspects associated with behavior like the dividend phenomenon should be approached with great care.

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