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DECENTRALIZED INVESTMENT BANKING: THE CASE OF DISCOUNT DIVIDEND-REINVESTMENT AND STOCK-PURCHASE PLANS

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ABSTRACT

Discount dividend-reinvestment and stock-purchase plans allow shareholders to capture part of the underwriting fees incurred in new stock offerings and save sponsoring firms some of the usual underwriting costs. We tested the degree to which individual investors can profitably serve this investment banking function by implementing simple investment/trading strategies designed to capture the discounts and distribute the shares in the market. The large profits earned by our strategies raise serious questions about why it takes firms so long to raise the target level of capital and why many eligible shareholders do not participate in these discount plans.

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1. Introduction

The idea that in an efficient market investors cannot profit from publicly available information is taught in nearly all introductory finance courses. Despite supporting evidence, however, several papers present empirical anomalies. For example, French (1980) and Gibbons and Hess (1981) demonstrate that returns are significantly lower on Mondays than on other days. By implication, investors who plan to alter their stock positions should sell on Friday and buy at the close of Monday's trading. Keim (1983) finds that investments in small stocks yield abnormally positive returns during the first week in January. By implication, investors could profit if they buy shares of small stocks just before the first of the year.

These and other documented anomalies weaken the case for the efficient market. (See also the "Symposium on Some Anomalous Empirical Evidence Regarding Market Efficiency," 1978.) On the other hand, none of these papers test whether investors can actually profit from these anomalies. We add to the list of anomalies but with a twist. We document not only an apparent profit opportunity but also the results from investing our own money.

Our investment strategy was simple. We discovered that many companies offered stockholders the right to buy additional shares at a discount, typically of 5.263% (or 5/95) from extant market prices. To qualify to buy this discount stock, one had only to hold at least one share of company stock in certificate form and sign up to participate in the discount stock-purchase program. The next step was to mail in a check for stock periodically. The company then issued, free of commissions, discount shares that could be sold in the market within a few weeks. With an investment of $200,000 we realized a profit of $421,000 (consisting of $163,800 of net discount income (the sum of all gross discounts less transaction costs), $182,600 of return on investment due to a general increase in stock prices, and $74,600 of abnormal return on investment beyond the net discount income).

This profit is net of brokerage fees, hedging losses, and other transactions costs. Ninety percent of our activity occurred over less than two years.

For example, a J. P. Morgan shareholder could buy up to $5,000 of J. P. Morgan stock each month at a 5.263% discount. If the shareholder could immediately sell this stock at no cost, a sure profit of $263.16 would result on each transaction. We would have preferred J. P. Morgan's sending us a check for $263.16 each month to our having to mail in the check, buy shares, and then sell them at a later date. In fact, if we could have avoided the transaction costs incurred in undertaking these tasks, we would have been satisfied to receive somewhat less. If investment is undertaken once a month at a discount of 5.263%, the compound annual return exceeds 85% of the monthly investment amount.

Although it is a useful teaching device, the efficient markets hypothesis may leave students with the false impression that innovations go unrewarded. In fact, successful innovation holds the possibility of producing both generous financial reward for the individual and significant improvement in social welfare. In contemplating the transaction costs and the possible impact of the discount stock-purchase programs on stock prices, we considered it quite possible that the profit opportunities were more apparent than real. Although our back-of-the-envelope calculations indicated that participation in the programs would be profitable, we thought transaction costs, other unanticipated costs, and participation by other traders might well make abnormal returns impossible. By running our experiment with actual trades, we were able to provide direct evidence of our ability to innovate and earn abnormal returns in the market.

That we did profit handsomely suggests that the market is not as efficient as the textbook model suggests. Moreover, many of the programs existed for several years before we began our experiment, and program sponsors routinely informed shareholders of record of the opportunities to invest at a discount. Eventually, many companies eliminated the discounts on their programs as we were joined by other arbitrageurs who helped the firm raise substantial capital. We view our

profits as compensation for the provision of investment banking services to corporations offering discount stock-purchase programs, which delegate the underwriting process to shareholders. In retrospect, we were paid too much. We and others might have provided the same services for a much lower discount. We do not know whether sponsoring corporations could have achieved the same results at lower cost using an underwriter or whether we earned abnormal profits because other investors did not join us soon enough. Had more investors participated, corporate sponsors probably would have reduced their discounts sooner, reducing our profit and, as a result, reducing the costs to other shareholders of raising capital.

Over time, many corporations realized they could raise substantial amounts with this decentralized investment banking concept. BankAmerica, for example, reduced its discount four times in less than two years and allowed shareholders to invest much more than $5,000 per month. As a result, it raised over $350 million over this period at discounts well below 4%.

The use of discount stock purchase plans, and the closely related practice of allowing shareholders to buy stock at a discount only with reinvested dividends, raises several questions. We inquire whether these programs are equitable to nonparticipating shareholders and whether they represent an efficient institutional device for raising capital. We only begin to shed light on the answers to these questions. In conducting our experiment, we discovered a number of interesting features of these arrangements.

In section 2, we describe some features of these discount plans, and in section 3, we lay out details of the investment strategies we used to determine the costs of securing the discounts. In section 4, we compare discount stock-purchase plans with conventional underwritings as means of raising capital. Concluding remarks appear in section 5.

2. Characteristics of Discount Programs

Dividend-reinvestment and stock-purchase plans have been popular, especially among public utilities, for two decades. We identified 82 companies offering such plans at some point between 1984 and 1988. Cash discount plans are concentrated in banking and financial services, although public utilities, real estate firms, and a few manufacturers are also represented.

Industry Concentration

Table 1 reveals that 74 of the 82 plans we identified were concentrated in three industries: banking (45), real estate, including real estate investment trusts (15), and public utilities (14). Of our $3.6 million in investments, $2.6 million was invested in banks, and the rest was split relatively equally among real estate firms, public utilities, and other firms. Banks' prominence in these programs may reflect experimentation with an alternative institutional arrangement for raising capital in the face of regulatory pressure. We explore other motivations in section 4.

Investment Ceilings and Discounts

All firms' discount programs limit the allowable investment. The limits prevent certain shareholders, such as institutional and corporate investors, from fully exploiting economies of scale in purchasing shares and reselling them in the secondary market. Moreover, nearly all plans require that participants possess stock certificates issued in their own name rather than in the name of their broker as agent. This requirement prevents brokerage houses from offering a service that automates participation in the discount program on a large scale for their clients.

Table 2 reports the frequency distribution of maximum investment amounts, discount amounts, and the period over which investment ceilings apply (quarterly, monthly, or annually) for the 66 plans for which we have data.[1] In 57 of the 66 plans, the discount is 5% . Thirteen plans impose

[1] All of these programs offered shareholders an opportunity to reinvest dividends in shares of the company at a discount. The purchase limits tabulated in table 2, however, apply only to optional cash investments. An unlimited amount of dividends can be reinvested at a discount in these programs. This is true for all 82 of the discount cash purchase plans we surveyed and for hundreds of other programs that do not offer discounts on

monthly investment ceilings, 49 impose quarterly limits, and four plans impose annual limits. Twenty plans permit investments of $5,000 per quarter per account at a 5% discount. The next most common arrangements are $3,000 per quarter @ 5% (seven plans), $2,000 per quarter @ 5% (six plans), and $5,000 per month @ 5% (six plans).

With the exception of BankAmerica (whose plan is discussed separately), the maximum purchase permitted per account is $120,000 per year. The smallest purchase ceiling is $4,000 per year. Table 3 reports the distribution of annual purchase limits for the 57 firms offering 5% discounts. Twenty-two firms fall in the $20,000-$25,000 range, 14 in the $10,000-$20,000 range, and 8 in the $50,000-$100,000 range.

Several plans changed their investment ceiling or discount or both over time. For these firms, we show in the tables the terms in the earliest discount program prospectus we obtained. For example, Chesebrough Ponds began with a monthly investment ceiling of $5,000 that it later dropped to $1,000. CSX changed its limit from $5,000 per quarter to $1,500 per month. First Union's maximum investment ranged from $500 to $10,000 per quarter. Bank of New England, Bankers Trust, Koger Companies, and Koger Properties all initially offered 5% discounts, which they later reduced to 3%.

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optional purchases of additional shares with cash. In 1975, AT&T became the first to offer this kind of program. [See Light (1977) for an analysis of the AT&T decision to initiate a discount dividend reinvestment plan.] The plans in this latter category typically allow shareholders to purchase additional shares at 100% of fair market value but free of commissions. We did not buy shares to reinvest dividends at a discount to determine whether this offered a profit-making opportunity, but it may be worth noting that a stock paying dividends at the annual rate of 5% and offering the option to reinvest such dividends in additional common shares at a discount of 5% offers a "bonus" return of only one-quarter of 1 percent of the investment position carried per year.

A number of dividend-reinvestment plans allow holders of securities other than common stock to purchase common shares at a discount. Preferred shareholders are often allowed this option. Certain debtholders are also eligible to participate in some plans. Note that a 5% discount applied to the reinvestment of interest on 12% debentures translates into a "bonus" yield of 60 basis points. It might be interesting to study whether the yields on such securities are lower than on those of comparable risk but where the interest is <u>not</u> eligible for reinvestment in discounted shares.

BankAmerica represents the extreme case of term changes. It began with a maximum monthly investment of $10,000 and a 5% discount. The discount has since been reduced in four steps to 2%, and the maximum monthly investment has been increased substantially.

Calculating the Actual Discount Received

The price paid for shares purchased at a discount is based on an average of market prices observed over anywhere from 1 to 20 trading days. (See table 4.) The most common averaging periods are one day and five days.

In private conversations, corporate treasurers and investor relations administrators for some plan sponsors said they based the sales price on an average of prices over a number of days to minimize the effect of short sales on share price. Many investors in discount programs apparently lock in sure returns by selling shares short on the investment date. First Chicago, for example, altered its pricing formula, for precisely this reason, from one based on the price solely on the investment date to one based on a five-day average of high and low prices.[2]

Besides varying in length of the averaging period, plans vary along three other dimensions that are relevant to calculating discounts. First, there is the question of which prices are used: last traded, daily high and low, or closing bid and ask. More than 40% of the firms use last traded price. A similar number use an average of daily highs and lows. One in six firms use the average of closing bid and ask prices.

Second, the averaging period varies. In 60% of the plans it ends on the day of investment and in the rest on the day before. Third, the date by which investment funds must reach the plan administrator varies. Many firms permit funds to be tendered well beyond the point at which the averaging period for determining price begins.

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2 It is possible, however, to sell short on each of the 5 days preceeding the purchase date.

3. Historical Development of the Investment Program

Whether a 5% discount is a generous inducement to shareholders to play the underwriting role depends on the costs of participating in the plan. These include the costs of becoming informed about the plan's details, the cost of bearing or avoiding undesired market risks, the cost of monitoring the investment, the transaction costs incurred in the secondary market, and the cost of complying with margin requirements and tax laws. Because we faced so many uncertainties in implementing our investment strategies, we felt that simulating or otherwise estimating our costs using exogenously determined parameters would be too unreliable. As a consequence, we document here some of these costs from actual experience.

In August 1984, we obtained a prospectus for J. P. Morgan's discount program offering the opportunity to invest up to $5,000 per month per account at a discount of 5% (actually 5/95 or 5.263%) from market prices. This appeared to be so generous that we wondered why money didn't simply pour in, reaching the capital target almost immediately.

We decided to find out first hand what some of the costs to reap the "underwriting" discounts must be.[3] Since we knew there were other discount programs as well, we decided to participate modestly in a number of them to document their differences.

Our initial sources of data for discount programs were Standard and Poor's Cumulative Dividends, which included a table entitled "NYSE and ASE Companies Offering Dividend Reinvestment Plans" (pp. 162-3 in the 1984 volume), and a Money Magazine article entitled "No

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[3] This is a corollary of the Fama proposition. This proposition results from the apocryphal tale of the time Eugene Fama, Professor of Finance at the University of Chicago and one of the fathers of "efficient market theory," was out strolling with a colleague. On being told that he had just walked past a twenty-dollar bill that was lying on the sidewalk, Fama immediately replied, "Nonsense! If there were a twenty-dollar bill lying there, it would already have been picked up."

Brokerage Fees, and Discounts Too" (Jordan E. Goodman, October 1983, pp. 171-2). We telephoned or wrote to the administrators of some of the plans named for general information and prospectuses.

In September 1984, we purchased a single share in each of ten companies through a Merrill Lynch Sharebuilder account (maximum commission rate of 10% of the purchase price). The investment totaled less than $400, and our commission was $33.06. Single shares in an additional fifteen companies were purchased in early October at a cost of roughly $300. Since virtually all programs require that participants be shareholders of record, we instructed Merrill Lynch to transfer shares out in one of our names.

It took three to six weeks for our stock certificates and the sign-up forms for the discount programs to arrive. Eventually, we learned that investment could begin as soon as the plan administrators recognized us as shareholders of record in their computers. This cut the delay from the purchase of initial qualifying shares to investment in discount shares to about two weeks.

On November 1, we made our first discount investments: $3,000 in Hospital Corporation of America (we could have invested $12,500) and $4,000 in Bankers Trust (the ceiling was $5,000). Later that month, we made our first investment in seven other companies and our second investment in HCA and Bankers Trust. Our total investment in November was $47,500.

Unless the investor requests a certificate for shares purchased, the sponsors retain the shares "for safekeeping and convenience." Some program administrators will sell shares on request and mail a check for the proceeds, less a commission. We occasionally used this service, but we found that we could secure better commissions through our own broker, and we believed our broker could secure better execution of trades as well, particularly with limit orders. In any event, we typically requested that a certificate for "all whole shares purchased with the enclosed investment" be mailed out.

In early December, we received our first certificates for shares purchased through the discount programs. In the meantime, we had negotiated very favorable commission rates with a San Francisco broker. We promptly sold our shares as certificates were received, and deposited the net proceeds in our bank account. The cycle had been completed, and the hidden costs we expected to encounter never emerged. We were now ready to proceed to the next stage of the investment strategy.

During December, we invested an additional $55,000 in various programs. In addition, we purchased multiple shares in the programs that appeared to operate smoothly. Finally, we began to search for additional discount programs. We consulted the April 1984 Directory of Companies Offering Dividend Reinvestment Plans, which listed names and addresses of companies that administer their own plans and plans for others.[4]

In January 1985, we began making investments in discount programs in batches. With two adults and two children in each household, our batch size was typically eight: eight checks and eight investment stubs indicating our intent to invest and our desire to have certificates for shares mailed out. The checks were mailed in eight company-supplied postage-paid first-class envelopes or sent by overnight mail in a single envelope at our expense.

We used overnight mail to ensure that the plan administrator received the funds on the requisite date,[5] as well as to take advantage of the averaging rules many plans use to determine the purchase price for new shares.

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4 By using an optical scanner and a sort/merge function of a word processing package, we were able to send out within hours several hundred letters requesting prospectuses. This procedure turned up a number of discount programs not identified in other data sources. Some time later, we came across an annual publication put out by Evergreen Enterprises listing companies with dividend reinvestment programs. It specifically notes those with cash discount programs. Although we learned of some new programs from this source, we found it contained somewhat dated information.

5 The date on which funds had to be received by program administrators often preceded the date on which funds were invested by several days. We are quite sure that in several cases, funds received after the required date were nevertheless accepted for investment. In one instance, however, funds were returned for being too late.

We were surprised that many programs do not require investment funds to be tendered before the averaging period starts. As a result, we were granted a valuable option. If share prices declined during the averaging period, part or all of the discount could disappear, and we could choose not to invest that period.[6] This option is particularly valuable in plans that impose investment ceilings over periods that cover more than one investment date. For example, it is common to allow investment once a month with a maximum per account for any calendar quarter. In these programs we avoided investment in the first month of each calendar quarter unless the price on the day before the required payment date had increased during the averaging period by a program-specific threshold percentage. This strategy enabled us to increase our average discount above the 5.263% we would have expected if we had ignored price behavior during the averaging period in making our investments. In one case, we were able to achieve a discount of 10% through strategic timing of investment. In several other cases, we earned 8%.[7]

Batch processing was just one of several refinements we made in our investment strategy in January 1985. The others included (1) the purchase of insurance against price declines on our net investment position; (2) the purchase of more than eight initial (qualifying) shares in companies offering new programs which enabled us to experiment with setting up more than eight investment accounts although we had only eight social security numbers in our two immediate families; and (3) the securing of lines of credit at local banks.

Insurance

From time to time, we used three strategies to protect ourselves against stock-price declines. First, we purchased in-the-money put options on the stocks in which we took long positions (e.g., J. P.

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[6] To illustrate, suppose the purchase price for shares is 95% of the average closing price over the five days ending just prior to the investment date. If these prices are $25.00, $24.50, $25.00, $23.75, and $23.00, the average is $24.25, and the purchase price becomes 95% of this average, or $23.0375. The "discounted" purchase price of the shares actually exceeds the last traded price of $23.00, and the effective discount becomes a negative 0.16%.

[7] Although we calculated optimal investment strategies for these averaging programs, we didn't always implement them. The careful monitoring of daily price movements is time-consuming.

Morgan, First Chicago, Hospital Corporation of America). These specific hedges were effective but expensive. The bid-ask spreads on firm-specific options are relatively high, as are the commissions. One could easily spend 1% of the exposure in purchasing insurance in this fashion. Moreover, it is time-consuming to implement these hedges.

Our second hedge was to sell short. This method, too, is effective but expensive, but here the expense is of a different sort. We did not receive the proceeds from our short sales, and we were required to pledge cash or securities as collateral. Although we put up $200,000 of personal capital, it wasn't long before we faced a capital constraint even after margining our accounts. A number of program sponsors have told us that short selling is common, particularly among investors who control a large number of investment accounts. Apparently, such investors do not face the same capital constraints we did.

Our initial motivation in using specific hedges, despite their cost, was to determine whether sizable riskless profits could be secured. Once we established that riskless profits of roughly 4% of investment could be secured on a typical 5% discount program, we decided not to use these hedges further, because the effective "insurance premium" (including transaction costs) exceeded the benefit of price protection.

Specific hedges had another drawback. Shares held for more than six months were eligible for long-term capital gain treatment at federal tax rates capped at 20% in 1984-1986 versus 50% otherwise.[8] But a specific hedge prevents the holding period from running. Several of our firms turned out to be merger targets giving rise to large capital gains. Where specific hedges were not employed, we chose to hold for six months securities that had appreciated significantly in the three

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8 Actually, the gain could be taxed at 0% if the shares were used to make qualified charitable contributions, an opportunity we chose to exploit for some of our appreciated shares. Some of these shares were used to endow charitable trusts (e.g., the Mark and Sheila Wolfson Philanthropic Fund). This enabled a tax deduction to be taken in 1986, at a federal tax rate of 50%, for charitable gifts to worthwhile causes to be made in years after 1986, when tax rates were scheduled to be well below 50%.

to five weeks between our investment and our receipt of a certificate for shares purchased. As a result, long-term capital gains comprise 65% of our total capital gains.[9]

Our third hedge was a macro hedge, in which we simply purchased actively traded put options on a market index. This enabled us to sleep reasonably comfortably at night even when, at its peak, our total investment in stocks exceeded $500,000. Still, industry-specific and firm-specific risk were not well hedged throughout most of the period, and we did suffer one disaster, a $16,000 loss on a $34,000 investment in Banks of Mid-America in 1986. In all, the three hedging strategies gave rise to gross losses of $27,000 from short sales and put options.

Restrictions on Investment Accounts

We realized early that economies of scale were significant in our operations. The most important costs were fixed: the time we spent learning of programs' existence, about when and where to invest and about when to sell securities. Because our investments across accounts were "carbon copies," there were great economies in record-keeping as well.

There were also large economies of scale in brokerage commissions. Our broker agreed to sell the shares in our eight accounts in a single trade through a single brokerage account, cutting eight separate checks for the proceeds.[10] The brokerage fee was the same whether shares were sold for two or eight separate shareholders. This enabled us to trade at commissions averaging less than one-quarter of 1 percent of the market value of the shares sold, with many trades at less than one-eighth of 1 percent.[11]

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9 The discount from market price at which shares are sold to participants is taxed as dividend income, not capital gains. In fact, this dividend income is even eligible for the dividends-received deduction (which has ranged from 70% to 85% over the 1984-1988 period) for corporate investors. This makes most of the discount income tax exempt at the corporate level.

10 To minimize confusion among the taxing authorities, we constructed a spreadsheet tracing each sale to the specific shareholders. This became our so-called 1099-B reconciliation schedule, a copy of which was filed with each of our tax returns.

11 This is the round-trip commission cost, since shares acquired directly though the discount program are commission-free.

Given these scale economies, we tested whether we could set up more accounts in some programs than the eight we already had. We found plans varied tremendously in their willingness to tolerate proliferation of accounts. A couple of plans openly encouraged multiple accounts, with administrators telling us by phone that some investors had many more accounts in their plan than we did. For example, several large banks have had more than one investor with between 50 and 100 related accounts. These investors routinely invested the maximum allowed per account and quickly turned over the shares to arbitrage the discount income. Other plans were less sanguine about this practice. Consider the following:

> "Optional cash payments received in excess of $12,500 per calendar quarter purported to be invested in multiple accounts for the benefit of the same Participant will be returned, without interest, if the company reasonably determines that the same Participant is, through the opening of multiple accounts, investing an aggregate of more than $12,500 in any calendar quarter."
>
> (Hospital Corporation of America, Supplement to Prospectus dated 8/26/82, Supplement dated 1/17/84, p. 1)

Similar sentiments are reflected in the prospectuses of California Real Estate Investment Trust (9/3/85, p. 16), New Jersey National Bank (7/16/84, pp. 5-6), and Storage Equities (8/30/85, p. 10).

Most plans did not include language such as that reported above, however, and the use of multiple accounts was publicly acknowledged by some administrators. For example, according to the administrator of treasury services at TECO Energy, a number of investors established multiple accounts to circumvent the limits on cash payments. (Source: Wall Street Journal, 4/26/86, p. 33) The director of shareholder relations for Indian Head Banks, in a letter to shareholders announcing the termination of cash discounts, stated that arbitrage and multiple accounts were the primary reasons for cancelling the program.

To establish whether multiple accounts could be used, we created revocable trusts.[12] We invested a total of $96,000 of trust funds through the discount programs of seven companies.

We sought legal counsel on the use of these trusts to augment our participation in some discount programs, and were assured of their legality. None of the companies in which trust investments were made restricted multiple accounts in their prospectuses. Moreover, none of these companies ever questioned our eligibility even though we mailed checks and investment stubs in the same Federal Express envelope used for the other eight accounts. Once we established that additional accounts were possible, we stopped using them.

Securing Lines of Credit

Once we began investing in batches, we soon faced a capital constraint. In response, we arranged for lines of credit totaling $300,000: a $200,000 line at prime plus 1.5% and a $100,000 line at prime plus 2.0%. Our borrowing never exceeded 50% of our total investment because of margin rules.

The credit lines were terminated at the end of 1986. During the two years in which they were active, we accumulated $14,000 in interest expense. At an average interest rate of 12%, this translates to an average loan balance of about $58,000. The actual amount fluctuated considerably. Indeed, at some points we held substantial cash positions, generating $7,000 of interest income over these two years. Since idle cash yielded interest at roughly 2% below prime, we were careful to pay down our loans before accumulating cash. At an average interest rate of 8%, our average cash balance was on the order of $44,000, or $14,000 less than the average size of our loan.[13]

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12 A revocable trust is a trust controlled by the grantor or another designated trustee. Assets can be added to or removed from the trust at any time. We were able to obtain additional tax identification numbers by using these trusts, and this was a requirement to set up additional accounts in some programs. For each trust, we designated a 5% income beneficiary and named the trust after that person. We retained the residual interest in the trust income and assets.

13 The $14,000 excess of average loan position over average cash balance is equal to the $14,000 of gross interest expense on our loans only by coincidence.

Changes in the Level of Investment Activity Over Time

Table 5 reports that we invested through the discount programs of 30 companies over the 1984-1988 period. For all but two firms, we invested positive amounts in three or fewer of the five years, primarily because discounts were eliminated.[14] We invested in only one calendar year in eleven firms, two calendar years in eleven firms, three calendar years in six firms, four calendar years in one firm, and all five calendar years in one firm. We invested in 14 firms in 1984, 22 firms in 1985, 17 firms in 1986, three firms in 1987, and four firms in 1988. Although we invested over $2 million in 1985, we invested just under $1 million in 1986 and $100,000 in 1987.

Our total initial investment over the five-year period for any given firm ranged from a low of $3,000 to a high of $400,000. For any given year, initial investment in individual firms ranged from a low of $1,000 to a high of $370,000. The $370,000 was invested in J. P. Morgan in 1985. Morgan's discount was terminated in October 1985. The $370,000 investment was the result of investing $5,000 per month in eight accounts for eight months plus $5,000 in ten accounts for one month. A total of $315,000 was invested in Bank of New England, also in 1985. Like J. P. Morgan the bank terminated its discount late in 1985. The news of such terminations brought us about as much cheer as the receipt of an IRS audit notice. In table 6 we list the stocks in which we acquired initial shares but made no further investments. In most cases, these companies terminated their discounts before we could buy shares.

While we knew of a number of other programs, all were less attractive to us than those we initially patronized.[15] Some programs in which we did not participate imposed investment ceilings

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[14] The two-year investment hiatus in South Jersey Industries in 1986 and 1987 resulted from the termination of discounts at the end of 1985, followed by their renewal in 1988.

[15] We are aware of ten programs that were still active at year-end 1988 and a few programs that were initiated in 1989.

that we believed were too small to justify the cost of time and explicit transaction costs. In others, the discount was less than 5%.

In principle, a 3% discount program was quite profitable, but not generous enough to compensate for our time given the modest scale at which we invested. Our out-of-pocket expenses consisted primarily of brokerage fees and execution costs. Execution costs arise because we expect to buy shares at prices that represent an average of the bid and ask prices, while we are likely to sell shares in the market at prices closer to prevailing bid prices.

Recent evidence shows that the bid-ask spread, in relation to market prices, decreases with greater trading volume and with higher market value of outstanding equity; for large, actively traded firms, the spread is less than 1% [see Sirri (1989) and Barclay and Smith (1988)]. Evidence also suggests that nearly 40% of all trades on the New York and American Stock Exchanges may occur within the bid-ask spread. Although we were not able to document it, we believe that many of our trades (both market orders and limit orders) were executed within the bid-ask spread. Moreover, we are confident that the weighted average bid-ask spread for our firms was under 1%. As a result, 0.5% would seem to be a conservative upper bound estimate of our execution costs. On the other hand, by checking trading volumes and the size of bid-ask spreads, we estimated that the execution costs to trade shares in <u>some</u> programs were more than 2%, and we avoided investing in these plans.

Another reason for not investing in certain programs was that they required considerable monitoring to determine whether a reasonable discount was available. CAL REIT, for example, offers shares at a 5% discount, but its formula for calculating the market price requires numerous tedious calculations. The prospectus even warns that the discount could be negative.[16]

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[16]"The Market Price is the highest of the following series of prices: (a) the average of the High and Low Sale Prices of the Common Shares, as quoted under the American Stock Exchange Composite Transactions, on the date the distribution is declared; (b) the average of the Daily Closing Prices of the Common Shares, as so quoted, for a period of ten (10) trading days prior to the distribution payment date (the "Investment Date"); and (c) the average of the High and Low Sale Prices of the Common Shares, as so quoted, on the Investment Date. If no Common Shares are traded on the relevant distribution declaration date or Investment Date for purposes

Two other factors contributed to our sabbatical from investing in 1987. First, a regulatory change applying to brokers precluded our trades from being merged into a single transaction after December 31, 1986. This increased our proportional brokerage fee dramatically. For the trades undertaken in 1988, our brokerage fee still averaged well under one-half of one percent, but if we had undertaken the same trades in 1985 and 1986 under the post-December 31, 1986 rules, our commissions would have been three to four times as large as the 0.22% rate we incurred in those years (for an additional cost of $15,000-$20,000).

The final factor relates to family tax planning. Before the effective date of the Tax Reform Act of 1986, the dividends and capital gains earned in our children's names were taxable at bargain rates. As of January 1, 1987, this was no longer true for two children.[17]

Stock Price Performance for Firms in which We Invested

One concern we had was that part of our discount would be lost to poor stock performance. We cannot address this question definitively, but our anecdotal evidence suggests that, if anything, we outperformed comparable firms not offering discount programs.

Table 7 shows that we generated $190,000 of gross discount income, $25,000 of dividend income and $215,000 of capital gains. From this $430,000 of gross income we subtract net interest expense of $7,000 and $2,000 of other expenses, leaving $421,000 in net profits.

How does our nondiscount income compare with what we would have earned if we had invested alternatively? Ninety percent of our investment was concentrated around 1985-1986

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of calculating the Market Price, the daily High and Low Sale Prices shall be determined on the basis of the most recent prior date on which Common Shares were traded."
(CAL REIT, Prospectus, 9/3/85, p. 7)
Page 15 of the CAL REIT prospectus warns in italics that the discount could theoretically turn out to be a negative one.

[17]Children under fourteen now pay tax essentially at their parents' marginal tax rates.

(including year-end 1984 and the beginning of 1987), and over 70% of our funds were committed to bank stocks. During this period, an investment in the Standard & Poor's 500 index would have returned 56%, including dividends. The Salomon Brothers index of 35 bank stocks returned 59%. We were actually somewhat more heavily invested during 1985 and the first half of 1986 than during the second half of 1986. The S&P 500 stocks returned 59% in the six quarters ending in mid-1986, and the Salomon Brothers bank stocks returned 76%. S&P 500 stocks then fell by 2% in the second half of 1986 and the bank stock index fell by 9%. We were virtually out of the market in 1987 and began investing again early in 1988. This proved quite lucky: bank stocks lost 17% in 1987 and gained 23% in 1988.

To estimate whether our investment in discount programs underperformed a naive investment strategy, we assumed that our investment alternative would have simply been to invest in the Salomon Brothers Bank Stock Index. These calculations are shown in panel B of table 8.

We invested $200,000 at the start of 1985. If we had left this entire amount invested in the index throughout 1985 and 1986 we would have realized a return of 59%, or $118,000 in excess of our initial investment. At the end of June 1986, however, we withdrew $150,000. This would have saved us $13,500, because the index declined by 9% over the second half of 1986. We also invested our gross discount income of approximately $171,500 during 1985 and 1986. On average, approximately half, or $86,000, was invested throughout the entire period. An investment in the Salomon Brothers index would have returned $50,700 on this average investment over the period. Finally, our net borrowing over the period averaged $14,000, and we would have earned $8,300 on this investment.

We withdrew our entire investment at the beginning of 1987. An average investment of $90,000 in 1988 would have returned $20,700 if invested in the bank stock index.

After subtracting our hedging losses and transaction costs, we estimate that we could have earned $182,600 by investing in the bank stock index rather than in the stocks we actually held. We call this the net benchmark return. This is a conservative benchmark, in that 25% of our actual investment was in industry sectors that underperformed bank stocks.

Turning to panel A of table 8 we see that the actual return was $257,200 more than the $163,800 of net discount income we earned. Net discount income is estimated to be 5.26% of the $3,609,000 invested less the costs to sell shares (including both brokerage fees of 0.22% and execution costs of 0.50%).

The $257,200 of nondiscount income is $74,600 above the benchmark return. With an average investment of approximately $250,000 per year for two years and $90,000 for a third year, the excess return (above the benchmark) is 12% per year. So the concern that discount income would, in part, disappear because of poor stock performance for the sponsoring firms was not borne out by our experience. The favorable stock performance for firms offering discount stock purchase plans is somewhat surprising and is worthy of further investigation. Are there common characteristics across these firms, not recognized by the market ex ante, that caused them to perform so well?

4. Decentralized Investment Banking

Firms can raise equity capital in myriad ways, including conventional underwritings of common or preferred shares, equity rights offerings, warrant offerings, convertible bond and preferred stock offerings, share issuances to purchase assets or shares in mergers and acquisitions, and awards of shares (or contingent claims to shares) to employees through retirement plans and incentive compensation arrangements. In principle, issuing shares directly to shareholders at a discount can make shareholders better off than they would be under conventional underwritings. If the discount offered to shareholders is similar to the fee an underwriter would charge, and if the post-issuance

value of the firm is identical with the alternative methods of raising capital, the discount plan can be viewed as offering shareholders a dividend bonus. But this analogy can be taken only so far, because most shareholders do not participate in discount programs, the right to purchase shares at a discount is typically not related to the level of share ownership (unlike rights offerings) and the plans do not prevent new shareholders from purchasing small ownership interests in the secondary market and then supplying a disproportionate amount of the new capital at bargain prices.

How Much Money is Raised through Discount Programs?

Table 9 reports capital amounts raised through dividend reinvestment plans in 1985 for two categories of firms. In the first category are eight firms offering 5% discounts on optional cash purchases of shares throughout the entire calendar year (1985) and that reported the amounts raised as a separate line item in their annual reports.[18] The seven firms in the second group make similar financial statement disclosures but offer no discounts on cash purchases.

The eight firms offering 5% discounts raised through their programs an average of 98% (median; the mean is 93%) of the common and preferred dividends they paid in 1985. By contrast, the seven firms offering no discounts raised an average of 12% (median; the mean is 14%) of their common and preferred dividends.

United Water Resources and Hexcel offer less generous investment opportunities than the other six firms offering 5% discounts. Although the table does not show it, these firms' common stocks are also less actively traded than the stocks of the other firms, making execution costs higher. Accordingly, the capital raised for these firms, as a fraction of common and preferred dividends, is just above 50%, or less than half as much raised by the other firms offering 5% discounts.

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[18]Many firms lump the amount raised through these programs with amounts raised in alternative ways. These firms are excluded from the table.

The other firm that stands out is Hartford National. Although this is a large firm that offered generous investment limits and whose shares traded actively, the program raised only 51% of common and preferred dividends in 1985. The only clue we have to explain this discrepancy is that Hartford National was notably slower in 1985 than were other firms in sending us certificates for shares we bought through the discount program. If our experience is typical, this slowness discouraged shareholder investment.

Over the nine months of 1985 in which J. P. Morgan offered a discount program, it raised $92 million through its dividend reinvestment plan (or 44% of common and preferred dividends paid for the entire year). In 1986, in the absence of a discount cash purchase option, $55 million was raised through the reinvestment plan (only 23% of common and preferred dividends).

The decline in capital raised through the Bank of New England's dividend reinvestment plan was even more dramatic. In 1986, in the absence of a discount, only $8.3 million was raised (down from $41.7 million in 1985). This is only 15% of common and preferred dividends (down from 96% in 1985).

Investors clearly respond to the opportunity to buy new shares for cash at a discount, but a substantial majority of shareholders do not exercise their option to purchase shares at a discount. It is puzzling that firms are willing to incur such high costs to pay dividends and then issue an offsetting amount of new equity. Not only is there the familiar tax cost of paying dividends, but here we also have the administrative cost of running the discount program, the transaction costs associated with resales of shares in the secondary market, and perhaps most important, the cost to existing shareholders of offering 5% discounts to new shareholders. Although the answer may relate to concern over adverse stock market responses to cutting dividends or floating an equity issue through an underwriter, these phenomena are not well understood and deserve closer attention.

Are Short-Term Traders Really Welcome?

Apparently, firms have objectives other than raising capital in sponsoring discount stock-purchase programs. Some are interested in promoting long-term investment by shareholders. Others appear interested in encouraging wider ownership of shares, perhaps to make a change in corporate control more difficult to effect. And with the possible exception of BankAmerica and a couple of other large banks, all firms seem to be concerned about the effect on share prices of arbitrage by plan participants.

Although a few program sponsors seem content to have shareholders purchase shares at a discount and then sell them quickly, others clearly oppose such activity. Excerpts from prospectuses for firms in the latter category appear below:

> If it appears to Chesebrough that a participant has used, is using or may be using the optional cash payment feature to generate short-term profits or (act) otherwise with an effect that, in the sole judgment and discretion of Chesebrough, is not in the best interests of Chesebrough or Chesebrough's other shareholders, then Chesebrough may decline to issue all or any portion of the shares of Chesebrough Common Stock for which any optional cash payment by or on behalf of such participant is tendered.
>
> (Chesebrough Ponds, Prospectus, 5/22/85, p. 8)

The antiarbitrage language in these prospectuses is apparently not entirely without content. Our efforts to help Chesebrough Ponds raise capital were, after a number of months of faithful investment, rewarded with a six-month suspension of four of our eight accounts. We received no suspensions from any other company, and our investments were never refused. We never received a single letter of warning from program sponsors.

At the other extreme from Chesebrough Ponds is BankAmerica. It entered the discount program business relatively recently, introducing its Shareholder Investment Plan in June, 1987. The plan permitted shareholders of record to invest up to $10,000 per month in common shares at a 5% discount from market prices. The plan was so popular that BankAmerica decided to reduce the discount to 4% a mere four months later.

In June 1988, the discount was reduced further to 3% and the bank announced that participants could request permission to invest more than $10,000 per month.[19] We inquired by phone whether an investment of $100,000 in the forthcoming month would be allowed. The answer was yes, but the plan administrators would not reveal what the investment ceiling might be.

The June 1988 amendment contained another change making it clear that the bank was primarily interested in using the discount program to raise equity capital at low cost: it allowed participants to enter standing orders to have the bank sell their shares immediately after investment. The plan administrator would then simply send a check for the proceeds less a brokerage commission.

BankAmerica raised over $150 million from its discount program in the first year. In September 1988, just fifteen months after the program was introduced, the discount rate was cut for the third time, to 2.5%. And in February 1989, when more than $350 million had been raised in just over a year and a half at an average discount rate of well below 4%, the discount was reduced once again, this time to 2%.

The BankAmerica program raises an interesting tradeoff between equity and efficiency considerations. While a relatively few well-endowed shareholders are likely to dominate the plan, they are also likely to be the most efficient "underwriters" of the firm's securities, and at a 2% discount, the total underwriting fee paid is 60% less than that incurred in the 5% discount program.

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[19] It also announced that optional cash payments could be made electronically using the bank's Home Banking™ or Business Connection™ systems.

Corporate Finance Implications of Dividend-Reinvestment and Discount Stock-Purchase Plans

The evidence in section 3 suggests that raising equity capital through a discount stock-purchase plan does not lower a firm's stock price. A negative valuation effect could be capitalized into the price of the stock, however, when the plan is announced. We did not investigate this possibility, but some related evidence in Dubofsky and Bierman (1988) is worth citing. They find, for a sample of 46 firms announcing the initiation of discount dividend reinvestment plans (DRP) between 1975 and 1983, and for which no other Wall Street Journal news items were reported in the three days surrounding the DRP announcements, that common stock returns, in excess of the market, were statistically significantly positive on the announcement by an amount averaging one-third to one-half percent.

These results contrast with the documented announcement effects of underwritten stock and stock rights issues. Asquith and Mullins (1983) report a -3.14% abnormal two-day return for industrial stocks and a -0.75% abnormal two-day return for utilities on the announcement of new equity issues. Eckbo and Masulis (1989), updating the results in Smith (1977) on underwritten stock and stock rights issues through 1981, find a significant -3.3% abnormal return on the announcement of an underwritten industrial offering, approximately twice the abnormal return on a rights offering. These negative returns are for the entire outstanding equity of the firm and may represent a very large fraction (in some cases more than 100%) of the new equity being issued.

We learned from our conversations with the sponsors of discount stock-purchase plans that the negative response to an announced equity offering is an important consideration in decisions to raise equity through a stock-purchase plan. It has been noted that the stock-price decline may be attributable to investor concern that equity is being issued because management has private information suggesting that the stock is overpriced [see, for example, Myers and Majluf (1984)]. But if management wants to raise equity capital and does not have negative inside information, committing the firm to raise money to finance a future project over a period of months or years, rather

than all at once, may mitigate the adverse selection problem. Raising capital over time allows some of the information management has when the plan to raise equity is announced to be reflected in publicly disclosed accounting measures of performance and other outlets, thereby reducing information asymmetries.

This may help to explain why firms limit the amount of stock investors may purchase at a discount. This practice slows down the rate at which funds are raised, which may enable the firm to issue equity without incurring the loss in the market value that typically accompanies conventional underwritten equity issues. So discount stock-purchase plans can be viewed as a form of "sunshine trading," wherein firms announce to the market that they wish to raise a given amount of capital but give shareholders some control over the rate at which it is raised. Although this remains conjectural, it would be interesting to determine whether this is an important motivation for stock purchase plans.

Smith (1986) has argued that the more severe the information asymmetry between managers and outside securityholders the greater the demand for the monitoring and certification services of an investment banker. The discount of 5.26% offered to shareholders in discount stock-purchase plans is similar to the direct costs incurred in using the services of an underwriter. But the discount stock purchase plan allows some of the discounts to be earned by current shareholders, and these plans appear to avoid a negative impact on stock prices. Eckbo and Masulis (1989) estimate the total expenses of firm commitment offerings (where the investment banker bears the risk of stock-price uncertainty while stock is being distributed in the marketplace) to be 4.9% over the period 1963-1981. These costs appear to average between 3% and 4% in the Eckbo and Masulis sample for the dollar range of offerings encompassed by our stock purchase programs. These expenses include direct issue costs other than investment banking fees that average under 1%.

While Bhagat, Marr and Thompson (1985) estimate that the introduction of Rule 415 (shelf registration)[20] in March 1982 reduced fees significantly (15-50%, depending upon how one interprets their data), this estimate results from comparing underwriting costs of firms that used shelf registration from those that did not, and these firms seem likely to differ along dimensions not captured in the study.

Table 10 shows the underwriting costs by size of offer and year of offering for the post-shelf registration years 1983, 1985, 1987, and 1989 (through mid-June of 1989), for all common stock issues and bank common stock issues, other than initial public offerings. The data come from Securities Data Corporation's New Issues Service. In the $20-$50 million range for share issues, the fees (excluding direct issue costs) are 4.5% to 5.0% of issue size, somewhat higher than those reported by Eckbo and Masulis for the pre-shelf registration period. Fees for shares issued by banks are somewhat smaller, typically 3.5% to 4%. So while discount stock-purchase programs are not directly comparable to underwritten offerings as a mechanism for raising new capital, the direct cost of the two mechanisms appear to be similar, and discount programs both appear to avoid market impact costs and allow some of the underwriting fees to be earned by existing shareholders.

5. Concluding Remarks

Developing the raw data on which this case study is based was fun (at least for a while).[21] The experiment allowed us not only to test whether we could earn abnormal profits based on publicly available information, it also led us to consider why firms would use discount stock-purchase programs with restrictions on investor participation. At a discount rate of 5%, the programs in which we participated offered substantial profit opportunity, especially to investors choosing to

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[20] In a shelf registration, firms can register securities in advance of an issue and update the registration documents only if information has changed since the last registration. This allows a firm to market a new issue more quickly than if it had to secure new Securities and Exchange Commission approval.

[21] But the next time we consider undertaking "case research" we hope it will be a little less labor intensive. Putting together a 20 page single-spaced typed schedule of capital gains and losses for our 1985 tax returns was not enjoyable.

exploit the natural economies of both scale (for a given plan) and scope (across plans) available. Since most shareholders do not participate in these plans (and therefore do not share in the discounts) the question arises whether a 5% discount is too generous to maximize the welfare of current shareholders. The elimination of discounts on optional cash purchases in so many plans (particularly in 1986) is consistent with this speculation.

Another explanation for termination of cash discounts is simply that firms raised the target level of capital. Given the profits we (and presumably others) made, firms might have been able to raise the same amount of capital at less direct cost to shareholders by reducing the size of the discount and increasing investment limits, as BankAmerica and a few others have done. On the other hand, if there is value in slowing down the rate at which capital is raised, allowing large investors to acquire shares too quickly could exact an adverse selection-related cost by depressing share prices. But if capital is required for immediate investment, raising capital slowly may not be viable.

Some of the firms we spoke with found discount purchase programs a highly cost-effective means of raising capital. Others had less favorable experiences. They were unhappy that they could not control the behavior of arbitrageurs who established many accounts and invested more capital than the sponsoring firms would have preferred. A number of sponsors observed that their investment bankers discouraged them from using these programs, although they were aware of the potential conflicts of interest that could motivate such warnings. After all, the investment banks lose underwriting fees if these programs displace conventional underwritings. As banks and other capital-hungry companies gear up for the next round of capital raising, it will be interesting to see whether the discount stock purchase plans play an important role, and if so, how much, how often, and at what discount shareholders are permitted to invest.

Table 1

Distribution by Industry of Cash Investment In Common Stocks Purchased at a Discount Through Stock Purchase Plans (1984-1988)

	Number of Firms					Range of Investment per Firm ($000)	Total Investment ($000)
Category*	Bank	Real Estate or REIT	Utility	Other	Total		
I	21	4	9	4	38	$ 0	$ 0
II	8	5	1	0	14	0	0
	2	1	2	0	5	>0-6	24
	1	3	0	1	5	>6-50	182
	2	0	1	2	5	>50-100	371
	4	2	0	1	7	>100-150	899
	3	0	0	0	3	>150-200	573
	1	0	1	0	2	>200-300	530
	3	0	0	0	3	>300-400	1030
	24	11	5	4	44		$ 3609
I + II	45	15	14	8	82		
III	14	5	2	4	25		$ 3585

Total investment by industry:

Bank		$ 2592
Nonbank:		
Real estate	$ 360	
Utility	335	
Other	322	1017
Total		$ 3609

* Category I: firms in which we did not become shareholders of record and thus were ineligible to participate in discount programs.

Category II: firms in which we did become shareholders of record, although, as the table reveals, we chose to invest through the discount programs of only 30 of these 44 firms.

Category III: all but the first two rows of Category II firms.

Table 2

Frequency Distribution of 82 Common Stock Purchase Plans by Maximum Cash Purchase Allowed per Account and Discount from Market Price for the Period 1984-1988[a]

(Table Values Correspond to Number of Firms that Fall into Each Category)

Purchase Frequency	Purchase Limit	Discount from Market Price 5%	4%	3%	2%	0%[b]	Total No. of Firms
Monthly	$ 1,000	4					4
	2,000	1		1			2
	5,000	6					6
	10,000	1					1
	Total Number of Firms	12		1			13
Quarterly	$ 1,000	3					3
	2,000	6					6
	2,500	1	1				2
	3,000	7					7
	3,500			1			1
	4,000	2					2
	5,000	20			1	1	22
	6,000			1			1
	10,000	1		1			2
	12,500	1					1
	20,000	1					1
	30,000	1					1
	Total Number of Firms	43	1	3	1	1	49
Yearly	$ 3,000	1					1
	20,000	1					1
	30,000					1	1
	40,000					1	1
	Total Number of Firms	2				2	4
	Total Number of Firms	57	1	4	1	3	66
Data not available							16
							82

[a] Several plans changed the maximum investment amount and/or discount over time. These firms are reflected in the table at the terms contained in the earliest discount program prospectus we have.
[b] Although these three plans offer no discount from the calculated price of shares, the price is based on an average of prices over a number of days (ranging from 5 to 20), and payment may be made just prior to the end of the averaging period. As a result, the effective discount can be generous.

Table 3

Frequency Distribution of Maximum Annual Cash Investment Amount Permitted per Account for the 57 5%-Discount Programs For Which Data Are Available (1984-1988)

Range of Annual Investment, I	Monthly Programs	Quarterly Programs	Annual Programs	Total
I < $ 10,000		9	1	10
$ 10,000, ≤ I < $20,000	4	10		14
$ 20,000, ≤ I < $25,000	1	20	1	22
$ 25,000, ≤ I < $50,000		1		1
$ 50,000, ≤ I < $100,000	6	2		8
I ≥ $100,000	1	1	—	2
	12	43	2	57

Table 4

Formulae to Determine Purchase Price of Shares and Timing of Payment Requirements

Number of Days Prices Factored In	Number of Firms Using: Last Traded Price	Average High and Low Price	Average Closing Bid & Ask Prices	Averaging Period Ends on Day: Of Investment	Preceeding Investment	Advance Payment Requirement (In Days)
1	1			x		2
	1			x		3
	1			x		5
	2			x		10[a]
	1				x	-
		7		x		-
		1		x		1
		1		x		2
		1		x		5
		1			x	-
			1	x		-
			1	x		4[b]
2	1				x	5
3	1				x	3
	1				x	5
			1		x	-
			1		x	2
5	3			x		-
	2			x		2
	2				x	-
		1		x		1
		1		x		2
		1		x		5
		1			x	2
		1			x	5
			2		x	-
			2[c]		x	5
10	1			x		2[d]
		1		x		-
		1		x		10
		1			x	>10[e]
15	1				x	4[f]
20	1				x	1
	2				x	4[g]

[a] One of these firms expressed willingness, by phone, to relax the ten-day advance payment requirement.

....Continued....

Continuation of Table 4

Formulae to Determine Purchase Price of Shares and Timing of Payment Requirements

[b] The advance payment requirement varies month to month, averaging four days.

[c] One of these firms initially set the price equal to the average closing bid price on the five days preceding the investment date. This was later changed to the average of the bid and the ask price, effectively reducing the discount by one-half of the bid-ask spread.

[d] This firm required advance payment at least ten business days preceding the investment date. However, funds were refundable up to 48 hours prior to the investment, so the effective advance payment requirement is two days. This is important in determining the effective discount, since the investment can be avoided if prices decline during the first eight days of the averaging period.

[e] Advance payment requirement varies with the dividend record and dividend payment dates.

[f] The advance payment requirement varies month to month, averaging four days. Despite the 15-day averaging, the advance payment requirement was waived by phone one month when the price had risen substantially, making the discount approximately 10%.

[g] The advance payment requirement varies, month to month, averaging four days. The averaging period for these two companies also varies. More precisely, it is the average closing price for the entire month preceding the investment.

Table 5

Cash Investment Amounts in Common Stocks Purchased At a Discount Through Stock Purchase Plans by Firm and Year
(in thousands of $)

		1984	1985	1986	1987	1988	Total
1.	BankAmerica					200	200
2.	Bank of New England		315				315
3.	Banks of Mid-America			34		10	44
4.	Bankers Trust	13	185				198
5.	Chesebrough Ponds		54	32			86
6.	Columbia Gas		5				5
7.	Chemical Bank	5					5
8.	CSX	5	120	12			137
9.	First of America Bank	5	125	160			290
10.	First American of Tennessee		36	48			84
11.	First Chicago		145				145
12.	First Union	10	105	60			175
13.	Hospital Corporation of America	25.5	12.5				38
14.	Hartford National/Shawmut Nat'l	5	50	160	40	60	315
15.	Hubbard Real Estate	3					3
16.	Hexcel	1	28	32			61
17.	Indian Head Banks	2	36	48	32		118
18.	J. P. Morgan	30	370				400
19.	Koger Co.			40			40
20.	Koger Properties			40			40
21.	Multibank Financial	5					5
22.	Meridian Bancorp		16	96			112
23.	New Jersey National		90	40			130
24.	Property Trust Co. of America		20				20
25.	Santa Anita Realty	4	64	64			132
26.	Signet Bank/Bank of Virginia			32	24		56
27.	Storage Equities	5	80	40			125
28.	South Jersey Industries		160			80	240
29.	TECO Energy		6				6
30.	United Water Resources		60	24			84
	Total	118.5	2082.5	962	96	350	3609

...Continued...

Continuation of Table 5

Number of Firms in Which Investments Were Made:

In only one calendar year	11
In two different years	11
In three different years	6
In four different years	1
In five different years	1

Number of Firms in Which Investments Were Made:

During 1984	14
During 1985	22
During 1986	17
During 1987	3
During 1988	4

Table 6

Firms with Discount Programs in Which No Investments Were Made

Firms in which initial shares were purchased but no further investments were made:[a]

1. American Security
2. Arizona Bancwest
3. California REIT
4. Connecticut Water Service
5. First Wyoming Bancorp
6. Horizon Bancorp
7. Lincoln Telecommunications
8. North Fork Bancorp
9. Niagara Mohawk
10. Ohio Edison
11. ONEOK
12. Sovran National
13. Southeast Banking
14. Texas Commerce Bancshares

Firms in which no shares were purchased:[b]

1. Bancorp Hawaii
2. Bank of New York
3. Carolina Power and Light
4. Celina Financial
5. Chase Manhattan
6. Citizens Bancorp
7. Energynorth
8. Equimark
9. E'town Water
10. First and Merchants
11. Florida Coast Banks
12. Florida Nat'l Banks of Florida
13. Gould Investors Trust
14. Green Mountain Power
15. Health Care REIT
16. Hibernia
17. Indianapolis Water
18. Interpace
19. Kemper
20. Koger Partnership Limited
21. Manhattan National
22. MFG Oil
23. Middle South Utilities
24. Nabisco Brands
25. Nevada National Bancorp
26. Northeastern Bancorp
27. Northwest Energy
28. Piedmont Natural Gas
29. PNB Mortgage and Realty Trust
30. ProMed Capital
31. Public Service New Mexico
32. Rainier Bancorp
33. Southern Bancorp
34. Suffolk Bancorp
35. Sunwest Financial Service
36. Tracor
37. USF&G
38. Virginia National Bankshares

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[a] In most cases, the reason for not investing is that cash discounts were terminated before we received our shares.

[b] The reasons for not investing include: (1) discount program terminated by the time we found out about it; (2) investment limits too small to compensate us for the value of our time; (3) estimated bid-ask spreads too large (rendering execution costs too high) to justify investment; and (4) discounts of less than 5%.

Table 7

Profitability and Aggregate Cash Invested in Common Shares at a Discount Through Stock Purchase Plans by Year
(in thousands of $)

Year	Investment Amount	Taxable Dividends & Discount Income[a]	Short-Term Capital Gains[b]	Long-Term Capital Gains[b]	Total Capital Gains[b]
1984	$ 118.5	$ 5	$ 0	$ 0	$ 0
1985	2081.5	125	34	0	34
1986	962	64	25	97	122
1987	96	4	2	4	6
1988	350	17	14	39	53
Total	$ 3609	$ 215	$ 75	$ 140	$ 215

Dividends plus capital gains	$ 430
Interest income	7
Interest expense	(14)
Other investment expenses	(2)
Net profit	$ 421

[a] Discount income is taxed as dividend income. The total gross discount income is approximately $190,000, and total dividend income is approximately $25,000.

[b] Capital gains are net of brokerage commissions of $10,000, execution costs of perhaps twice this amount, and losses in 1985 of $27,000 from short sales and the purchase of put options.

Table 8

Actual Return versus Benchmark Return on Investment

Panel A

Actual return:		$ 421,000
Subtract expected net discount income:		
Gross discount per dollar invested	5.26%	
Less brokerage fee (one way)	0.22%	
Less execution cost (one way)	0.50%	
Net discount per dollar invested	4.54%	
Net discount on $3,609,000 invested		163,800
Actual return in excess of net discount income		257,200
Expected return in excess of net discount income due to the increase in bank stock prices (This is the "net benchmark return" from Panel B.)		182,600
Excess of actual over benchmark return beyond the net discount income		$ 74,600

NOTE: On an average investment of approximately $250,000 per year for two years and $90,000 for a third year, this excess return is 12% per year.

....Continued....

Continuation of Table 8

Actual Return versus Benchmark Return on Investment

Panel B

Investment Source	Date	Investment Amount	Period of Investment	Benchmark Rate of Return	Benchmark Total Return
Initial investment	1/1/85	$ 200,000	1/1/85-12/31/86	59%	+$118,000
Withdrawal	7/1/86	150,000	7/1/86-12/31/86	-9%	+ 13,500
Reinvestment of gross discount income	(a)	86,000	1/1/85-12/31/86	59%	+ 50,700
Investment financed by line of credit	(b)	14,000	1/1/85-12/31/86	59%	+ 8,300
New investment	1/1/88	90,000	1/1/88-12/31/88	23%	+ 20,700
Gross benchmark return					$211,200
Hedging losses					- 27,000
Brokerage fees and execution costs @ .25% and .50%, respectively					- 1,600
Net benchmark return					$ 182,600

(a) $3,259,00 invested at a discount of approximately 5/95 yields $171,500 of gross discount income. On average, approximately half or $86,000 is invested throughout the entire period.

(b) $14,000 is the average excess of borrowings over cash held over the period 1/1/85-12/31/86.

Table 9

Amounts Raised through Dividend Reinvestment Plans in 1985

I. Firms offering 5% cash purchase discounts throughout 1985, disclosing amounts raised as a separate line item in their annual report:

Company	Investment Ceiling	Amount Raised (in Millions of dollars)	As a Fraction of Common and Preferred Dividend Payments
Bank of New England	$ 5,000/mo.	$ 41.7	96%
First of America	5,000/qtr.	14.9	100%
First Union	3,000-10,000/qtr.	44.8	109%
Hartford National	5,000/qtr.	16.4	51%
Hexcel	1,000/qtr.	1.4	51%
New Jersey National	5,000/qtr.	6.7	103%
Storage Equities	5,000/qtr.	18.9	178%
United Water Resources	3,000/qtr.	5.2	54%

Median (mean) capital raised as a fraction of dividends: 98% (93%).

II. Firms that appear on the Bank Compustat tape (150 banks) offering dividend reinvestment programs without a discount cash purchase feature, disclosing amounts raised as a separate line item in their annual report.

Company	Amount Raised (In Millions of Dollars)	As a Fraction of Common and Preferred Dividend Payments
Bank of Boston	$ 12.7	22%
Citizen & Southern	4.9	12%
First Jersey National	1.1	8%
First Security	0.5	4%
Irving Bank	4.7	11%
NCNB	8.2	18%
United Virginia BankShares	4.6	21%

Median (mean) capital raised as a fraction of dividends: 12% (14%).

Table 10

Gross Underwriting Spreads for Common Stock Issues
(Excluding Initial Public Offerings)
by Year and Size of Issue for selected years over the Period 1983-1989 (through mid-June of 1989)

	1983		1985		1987		1989	
All Issues*	Avg. Gross	# of Issues	Avg. Gross	# of Issues	Avg. Gross	# of Issues	Avg. Gross	# of Issues
$0-$10 MM	7.61%	212	8.17%	116	7.80%	87	9.66%	14
$10-20 MM	5.77%	186	5.86%	94	5.98%	53	6.25%	23
$20-50 MM	4.53%	200	4.76%	91	5.01%	81	5.10%	17
$50-100 MM	3.70%	91	3.74%	37	4.01%	46	4.36%	11
$100 - MM	3.30%	40	2.67%	42	2.93%	31	2.00%	2

	Avg.	# of	Avg.	# of	Avg.	# of	Avg.	# of
Banks*	Gross	Issues	Gross	Issues	Gross	Issues	Gross	Issues
$0-10 MM	6.94%	5	6.77%	13	6.98%	11	7.47%	1
$10-20 MM	5.32%	3	5.19%	11	5.99%	2	5.50%	1
$20-50 MM	3.59%	3	4.58%	11	-	-	6.00%	1
$50-100 MM	3.35%	2	3.14%	3	3.61%	5	-	-
$100 - MM	3.01%	1	-	-	2.96%	4	-	-

* Excludes issues that do not have gross spread information available.

Data Source: Securities Data Corporation's New Issues Service.

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