Sustainable Payout for Foundations

A Cambridge Associates, Inc. Study
Commissioned by the
Council of Michigan Foundations
April 2000

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Preface

At the request of several of our members, the Council of Michigan Foundations (CMF) retained Cambridge Associates, Inc. in the late fall of 1998 to evaluate the private foundation payout rate required by the federal government, based on the real returns of a group of Michigan private foundations over a 25-year period of time. CMF had previously commissioned a payout study by the University of Michigan School of Business in 1981.

Sustainable Payout for Foundations represents the culmination of a year of careful research and analysis. We want to especially thank Bruce Myers and his colleagues from Cambridge Associates, Inc., and the members of the Technical Advisory Subcommittee, chaired by Robert E. Swaney, Jr., Vice President & Chief Investment Officer of the Charles Stewart Mott Foundation, for their time and many contributions to this effort:

Lesle Berent, Senior Accountant, Charles Stewart Mott Foundation
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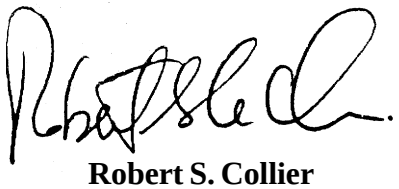
This important research study would not be possible without initial grant support from the Charles Stewart Mott Foundation, The Kresge Foundation, the W. K. Kellogg Foundation, the Herbert H. & Grace A. Dow Foundation, and the Mawby Fund of CMF. For additional copies of this final report, we encourage interested parties to download it from the CMF Web site at *www.cmif.org* because limited copies have been produced.

Because we believe this is the first time real rates of return have been studied over an extended period of time, we are confident that this study is an important addition to the research needed on the issue of the sustainable level of payout for private foundations.

Margaret A. Riecker
Chair
Council of Michigan Foundations



Robert S. Collier
President
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Study Summary

Context

The purpose of this study is to evaluate the sustainable real (inflation-adjusted) level of payout for private foundations in light of the actual experience of a sample of private foundations with diversified portfolios located in the State of Michigan. Previous discussions of private foundation payout have focused on simulated returns using index data. While that analysis is performed here as well, this study examines (perhaps for the first time) the actual returns of a sample of private foundations.

Scope of Study

- At the request of the Council of Michigan Foundations, information was collected from a pool of Michigan foundations having operating histories of 25 years or more.
- Using data reported to the Internal Revenue Service on IRS Form 990PF, contributions, disbursements, and asset values for the period 1973-97 were assembled. This information provided the basis to calculate an implied rate of return for the subject foundations, as well as to quantify the amounts disbursed by the foundations each year.
- Additionally, a large number of the subject foundations provided asset allocation data for a series of key years from 1973-97. From this information, the aggregate weighted asset allocation of the subject pool was quantified.
- The actual performance of Michigan foundations was compared to returns that would have been generated by a passive allocation to the S&P 500 and the Lehman Government/Corporate Bond indexes.

Issues of Sustainability

- Although some charitable foundations are self-liquidating, most donors establish foundations with the idea of pursuing their missions in perpetuity.
- For these foundations, the most important investment policy question is: What level of giving can be maintained without depleting the real (i.e., inflation-adjusted) value of the fund over the long term?
- The answer is: spending must be less than the real rate of return on investment; otherwise, the fund's real value and real payout will decline.
- In order to maintain a sustainable real level of payout over time, foundations must predict a rate of return on their investments as well as the likely variability of returns. This study explores the long-term, "equilibrium"[1] returns, and variability of returns for the relevant asset classes with the assumption that all investors could earn these returns by indexing their portfolios. In practice, foundations with actively managed portfolios or high concentrations in single stock holdings may earn higher or lower returns, but for illustrative purposes this study assumed generic, indexed portfolios.

In this study, the question has been: what is the sustainable level of real payout for private foundations? Only by maintaining the purchasing power of the corpus over time can there be a reasonable confidence of providing a sustainable level of payout.

[1] In other words, these are estimates of very long-term (30+ years) average annual returns, without regard to current market valuations and absent any view as to whether shorter-term prospective returns are likely to be higher or lower than these long-term averages.

Analyses

Historical analysis of portfolios invested 65% in U.S. equities and 35% in U.S. bonds from 1969-1998 was reviewed to determine what happened if a foundation's annual spending was set at various annual rates.

Three approaches were taken to answer the question of how much a fund can spend without depleting its real value over time.

- Historical analysis of portfolios invested 65% in U.S. equities and 35% in U.S. bonds from 1969-1998 was reviewed to determine what happened if a foundation's annual spending was set at various annual rates.
- The actual returns earned and monies paid out by a group of 33 Michigan foundations with diversified investment portfolios (i.e., excluding those heavily invested in a single company) in the period 1973-97[2] were analyzed.
- An analysis was performed of the statistical probability that funds invested 65% in U.S. equities and 35% in U.S. bonds would have maintained their real purchasing power at the end of a 25- or 30-year period in the future using a variety of payout levels.

Conclusions

- Simulations using historical index data show that a 5% spending rate is perhaps slightly too high to maintain purchasing power in perpetuity. Payout rates in excess of 5% almost guarantee the depletion of the real value of a foundation over the long term, resulting in it being unable to maintain its spending, in constant dollar terms, without liquidating.
- Data from the actual experience from 1973-97 of a group of Michigan foundations with diversified portfolios do not support a payout rate higher than 5%.
- The model of estimated future returns indicates that over a 25-year period a fund with a 5% payout rate has a 56% probability of maintaining its real value, whereas this probability drops to 44% for a fund with a 6% payout. Over a 30-year period, a fund with a 5% payout rate has a 58% probability of maintaining its real value, while that probability declines to 43% with a 6% payout.

Actual data from 1973-97 returns for a group of 33 Michigan foundations with diversified portfolios do not support a payout rate higher than 5%.

[2] At the time the study was launched, data from private foundation tax returns were available only through 1997.

Sustainable Payout for Foundations

I. Introduction

The Council of Michigan Foundations has retained Cambridge Associates to analyze and comment on the appropriateness of the current 5% minimum distribution rule for private foundations set forth in the Internal Revenue Code.[1] Specifically, we have been asked to analyze the way in which this payout provision impacts an objective of sustaining the real (inflation-adjusted)[2] level of payout over time. Previous studies exploring the question of private foundation payout (and associated long-term rates of return) have focused on simulated results using past returns on various market indexes. While that analysis is performed here as well, this study utilizes and analyzes the actual experience of a pool of Michigan foundations, and the implications of that experience on the theoretical findings.

Cambridge Associates examined the impact of the current minimum 5% payout rate using three distinct analytical approaches, including examining data gleaned from the 1973-97 tax returns of a group of 33 Michigan foundations with diversified investment portfolios.

To that end, information was collected on a pool of Michigan foundations with operating histories of 25 years or more (the response pool). Contributions, disbursements, and asset values reported to the IRS on Form 990PF were assembled for 48 Michigan foundations covering the 25-year period from 1973-97. The year 1973 was chosen as the start point since the market value of non-charitable assets was first required to be reported to the IRS beginning in 1972 (which in turn became the base year for the purposes of return calculations). Data drawn from the Form 990PF were then used to compute an implied rate of return and calculate the percentage of non-charitable assets that met, each year, the IRS definition of a qualified disbursement.[3]

Sections II through IV of this study are backward looking and reflect a period of extraordinary market events. After the steep stock market declines of 1973-74 and the high inflation of 1980-81, the equity and fixed income markets in the late 1980s and 1990s have earned real rates of return significantly above the 20th century average.

Section II quantifies the effects of a change in the payout rate by showing what would have resulted from modestly higher and lower rates over the past 30 years. Hypothetical portfolios based on passively held indexes are used as the reference point, and payout rates ranging from 4% to 7% are modeled. Sections III and IV report on the actual experience of the Michigan response pool, summarizing asset allocation information in Section III, and weighted average pool returns in Section IV.

Section V reports on the IRS payout requirements, while Section VI looks to the future. Using Monte Carlo simulations we estimate the distribution of long-term rates of return and calculate the probabilities of maintaining purchasing power under different payout rates. Section VII provides the study's conclusions, while supplemental information is contained in the appendixes.

[1] Internal Revenue Code, §4942.

[2] Throughout this study, the Consumer Price Index (CPI) has been used to convert nominal results into real, or inflation-adjusted, results.

[3] See Appendix D for the methodology of imputing investment rates of return from the Form 990PF data.

II. Past Returns Using Passive Allocations: Effects of Changes in the Payout Rate

In this section we first posit a simple portfolio invested 65% in the S&P 500 Index and 35% in the Lehman Brothers Government/Corporate Index.[4] We then show the effects of changes in the spending rate over the past 30 years on this simple, passively-invested portfolio. The purpose here is to isolate changes in spending rate by simplifying asset allocation and eliminating manager selection bias. This 65/35 allocation approximates the average asset allocation for diversified Michigan foundations during the study's 1973-97 time frame.

As a simplifying assumption, spending was assumed to occur at a constant percentage of a four-quarter moving market value.[5] In this model, cash disbursements (at the rate of one quarter of the constant percentage of a four-quarter moving average) are also recognized and accounted for.

Purpose of Hypothetical Portfolio:

To isolate changes in spending rate by simplifying asset allocation and eliminating manager selection bias.

Results of 4%, 5%, 6%, and 7% Payout Rates Over Time

Exhibit 1 (page 12) models the level of real spending and real market values after spending for the 65/35 hypothetical portfolio described above for the 30-year period 1969-98. This 30-year period was selected because it includes both unfavorable and favorable market conditions. In each case, a beginning market value of $100 million was assumed.

- Real fund market value increased under a 4% spending rule, with the corpus of the hypothetical endowment growing from $100 million in 1969 to $160.43 million by the end of 1998. Real spending was also enhanced, and grew from $4 million in 1969 to $5.07 million in 1998.

- Under a 5% spending rule, the purchasing power of the foundation grew from $100 million in 1969 to $119.52 million at the end of 1998. The purchasing power of the distributions declined to $4.78 million at the end of the period (from $5 million at the beginning of the period).

- A 6% spending rule would have eroded the purchasing power of the foundation's endowment, with the real ending market value dropping to $88.58 million at the end of the period. Spending, which is tied to market value through the constant percentage rule mandated by federal law, also dropped from an initial level of $6 million at the beginning of the period to $4.30 million by its end. This represents a decline of more than 25% in terms of the real purchasing power of the foundation's payout.

- Under a 7% spending rule, the declines in real fund market value and levels of spending are more dramatic, with the level of real spending dropping nearly in half over the 30-year period, and fund market value declining over a third in real terms.

[4] For studies performing similar analysis over different time periods see: Trotter and Harrison, *Spending Policies and Investment Planning for Foundations* (1999) and Reilly and Skadden, *Private Foundations: The Payout Requirement and its Effect on Investment and Spending Policies* (1981).

[5] The actual federal rule in place since 1982 requires spending to meet or exceed 5% of the 12-month average market value of non-charitable assets after certain adjustments. The federal rule ignores the timing of distributions during the course of the fiscal year, mandating only that a specified minimum amount be distributed. A fixed percent of a four-quarter average market value (with quarterly distributions to grantees) conforms more closely to actual foundation grantmaking while simplifying the modeling process.

- Real payout and real market value of the portfolios declined steeply in the early years of this period irrespective of the payout rate being modeled. At the 4% and 5% levels, real ending market values only regained their initial value by virtue of the extraordinarily strong financial markets of the 1990s. Only the 4% payout rate ever fully regained the inflation-adjusted level of the initial amount of payout in 1968.

Why the reliance on real values (for both payout and fund market value) instead of a calculation reporting nominal values? Some donors may anticipate, or even encourage, the foundations they endow to spend themselves out of existence over time by disproportionately benefiting current programming at the expense of future programming. Such donor intent, when it exists, is compatible with the current federal rule which mandates a minimum level of payout and permits a foundation to set itself on a course where its future role will be less than its present role. Many donors, however, establish foundations to provide for both current and future needs and maintain comparable levels of programming. That objective can only be achieved by maintaining the real value of the payout.

Exhibit 1 illustrates the way in which the level of prescribed payout acts as a balancing device between current and future spending. A spending rate that preserves purchasing power of both the fund market value and payout stream holds constant the scope of programming that a foundation can fund over time. Put another way, a payout rate that is too low allows a foundation to accumulate assets and provide greater resources in the future at the expense of current programming, while a payout rate that is too high has the opposite result.

Exhibit 1 graphically illustrates that the lowest initial level of payout rises to the highest future real payout, while the highest initial level of payout results in the lowest future real payout. A payout rate that is overly high will initially produce high levels of payout, but will, over time erode the value of both the fund and the absolute level of dollars being paid out from that fund. A lower payout rate will enable the fund to accumulate value and will result in higher absolute levels of real payout in the future. Only the 5% payout rule comes closest to preserving purchasing power and level of payout for the hypothetical portfolios in this period.

Only the 5% payout rule comes closest to preserving purchasing power and level of payout for the hypothetical portfolios in this period.

Effect of High Levels of Payout During a Bear Market

Exhibit 2 (page 13) illustrates the effects of raising the level of payout at the end of a bull market, only to enter a bear market with a high level of payout. Two portfolios were modeled, both of which were invested 65% in U.S. equities and 35% in U.S. bonds. The only difference in the two portfolios was the payout rule being used.

The portfolio labeled "Fund A" used a constant 5% payout (computed on a four-quarter basis), while the second portfolio (labeled "Fund B") employed a variable payout rate. Specifically, Fund B raised payout during the last days of the bull market of the late 1960s and early 1970s, increasing payout from 5% in 1969 to a peak of 7% in 1973. As a result of the bear market, the hypothetical foundation reduced payout in a stair-step fashion beginning in 1976, returning to the 5% level by 1978.

Purpose of Hypothetical Portfolios:

To compare the results of a constant 5% payout portfolio with a variable payout portfolio at the end of a bull market and during a bear market.

A comparison of the results for these two portfolios yields some additional insights. The

constant payout rate suffers less during the bear market of 1973-74, although it still shows a dramatic drop in value. While the Fund B portfolio declines nearly 60% (from an initial market value of $100 million to a 1978 value of $40.65 million), the Fund A portfolio declines 54% to a level of $46.22 million. Once both portfolios are again paying out at a 5% rate, the constant payout portfolio is actually disbursing a higher absolute level of payout because of having suffered less erosion of capital during the worst of the bear market.

While the effects of the bear market illustrate part of the cost of having too high a payout rate during a bear market period, Exhibit 2 also shows another result. As the market recovered in the period following 1978 (and proceeded on to a full-fledged bull market beginning in 1982), the constant 5% payout portfolio was able to grow off of a larger base and more rapidly increase asset size and level of payout. By the end of the 30-year period, the 5% payout portfolio had nearly returned (in real terms) to its 1968 level of payout. The level of payout from the variable, or Fund B, portfolio was still somewhat less in real terms than it had been at the beginning of the period. This analysis illustrates the potential long-term damage that can result from raising payout rates during periods of economic boom and above-average returns on capital assets.

The variable rate portfolio illustrates the potential long-term damage that can result from raising payout rates during periods of economic boom and above average returns on capital assets.

III. Asset Allocation of the Response Pool Over Time

Working from Form 990PF data, asset allocation for the foundations in the response pool was gathered for four particular years chosen to illustrate significant points in time in the capital markets over the last 30 years. The years chosen were 1974, 1981, 1994, and 1997 and the reported asset allocations are as of the end of the foundation's fiscal year for those years. The 1974 data capture the bulk of the effects resulting from the severe equity bear market in 1973-74. The 1981 data reflect the effects of the bear market in bonds of 1979-81, and measure asset allocation prior to the beginning of the bull market in 1982. The 1994 data illustrate the cumulative effects of the bull market and 1997 is the final year of the study of the response pool. Weighted average asset allocations for the response pool are set out in Exhibit 3 (page 14).[6]

Throughout this 25-year period, the response pool of Michigan foundations increased, on average, its allocation to equities. From a low of 53.9% in 1974, the allocation increased to 56.8% in 1981 and to a high of 64.9% in 1997. Surveys of higher education endowments also indicate allocations to equities approaching 65% by 1997.[7] Also noteworthy is the consistent allocation to fixed income (ranging from 21.7% in 1974 to 27.4% in 1997). Allocations to cash were higher than expected, with significant levels of cash in the bear market periods of 1974 (18.7%) and 1981 (19.3%). From this, one might reasonably draw the conclusion that, within the response pool, it was cash rather than high-quality bonds that was viewed as a safe haven in volatile markets.

[6] The data in Exhibit 3 reflect 26 foundations holding diversified portfolios who provided asset allocation data to us (out of a total universe of 33 diversified foundation portfolios). Appendix C shows the same data with foundations holding single stock concentrations added in. The resulting allocations to equity are much higher.

[7] By way of comparison, NACUBO data for the years 1974, 1981, 1994, and 1997 indicate average equity allocations of 65.6%, 47.6%, 54.7%, and 63.8% (respectively) for that pool of tax-exempt portfolios. NACUBO is the National Council of College and University Business Officers. NACUBO has sponsored a comprehensive survey of college and university endowment returns and asset allocations each year since 1974.

IV. Return Experience of Response Pool

In this study, rate of return data have been collected to illustrate the actual experience of foundations in Michigan over the last 25 years.

The returns earned by the foundations in the response pool with diversified portfolios are set out below,[8] and compared to returns from a passively-invested portfolio invested 65% in the S&P 500 and 35% in U.S. fixed income securities.

1973-97 Returns		
	65%/35% Indexed Portfolio	**33 Diversified Michigan Portfolios**
Nominal	11.80%	11.04%
Real	6.00%	5.27%

The year 1973 was chosen as the start point since the market value of non-charitable assets was first required to be reported to the IRS in 1972 (which in turn became the base year for the purposes of return calculations). The last year for which IRS data was available was 1997. Returns were approximated using the data available on the IRS Form 990PF and calculated according to the methodology set forth in Appendix D.

As noted in Section III, the average allocation to equities varied between 54% and 65% over the range of this period. A portfolio passively allocated 65% in U.S. equities and 35% in U.S. bonds and rebalanced annually would have returned 11.8% nominal and 6.0% real returns during 1973-97 (gross of fees). For the period of this study, therefore, the actual experience of diversified Michigan foundations was not significantly different from the returns achieved with similar passive allocations, albeit lower. The lower levels of returns can be partially explained by the effect of investment management fees and commissions (which are not reflected in the index returns).

The returns from the response pool do not differ substantially from similar passive allocations, which provide support for the use of index data for modeling potential results over longer time frames, as was done in Section II of this study.

V. IRS Payout Requirements

The Internal Revenue Code effectively requires the distribution of at least 5% of the value of a private foundation's average annual investment assets. The origin of a mandatory minimum payout for private foundations had its genesis in the Tax Reform Act of 1969. Initially, private foundations were required to pay out the greater of adjusted net income (as defined in the Act) or a fixed percentage which varied over time.[9] The level of required distribution was subsequently adjusted in 1981, and the present rule of a 5% required payout was instituted.

The investment portfolio of a foundation is referred to in the IRS Code as "non-charitable assets," which is to say, assets not used in the management and administration of the foundation's activities.[10] The

[8] Of the 48 responding foundations, 15 had single-stock concentrations that skewed the performance data. Returns set out above represent the 33 foundations with diversified portfolios. Returns for the full universe of 48 foundations and various subsets are set out in Appendix D.
[9] Adjusted net income was defined primarily as interest, dividends, rents, royalties, short-term capital gains, gross profit from business activities, and certain income modifications *less* expenses incurred in the production of investment income. For organizations organized after May 26, 1969, the payout requirement was 6% up through tax year 1971, 5.5% in 1972, 5.25% in 1973, 6% in 1974 and 1975, and 5% in 1976. For organizations organized prior to May 26, 1969, the payout requirement was 4 .125% for 1972, 4.375% for 1973, 5.5% for 1974, 6% in 1975, and 5% in 1976. The adjusted net income requirement was eliminated in 1982, leaving just the 5% minimum investment return requirement.
[10] The following items would be excluded from the value of non-charitable use assets: office equipment and the portion of a building and physical facilities (i.e., artwork on display and classroom equipment) used by the foundation for its charitable purpose. Any interest in a functionally related business and cash equal to 1.5% of the fair market value of non-charitable use assets would also be excluded as well as property leased by the foundation for a program-related purpose. Reg. Sec. 53.4942(a)-2(c)(3)(iii).

value reported to the IRS as non-charitable assets for any given year is the average value of the investment portfolio for the tax year. If at the beginning of a new tax year at least 5% of the value of average annual non-charitable assets for the previous year has not been distributed,[11] the Code provides for a one-year grace period. If the required distribution is not made by the end of the grace period, then the Code imposes a penalty of 15% of the undistributed amount. If such undistributed amounts remain in the foundation's hands at the end of the subsequent tax year, the Code imposes a 100% tax on those remaining amounts. These payout requirements are, however, subject to a carry-forward credit for over-disbursements in previous years. Thus, a private foundation disbursing more than 5% in a previous year may elect to disburse less than 5% in subsequent years as long as the amount of under-disbursement in the subsequent year does not exceed the amount of prior over-disbursement. The penalties are sufficiently severe that private foundations are unlikely to disburse less than the minimum payout, although these foundations may always disburse more.

Actual Levels of Payout

In order to understand the actual payout practices of Michigan foundations, we collected Form 990PF data on qualifying distributions from 1973-97. By dividing the reported figures for qualifying distributions by the reported value of non-charitable assets, a payout percentage can be obtained. For the full 25-year period, the average[12] payout rate for the pool was 5.5%, but this period should be broken down into two sub-periods.

The actual payout rate from 1973-81 averaged 6.68%. As noted in Footnote 9, on page 7, payout requirements for those years mandated distribution of the higher of adjusted net income, including interest and dividends, or a set percentage (the "minimum investment return") ranging from 4.375% to 6%. Due to the higher yields available on marketable securities at that time, adjusted net income for many foundations exceeded 6%. As a result, by the early 1980s, foundation assets had eroded due to the combination of high inflation, low market returns, and the effect of the actual payout from the portfolios each year.[13] Congress responded to this deterioration in real asset value (and the prospect of deteriorating sustainable real payout) by reducing the percentage used in calculating the minimum investment return to 5% of asset values in 1976, and in 1982 by repealing the requirement of distributing adjusted net income if higher than the minimum investment return.

For the subsequent period of 1982-97, when the 5% requirement was in force, the payout rate for the surveyed Michigan foundations was 4.86%. Payout was less than 5% during the years 1983 through 1993 for the following reasons:

- Carry-forward credits for over disbursements in previous years allowed payout to decline below the mandatory 5% level.

- Increasing equity and bond valuations, coupled with the one-year grace period for meeting the payout requirements, resulted in annual disbursements of less than 5%.

From 1993-97, payout levels trended toward the mandatory 5% level as carry-forward credits from previous years were exhausted.

Exhibit 4 (page 15) plots the weighted average payout rate for the pool for each year in the 25-year period 1973-97. A horizontal line is drawn to indicate the period during which the 5% minimum payout rule was in force.

[11] Distributions that count toward the 5% requirement are defined by the Code as "qualifying distributions." Qualifying distributions include any amount paid to accomplish the foundation's charitable purposes (including reasonable and necessary administrative expenses, grants, and program-related investments) and any amount paid to acquire an asset used (or held for use) in carrying out the foundation's charitable purpose. An amount set aside for a specific project may be treated as a qualifying distribution if the foundation has prior approval from the IRS and the cash distribution test is satisfied. Internal Revenue Code, §4942.

[12] This is the arithmetic average, as opposed to a geometric average, and derived by summing the payout rate for the pool for each year and dividing by the number of years (in this case, 25).

[13] For a contemporary analysis see, Reilly and Skadden, *Op. Cit.* (1981).

VI. Future Projections

Our analysis of foundation payout rates up to this point has been focused on the past, either in terms of the performance of passive index data, or with respect to the actual experience of a pool of Michigan foundations. The following material analyzes expected future returns and their effect on payout.

Expectations of Future Return

In Exhibit 5 (page 16), we show the expected real return and level of risk (as represented by the standard deviation of returns) for a hypothetical portfolio invested, once again, 65% in U.S. equities and 35% in U.S. bonds. The inputs used in this modeling exercise are shown at the top of the page and represent our estimates of long-term equilibrium real rates of return.

Three observations should be made about these expected rates of future return:

- Purchasing power can be maintained only if the real rate of spending is set lower than the expected real rate of return. For an expected compound return of 5%, spending should be set 24 basis points lower than the expected compound return. Different levels of expected compound returns would require different levels of discount. (See Appendix A.)

- There is the risk that our assumptions are too generous: after the most rewarding 20 years for investors in U.S. history, these long-term "equilibrium" expectations may be found to have been overly optimistic for periods shorter than the very long-term (i.e., 30+ years).

- Investment management expenses and commissions are cash costs incurred in managing foundation portfolios. These costs reduce expected rates of returns compared to market index returns that do not have these costs.

Thus, if private foundations are to maintain their purchasing power over time, the payout rate must be set at a level that will accommodate the necessary discount to the expected real rate of return, the risk that the level of expected returns or inflation have been optimistic, and the cost effect of investment management expenses and commissions. Given these considerations, how much lower than the expected return should the rate of spending be?

Purpose of Hypothetical Portfolio:

To assess the probability of future returns using an indexed portfolio invested 65% in the S&P 500 Index and 35% in the Lehman Brothers Government/ Corporate Index.

- The discount to the expected return should logically be greater when there is concern over higher levels of inflation in the future (i.e., when specification risk with respect to inflation is greater). Increases in the rate of inflation (especially unexpected increases in the rate of inflation) have historically led to low real returns in the capital markets.

- The discount to the expected level of return should also be greater when there is concern that the expected returns are too generous.

- The discount to the expected level of return should account for investment management expenses and commissions.

Given the historically low levels of inflation and high levels of capital market returns over the past decade, the potential for higher levels of inflation or lower market returns in the future are significant. This would argue for a larger, rather than smaller, discount to expected return with regard to the optimal payout rate.

Estimating the Variability of Returns and Probability of Maintaining Purchasing Power

Exhibit 5 shows that the expected long-term real return from the 65/35 portfolio is 5.46%. This expected real return represents the mean return over long periods of time and significant volatility around this mean is likely. Indeed, the expected annual standard deviation of returns around this mean is 13.85 percentage points. Thus, in two-thirds of all years, we expect the 65/35 portfolio to have a return of between a positive 19.31% (real compound return + 1 standard deviation) and a negative 8.39% (real compound return -1 standard deviation). The presence of positive variability around the expected mean requires institutions to pay out less than the expected average return in order to have a high probability of maintaining purchasing power by the end of a multi-year period. This insight can be illustrated through the use of Monte Carlo simulations.

Monte Carlo simulation models offer a method for seeing in greater detail the variation that is possible around the long-run expected averages noted in the previous section. Monte Carlo simulations utilize the same inputs for return, risk, and correlation that are the basis of mean variance analysis, but randomly calculate the possible returns over several thousand time paths. Analysis of past performance reflects only one time path, whereas Monte Carlo analysis provides the ability to see the potential outcomes from a much larger set of time paths.

Exhibit 6 (page 16) shows the range of real returns for payout rates of 4%, 5%, 6%, and 7% at the end of 25- and 30-year time periods in the future (based on a 65/35 portfolio). (See Appendix B for additional details of the results from this modeling exercise, including results over other time periods.) Under the ranges in expected outcomes for each portfolio and each spending rate, the statistical probability of maintaining purchasing power by the end of the period is calculated. The probability of maintaining purchasing power drops from at or near 70% for a 4% payout rate to at or near 30% for a 7% payout rate, with the 5% payout rate having better than a fifty-fifty chance of maintaining purchasing power by the end of the period.

The model of estimated future returns over 25 years showed that a foundation with a 5% payout rate has only slightly better than a 50-50 chance of sustaining the real value of its payout, about a 4-in-10 chance at a 6% payout rate, and about a 3-in-10 chance at a 7% payout rate.

The historical analysis contained in Section II of this report indicates that a rate of payout in excess of 5% would not have maintained the purchasing power of a foundation over the period 1973-97. Similarly, this forward looking set of projections argues against the ability of foundations to maintain purchasing power in the future with a payout rate greater than 5%, due to the variability that will occur around the long-term expected mean return.

VII. Conclusions

In this study, the question has been: what is the sustainable level of real payout for private foundations? Only by maintaining the purchasing power of the corpus over time can there be a reasonable confidence of providing a sustainable level of payout. Nonetheless, the focus of this study is to ascertain the sustainable level of payout for foundations, and not to articulate the various reasons that support the desirability of enabling sustainability.

Current law requires the distribution of at least 5% of the value of a private foundation's investment assets. Nothing in current law restricts a donor from mandating higher payout rates if that is desired. Absent some restriction specified by the donor, private foundations are currently free to set higher rates if they believe that higher rates are warranted. However, the analysis suggests that payout rates above 5% will result in the erosion of a fund's asset value (and therefore its real payout distributions) over time.

- Past levels of returns (using index data as a proxy) do not support a payout rate higher than 5% (see Section II of this study);
- Past levels of actual returns, drawn from a sample of Michigan foundations, do not support a rate higher than 5% (see Section IV of this study); and
- Simulations of future returns (based on Monte Carlo simulation methods) do not support a payout rate greater than 5% (see Section VI and Appendix B).

Accordingly, the current 5% payout rate provides founding donors with a reasonable expectation that real payout will be maintained in perpetuity. To raise the currently mandated rate would eliminate that expectation by undermining the ability of private foundations to sustain the purchasing power of their payout over time.

A payout rate higher than 5% will erode foundations' ability to sustain the grantmaking capacity of their endowments over the long term.

Exhibit 1

- The period shown here begins towards the end of the great bull market of the 1950s and 1960s. By 1968, the diversified Michigan foundations we surveyed had over 50% of their assets allocated to equities, virtually all invested in U.S. stocks. In the decade of the 1970s that followed, stocks posted anemic nominal returns and had a negative real return.

- Whatever the period, however, the following holds true: the more you spend today, the less you will be able to spend tomorrow because a higher rate of spending eats more rapidly into the market value of the fund.

- Note that by the end of 1998, real spending (i.e., after inflation) for each of these funds remains below the 1969 level, with the sole exception of the fund spending 4%.

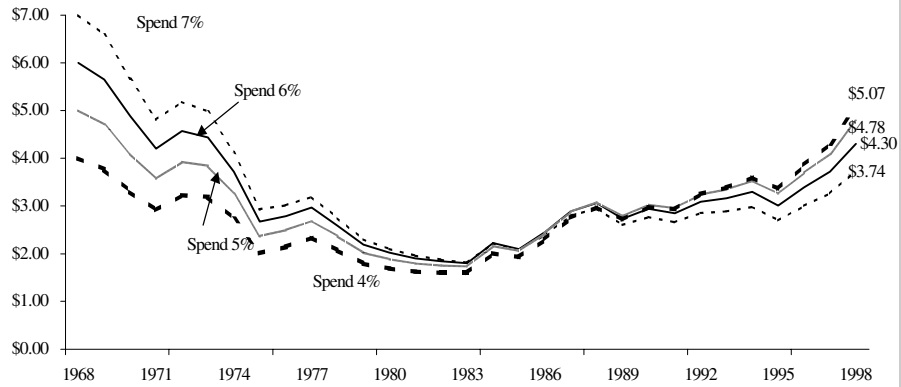
Exhibit 1

REAL SPENDING SIMULATION
65% U.S. / 35% U.S. FIXED INCOME

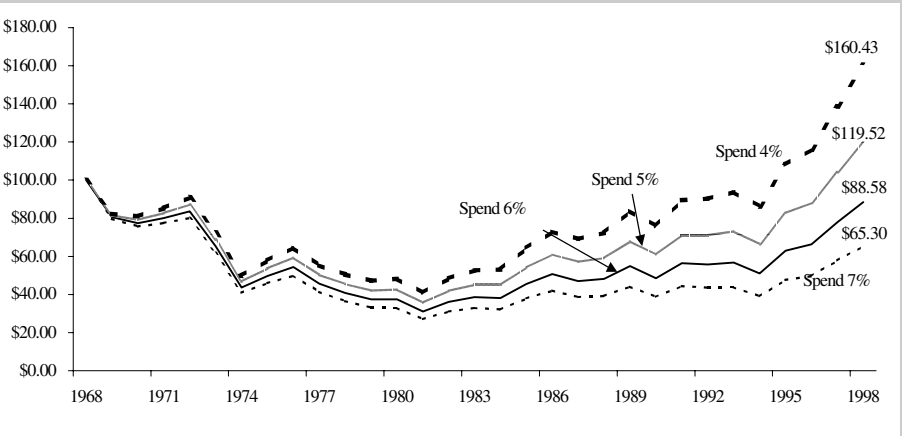
SPEND VARIOUS %'s OF A FOUR-QUARTER AVERAGE BEGINNING MARKET VALUE

(Calendar Years 1969-98)

Real Spending



Real Fund Market Values After Spending



Assumptions:
- Begin with $100 million on January 1, 1969.
- Constant asset allocation of 65% U.S. stocks and 35% U.S. fixed income rebalanced to target policy each year.
- Performance is based on annual market index data.

- In addition, only the funds spending 4% and 5% have succeeded in preserving their real value over this period. Those spending 6% and 7% remain substantially poorer than they were in 1969.

- Finally, these illustrations pre-suppose a disciplined, long-term investor that rebalances to the target asset allocations each year. Any investor that failed to rebalance, or bailed out of stocks after the 1973-74 decline, or employed active managers that underperformed the market indexes, would have had worse results than those shown here.

Exhibit 2

- The two charts in Exhibit 2 are designed to show the effects on a fund that succumbs to pressure to raise payout towards the end of a bull market.

- Because it has paid out more, Fund B is more severely depleted than Fund A in the subsequent decline, and its spending consequently lags that of Fund A when the markets recover.

- Although the real market value of both funds has recovered by 1998 (Fund B having just exceeded $100 million again), both are still spending less in 1998 than they spent in 1969 (in constant dollar terms).

- Cumulative spending from both funds over the period measured was nearly identical (Fund A had cumulative spending of $94.82 per $100 of original value and Fund B had $94.17 per $100). Nonetheless, the higher absolute level of spending achieved by Fund A by the end of the period means that if the two funds follow identical spending rules after 1998, Fund A will have a higher cumulative level of spending.

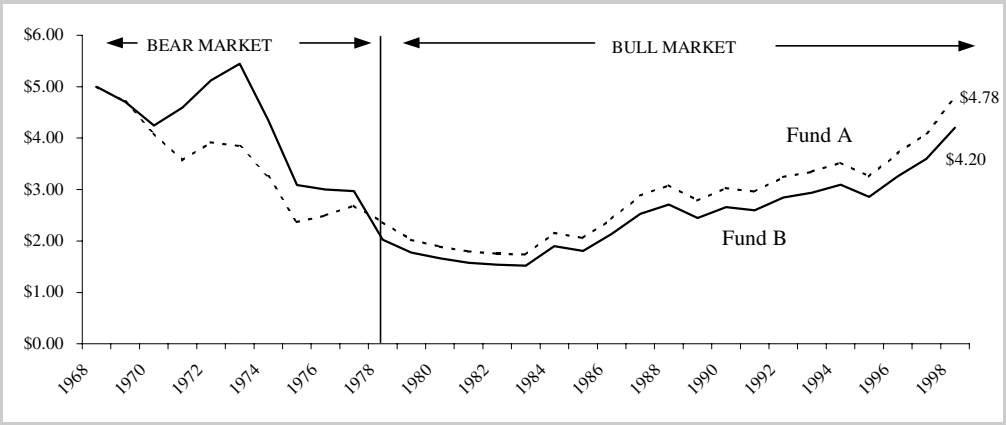
Exhibit 2

REAL SPENDING SIMULATION
65% U.S. STOCK / 35% U.S. FIXED INCOME

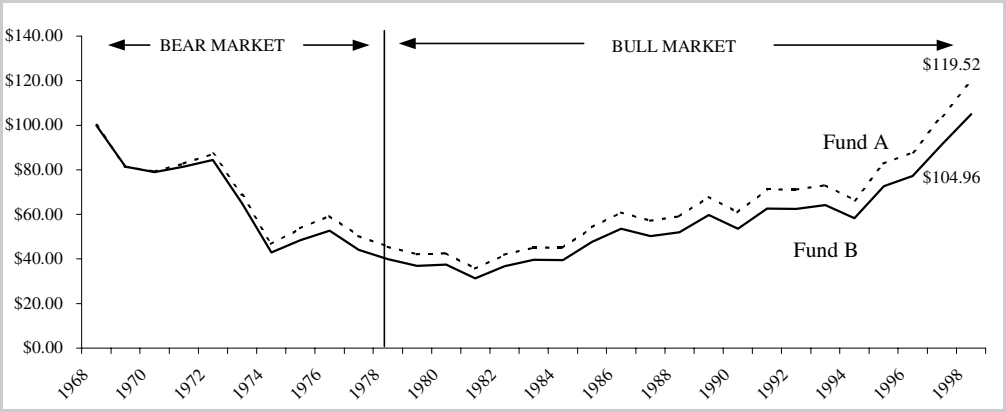
VARIABLE VERSUS CONSTANT SPENDING RATES IN BEAR MARKET

(Calendar Years 1969-98)

Real Spending



Real Fund Market Values After Spending



Assumptions:
- Fund A: Spend 5% of a 4-quarter average beginning market value each year.
- Fund B: Spend 5% in 1969, 5.5% in 1970, 6% in 1971, 6.5% in 1972, 7% from 1973 through 1975, 6.5% in 1976, 6% in 1977, and 5% each year there after. All annual spending is of a 4-quarter average beginning market value.
- Begin with $100 million on January 1, 1969.
- Constant asset allocation of 65% U.S. stocks and 35% U.S. fixed income rebalanced to target policy each year.
- Performance is based on annual market index data.

Exhibit 3

- As a long equity bull market progresses, investors tend to become more optimistic, less attuned to stock market risk, and raise their allocations to equities, either by shifting money from fixed income and other investments or simply by not rebalancing their portfolios. Although capitalization-weighted indexes like the S&P 500 did not in fact peak until 1973, most stocks topped out in 1968 and began a long secular decline that accelerated dramatically in 1973-74.

- In a bear market, of course, investors' risk aversion rises sharply and persists long after stocks have started to recover. Note that the sizeable cash balances of 1974 persisted as late as 1981, while the allocation to equities has grown steadily as the great bull market of the 1990s has advanced.

Exhibit 3

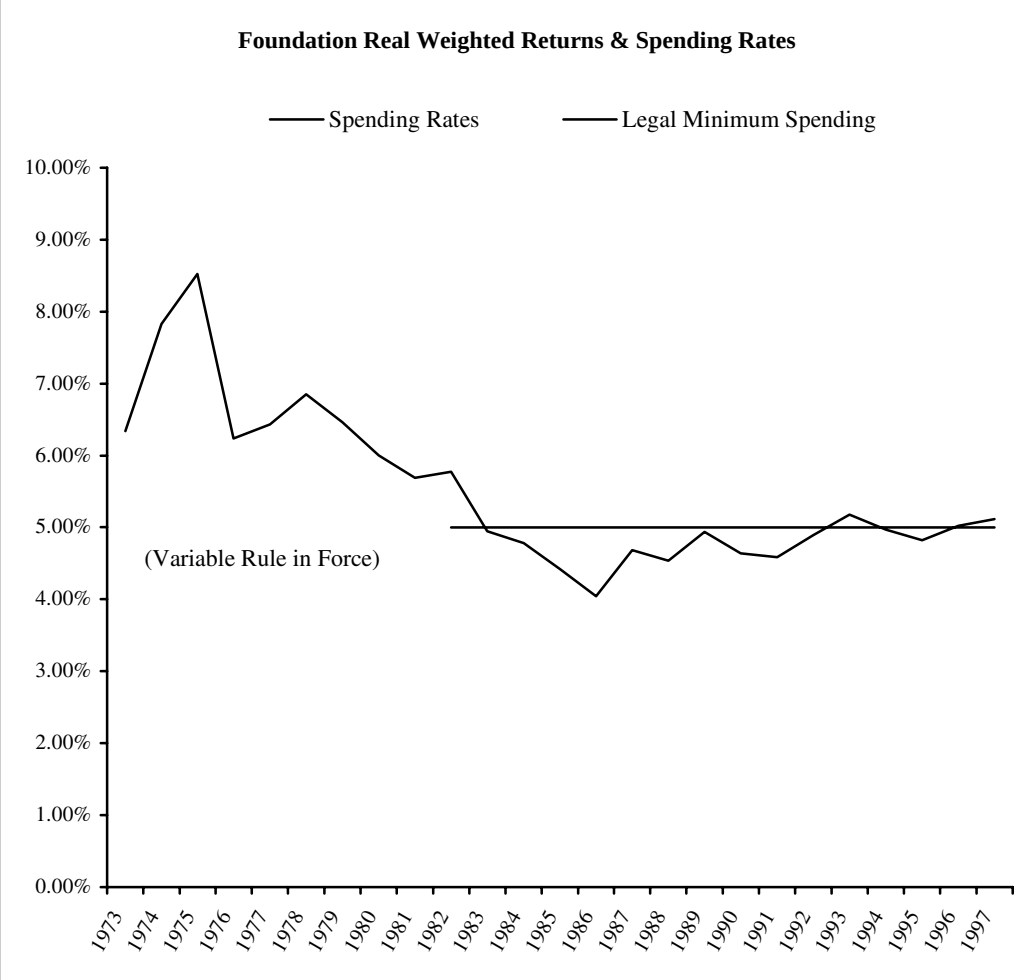
DIVERSIFIED MICHIGAN FOUNDATIONS
WEIGHTED AVERAGE ASSET ALLOCATION

1974	Equity	53.9%
	Real Estate	5.6%
	Fixed Income	21.7%
	Cash	18.7%
	Alternative Assets	0.0%
	Total	**100.0%**
1981	Equity	56.8%
	Real Estate	2.9%
	Fixed Income	20.9%
	Cash	19.3%
	Alternative Assets	0.0%
	Total	**100.0%**
1994	Equity	62.4%
	Real Estate	0.5%
	Fixed Income	28.1%
	Cash	9.1%
	Alternative Assets	0.0%
	Total	**100.0%**
1997	Equity	64.9%
	Real Estate	0.3%
	Fixed Income	27.4%
	Cash	7.3%
	Alternative Assets	0.0%
	Total	**100.0%**

Note: Results calculated from the 26 diversified Michigan foundations that responded to the asset allocation section of the survey.

Exhibit 4

RESPONSE POOL PAYOUT RATES



Source: Response pool comprised of all 48 Michigan foundations who responded to the survey.

Note: Prior to 1982, a higher of adjusted net income or variable percentage rule was in force. From 1982 on, a constant 5% rule was mandated.

Exhibit 5

65% STOCK/35% BOND PORTFOLIO
EXPECTED LEVELS OF REAL RETURN AND RISK

ASSET CLASS ASSUMPTIONS

Asset Class	Real Arithmetic Avg. Return (%)	Risk	Correlation U.S. Equity	U.S.FI	U.S. Cash
U.S. Equity	7.75	18.50	1.0	-	-
U.S. Fixed Income	3.75	9.75	0.4	1.0	-
U.S. Cash	1.00	4.00	0.3	0.7	1.0
Inflation	3.00	-			

EXPECTED REAL RETURN AND RISK

Real Compound Return	5.46%
Real Arithmetic Avg. Return	6.35%
Standard Deviation (Risk)	13.85
Arithmetic Avg. Return/Risk	0.46
Sharpe Ratio	0.39

Source: Cambridge Associates

Exhibit 6

- The objective of a Monte Carlo simulation is to determine the statistical probability of different outcomes for a portfolio with a particular asset allocation, given assumptions as to the future returns, variability of returns, and correlation of returns among the asset classes included.
- In this case, the objective is to determine the probability of preserving the real value (i.e., maintaining the purchasing power) at different spending rates, over a 25- and 30-year period.
- Note that spending rates in excess of 5% result in less than a 50/50 chance that the value of the fund will be maintained over time, adjusted for inflation.

Exhibit 6

MONTE CARLO SIMULATION OUTPUT
65/35 PORTFOLIO

	25-Year Time Horizon	30-Year Time Horizon
Probability of Maintaining Real Purchasing Power		
4% Payout Rate	70.00%	71.30%
5% Payout Rate	56.30%	57.90%
6% Payout Rate	44.20%	43.10%
7% Payout Rate	30.10%	29.00%

A 65/35 Portfolio represents a portfolio with a 65% allocation to the S&P 500 and a 35% allocation to the Lehman Brothers Government Corporate Bond Index.

Appendixes

Appendix A
RELATIONSHIP OF PAYOUT AND EXPECTED RETURN

The equations below describe the relationship between portfolio returns and spending. In order to maintain the real value of a portfolio, the dollar amount of spending must be equal to, or less than, the *real* dollar amount of investment return. This implies that the spending *rate* must be less than the real investment return, provided that the investment return is greater than or equal to zero.

The summary equation can be illustrated by the following example. If beginning market value is $100 and real investment return is 6%, or $6, in order to maintain the *real* market value of the portfolio, spending cannot exceed $6. Therefore, the maximum spending rate that would maintain purchasing power is equal to 5.66% ($6/$106) of ending market value before spending. If the spending percentage were the same as the return, the spending would be 6% of $106 ($6.36), leaving the market value at $99.64. This scenario is a one-year example, but the rule also applies to multi-year scenarios.

The proof that follows characterizes one spending rule (percent of current market value). This rule provides an estimate of trailing-average spending rules. It does not take into account spending caps or floors. It can, however, suggest the nature of the relationship between spending and investment return. Spending and investment returns are assumed to occur at the same points in time relative to one another. In other words, if spending occurs at a certain time, it must occur at that time every period (i.e., always after the second month or between the 3rd and 4th quarters, etc). Note that the same analysis, which is shown here in real terms, applies equally to nominal values.

Variables defined:

A_i – Real market value at beginning of year i
r_i – Real investment return during year i
s – Spending as a percent of beginning market value (1-s is the amount of the portfolio remaining after spending)
c – Real compound (geometric average) return for the portfolio over the entire time horizon, which must be greater than or equal to 0.

$$A_1 = A_0(1+r_0)(1-s)$$

$$A_2 = A_1(1+r_1)(1-s) = A_0(1+r_1)(1+r_0)(1-s)^2$$

$$\ldots$$

$$A_n = A_0\left[\prod_{i=0}^{n-1}(1+r_i)\right](1-s)^n \quad \text{where} \quad \left[\prod_{i=0}^{n-1}(1+r_i)\right] = (1+c)^n$$

$$\therefore \quad A_n = A_0\left[(1+c)(1-s)\right]^n$$

$$\text{real market value is maintained or increased if } \frac{A_n}{A_0} \geq 1$$

$$\text{therefore, if } \frac{A_n}{A_0} \geq 1, \text{ then } \left[(1+c)(1-s)\right]^n \geq 1 \Rightarrow$$

$$\left[(1+c)(1-s)\right] \geq 1 \Rightarrow 1-s \geq \frac{1}{1+c} \Rightarrow \frac{1+c}{1+c} - \frac{1}{1+c} \geq s$$

$$\mathbf{s \leq \frac{c}{1+c}}$$

Appendix B
MONTE CARLO SIMULATION OUTPUT

COUNCIL OF MICHIGAN FOUNDATIONS
MONTE CARLO SIMULATION
65% U.S. EQUITY/35% U.S. FIXED INCOME

SPEND 4% OF A FOUR-QUARTER AVERAGE MARKET VALUE

($ Millions)

Nominal Ending Market Value

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$213.6	$335.7	$495.7	$719.8	$1,088.5	$1,497.4
50th (Median)	124.6	156.9	196.9	241.7	302.3	$382.2
5th (Worst Case)	73.6	75.9	79.8	85.8	96.4	$109.9

Real Ending Market Value

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$184.2	$249.8	$318.2	$398.5	$519.9	$616.9
50th (Median)	107.5	116.8	126.4	133.8	144.4	157.5
5th (Worst Case)	63.5	56.5	51.2	47.5	46.0	45.3
Probability of Maintaining Real Purchasing Power	59.6%	62.1%	66.1%	68.7%	70.0%	71.3%

Nominal Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$7.1	$11.4	$17.3	$25.2	$39.0	$55.1
50th (Median)	4.7	5.8	7.3	9.1	11.3	13.9
5th (Worst Case)	3.1	3.0	3.2	3.4	3.8	4.4
Standard Deviation	1.3	2.7	4.8	7.5	11.8	17.2

Real Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$6.2	$8.6	$11.2	$14.1	$18.8	$23.0
50th (Median)	4.1	4.4	4.7	5.1	5.4	5.8
5th (Worst Case)	2.7	2.3	2.1	1.9	1.8	1.8
Standard Deviation	1.1	2.1	3.1	4.2	5.7	7.2

Real Cumulative Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$24.7	$61.8	$109.3	$169.7	$251.7	$350.8
50th (Median)	19.9	41.4	64.4	90.2	117.7	147.1
5th (Worst Case)	16.3	29.5	41.8	53.8	65.3	75.9

* Begin with a market value of $100 million. Inflation is assumed to be 3% per year.

COUNCIL OF MICHIGAN FOUNDATIONS
MONTE CARLO SIMULATION
65% U.S. EQUITY/35% U.S. FIXED INCOME

SPEND 5% OF A FOUR-QUARTER AVERAGE MARKET VALUE

($ Millions)

Nominal Ending Market Value

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$202.9	$299.4	$438.7	$612.3	$804.5	$1,073.9
50th (Median)	118.5	140.1	167.9	197.5	234.3	$283.4
5th (Worst Case)	71.5	67.8	67.1	69.6	73.7	$77.8

Real Ending Market Value

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$175.0	$222.7	$281.6	$339.0	$384.2	$442.4
50th (Median)	102.3	104.3	107.7	109.3	111.9	116.8
5th (Worst Case)	61.6	50.5	43.1	38.6	35.2	32.0
Probability of Maintaining Real Purchasing Power	53.3%	54.5%	55.4%	55.1%	56.3%	57.9%

Nominal Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$8.5	$13.0	$19.4	$27.6	$36.5	$46.9
50th (Median)	5.6	6.7	8.0	9.3	11.2	13.4
5th (Worst Case)	3.7	3.5	3.4	3.5	3.6	3.8
Standard Deviation	1.5	3.2	5.2	8.2	11.4	15.6

Real Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$7.4	$9.8	$12.6	$15.5	$17.6	$19.5
50th (Median)	4.9	5.0	5.2	5.2	5.4	5.6
5th (Worst Case)	3.3	2.6	2.2	1.9	1.7	1.6
Standard Deviation	1.3	2.4	3.4	4.6	5.5	6.5

Real Cumulative Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$30.2	$72.4	$125.4	$192.9	$273.1	$361.8
50th (Median)	24.4	49.6	75.9	102.3	130.0	158.6
5th (Worst Case)	20.1	35.6	49.2	60.3	72.4	82.4

* Begin with a market value of $100 million. Inflation is assumed to be 3% per year.

COUNCIL OF MICHIGAN FOUNDATIONS
MONTE CARLO SIMULATION
65% U.S. EQUITY/35% U.S. FIXED INCOME

SPEND 6% OF A FOUR-QUARTER AVERAGE MARKET VALUE

($ Millions)

Nominal Ending Market Value

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$195.4	$269.1	$358.3	$465.1	$611.3	$762.7
50th (Median)	112.5	128.1	145.7	164.8	183.8	$210.8
5th (Worst Case)	66.5	60.4	57.5	57.1	56.2	$57.0

Real Ending Market Value

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$168.5	$200.2	$230.0	$257.5	$292.0	$315.3
50th (Median)	97.1	95.3	93.5	91.2	87.8	86.9
5th (Worst Case)	57.4	44.9	36.9	31.6	26.8	23.5
Probability of Maintaining Real Purchasing Power	46.3%	45.6%	45.0%	44.5%	44.2%	43.1%

Nominal Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$10.1	$14.6	$19.6	$26.0	$33.0	$43.9
50th (Median)	6.5	7.5	8.5	9.5	10.7	12.2
5th (Worst Case)	4.2	3.6	3.5	3.5	3.5	3.4
Standard Deviation	1.8	3.5	5.4	7.8	11.1	15.2

Real Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$8.8	$11.0	$12.7	$14.6	$15.9	$18.3
50th (Median)	5.7	5.6	5.5	5.3	5.2	5.1
5th (Worst Case)	3.7	2.7	2.3	2.0	1.7	1.4
Standard Deviation	1.6	2.6	3.5	4.4	5.3	6.3

Real Cumulative Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$36.2	$85.0	$141.7	$203.9	$274.9	$351.6
50th (Median)	28.8	57.2	85.7	113.9	140.6	166.5
5th (Worst Case)	23.8	40.8	54.9	66.7	78.1	88.8

* Begin with a market value of $100 million. Inflation is assumed to be 3% per year.

COUNCIL OF MICHIGAN FOUNDATIONS
MONTE CARLO SIMULATION
65% U.S. EQUITY/35% U.S. FIXED INCOME

SPEND 7% OF A FOUR-QUARTER AVERAGE MARKET VALUE

($ Millions)

Nominal Ending Market Value

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$182.1	$241.9	$320.2	$402.8	$507.7	$652.6
50th (Median)	107.3	115.5	123.8	131.4	143.0	$156.1
5th (Worst Case)	61.4	54.1	48.3	44.9	39.8	$37.2

Real Ending Market Value

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$157.1	$180.0	$205.5	$223.0	$242.5	$268.9
50th (Median)	92.5	85.9	79.5	72.8	68.3	64.3
5th (Worst Case)	52.9	40.3	31.0	24.9	19.0	15.3
Probability of Maintaining Real Purchasing Power	40.6%	37.7%	34.9%	32.4%	30.1%	29.0%

Nominal Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$11.3	$16.0	$20.7	$26.4	$32.0	$43.1
50th (Median)	7.4	8.0	8.4	9.1	9.8	10.5
5th (Worst Case)	4.6	3.9	3.4	3.2	2.9	2.8
Standard Deviation	2.1	3.9	5.8	8.0	10.3	13.9

Real Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$9.8	$12.0	$13.5	$14.8	$15.5	$18.0
50th (Median)	6.4	6.0	5.5	5.1	4.7	4.4
5th (Worst Case)	4.0	3.0	2.2	1.8	1.4	1.1
Standard Deviation	1.8	2.9	3.7	4.5	5.0	5.8

Real Cumulative Spending

Percentile Outcome	*5 Years*	*10 Years*	*15 Years*	*20 Years*	*25 Years*	*30Years*
95th (Best Case)	$41.7	$92.9	$155.0	$218.0	$291.3	$367.7
50th (Median)	33.3	64.4	93.4	120.6	145.8	169.9
5th (Worst Case)	27.1	45.2	59.8	72.1	82.7	90.8

* Begin with a market value of $100 million. Inflation is assumed to be 3% per year.

Appendix C
ASSET ALLOCATION—INCLUDING FOUNDATIONS WITH SINGLE-STOCK CONCENTRATIONS

ASSET ALLOCATION RESULTS

For all responding foundations, including those with single-stock concentrations

weighted average allocations for the pool

1974	Equity	70.5%
	Real Estate	3.4%
	Fixed Income	13.9%
	Cash	12.1%
	Alternative Assets	0.0%
	Total	**100.0%**
1981	Equity	67.7%
	Real Estate	1.9%
	Fixed Income	16.2%
	Cash	14.1%
	Alternative Assets	0.0%
	Total	**100.0%**
1994	Equity	68.4%
	Real Estate	1.0%
	Fixed Income	22.7%
	Cash	7.7%
	Alternative Assets	0.2%
	Total	**100.0%**
1997	Equity	72.8%
	Real Estate	0.8%
	Fixed Income	20.2%
	Cash	6.0%
	Alternative Assets	0.2%
	Total	**100.0%**

Appendix D
COMPOSITION OF THE RESPONSE POOL

1. Institutions Responding

For this study, financial information was gathered on 48 Michigan foundations, including:

The Talbot and Leota Abrams Foundation
The A.G. Bishop Charitable Trust*+
The Frank Andersen Foundation
The Barstow Foundation*
The Besser Foundation
The DeSeranno Educational Foundation*
The Charles DeVlieg Foundation
The Alden and Vada Dow Foundation*
The Herbert H. and Grace A. Dow Foundation*+
The Herbert and Barbara Dow Foundation*
The Earhart Foundation+
The Earl-Beth Foundation*
The Ford Foundation+
The Rollin M. Gerstacker Foundation*
The Greater Lansing Foundation
The Luella Hannan Foundation
The Charles Stewart Harding Foundation
The Herrick Foundation*
The James and Lynelle Holden Foundation
The Hudson-Webber Foundation+
The Michael Jeffers Memorial Foundation
The W. K. Kellogg Foundation*+
The Kresge Foundation+
The Benard L. Maas Foundation
The Edward and Helen Mardigian Foundation
The Oliver Dewey Marcks Foundation
The Mark Heritage Foundation
The McFarland Home Trust
The McGregor Fund+
The Miller Foundation
The Morley Foundation
The Charles Stewart Mott Foundation+
The Louis and Helen Padnos Foundation
The Elsa U. Pardee Foundation*
The Plym Foundation
The Meyer and Anna Prentis Family Foundation*
The Milton Ratner Foundation
The Skillman Foundation
The Charles J. Strosacker Foundation*
The Harry A. and Margaret D. Towsley Foundation*
The Harold and Grace Upjohn Foundation
The John W. and Rose E. Watson Scholarship Foundation+
The Wege Foundation*
The Henry and Consuelo Wenger Foundation+
The Whiting Foundation
The David M. Whitney Fund
The Harvery Randall Wickes Foundation+
The Wickson-Link Memorial Foundation

The following non-Michigan foundations provided performance and asset allocation information for our use by way of comparison.

The Carnegie Corporation of New York
The Duke Endowment*+
The Andrew W. Mellon Foundation+
The Rockefeller Brothers Fund+
The Rockefeller Foundation+
The Alfred P. Sloan Foundation+

* Indicates a foundation that held a single-stock concentration at some point in the period under review.
\+ Indicates a foundation with an unbroken 25-year time series, all others having data missing in at least one year.

2. Alternative Methods of Computing Returns

The foundations in Section I were divided into the following four groups for analysis:

Group A—includes all Michigan institutions that responded to the study.
Group B—includes 33 Michigan foundations with diversified investment portfolios.
Group C—includes 11 foundations with a complete set of returns for the entire 25-year period.
Group D—includes 8 large foundations with diversified investment portfolios, including three from Michigan and five from other states.

Group A represents all 48 Michigan foundations that responded to the study. The foundations varied in asset size and date of origin. Additionally, the submitted responses varied in completeness with regard to providing returns for the 25-year period.

Group B represents the diversified Michigan portfolios. This group was chosen as the most useful group for comparing the actual aggregate weighted average rate of return with market rates of return. The market rates of return were derived from diversified portfolios representing investment exposure across a broad range of investments.

The non-diversified Michigan portfolios, most of which held either Dow Chemical Co. or Kellogg Company common stock, were separated from the diversified portfolios for the following reasons.

1. Single-stock portfolio rates of return are not comparable to broad market or index rates of return.

2. A sample of actual rates of return from non-diversified portfolios that included many different single stocks might be valid, if the different single stocks provided ample diversification at an aggregate level. The Michigan sample included just a couple of stocks and, therefore, is not a valid comparative sample.

3. The long-term rate of return from a single-stock portfolio may be significantly higher than a diversified portfolio because of the substantially higher risk of investing in one stock. Fiduciaries who maintain single-stock portfolios do so with the expectation that the long-term rates of return will be favorable compared to market or diversified rates of return. Portfolios managed this way often accept long periods of relative under performance and long periods of relative over performance. Payout is, of course, affected accordingly during the relatively good and bad periods.

4. Fiduciaries that are not required by trust instrument to maintain single-stock portfolios do not usually have the choice to invest an entire portfolio in a single security.

Group C represents the respondents to the study that provided a complete series of returns for the entire 25-year period. These eleven foundations varied in asset size and validated the returns of the 48 Michigan only responses, as the returns were virtually identical. Thus, the absence of certain years' data does not affect the validity of Group A's results.

Group D includes actual rate of return data from eight large Michigan and non-Michigan foundations with diversified portfolios. All of these foundations have long operating histories and are highly visible, well-known institutions. The returns of the eight large foundations are comparable to the returns of the 33 diversified Michigan foundations, indicating that size did not affect performance results.

3. Weighted Returns for the Alternative Groups

1973-1997 Implied Returns	Group A 48 Michigan only Universe Responses	Group B 33 Michigan only Diversified Responses	Group C 11 Completed Universe Responses	Group D 8 Large Diversified Foundations
Nominal	12.48%	11.04%	12.41%	11.06%
Real	6.64%	5.27%	6.57%	5.29%

The above implied rates of return were obtained by performing the following calculation from the data reported on the IRS Form 990PF:

(Year 0 Value of Non-charitable Assets – Year 1 Value of Non-charitable assets) + Qualified Distributions + Excise Taxes Paid – Contributions / Year 0 Value of Non Charitable assets

Once an implied return was obtained for a given year, the returns were aggregated and weighted according to market capitalization to provide a return series that was then geometrically linked to form an average annual compound return. Real returns were derived using a CPI deflator, thereby adjusting the nominal returns for inflation.

Appendix E
PAYOUT STUDY ADVISORY COMMITTEE

Margaret A. (Ranny) Riecker, Chair
Harry A. & Margaret D. Towsley Foundation

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Council of Michigan Foundations

Richard Connell
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