

The Regents of the  
University of California  
Endowment Spending Policy Review

July 14, 2006

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# C O N T E N T S

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1. Endowment Spending Policy Overview.....	1
2. University of California GEP Spending Policy Analysis.....	13

## **1. ENDOWMENT SPENDING POLICY OVERVIEW**

## ENDOWMENT SPENDING POLICIES

### Policy Objectives

- Provide University with source of revenue that is:
  - Perpetual
  - Growing (at least as fast as inflation)
  - Consistent (low volatility over time)
  
- Preserve the purchasing power (real value) of the endowment, net of annual spending distributions.
  - Per unit spending rate cannot exceed average real investment returns
  - For any given level of investment return, higher spending rates result in slower growth of spending distributions and increased risk of eroding the real value of the fund
  
- Balance the *creative tension* inherent to the endowment.
  - “Creative tension” refers to the endowment’s twin goals of providing income for current beneficiaries, and preserving the purchasing power of the fund to support future beneficiaries

## ENDOWMENT SPENDING POLICIES

### Spending Policies

- The Spending Policy is comprised of two components:
  - a spending rate; and
  - a smoothing formula
  
- The **spending rate** is generally expressed as a percent of the unit value (or average unit value) distributed to the University's programs each year. There are significant implications for choosing a rate that is too high or too low. For example:
  - A low spending rate would allow for distributions to grow faster;
  - A low spending rate also decreases the risk that the real value of distributions and the endowment value will decline;
  - However, by keeping the rate too low the endowment will be favoring the needs of future generations over the current one
  
- The **smoothing formula** is designed to increase the consistency of distributions to programs from one year to the next. However, careful consideration of how this formula is designed is important:
  - Very stable distribution policies tend to increase the risk of eroding the endowment's real value
  - Policies that protect the endowment's value tend to result in more volatile distributions to programs

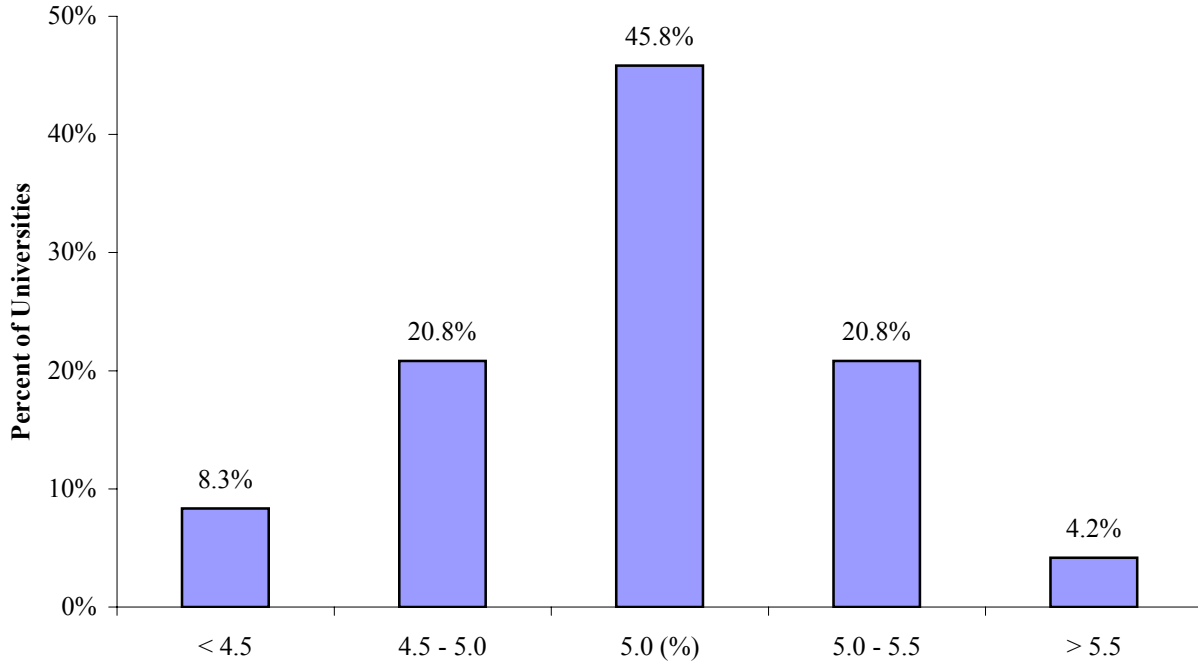
## ENDOWMENT SPENDING POLICIES

### Common Spending Policy Types

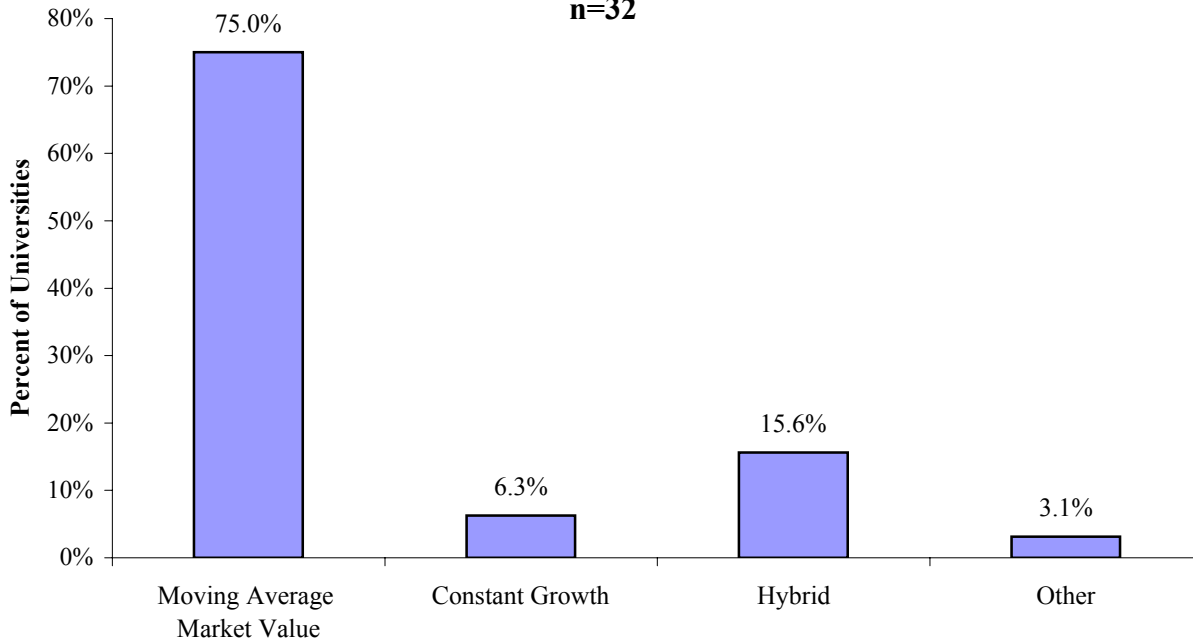
- The **moving average** spending policy rule is structured to spend a specific percentage of the endowment's average market value as calculated over a specific time-frame. Based on our recent survey of university endowments with assets in excess of \$1 billion, **75%** of respondents cited this as their type of spending policy rule.
  - *Example: Spend 4.75% of average unit market value over the past twenty quarters.*
  
- The **constant growth** spending policy rule is structured to increase per unit distributions by inflation each year. Oftentimes, a cap and floor are used to “collar” this increase such that the distributions fall within a specified range based on an average of a specific number of quarters. Our latest survey indicates that this spending policy rule is rather uncommon, with only **6%** of the respondents indicating that they use this rule.
  - *Example: Increase per unit distributions by inflation rate each year, as long as the distributions don't exceed 5.75% of unit value or fall below 3.75% of unit value averaged over trailing 12 quarters.*
  
- Under the **hybrid** spending policy rule, the spending distribution per unit increases at the rate of inflation but also has an additional adjustment to bring it closer to a target payout rate over time. **16%** of respondents use this rule, but others are considering adopting it.
  - *Example: Per unit distributions are the sum of:*
    1. *70% of prior year distributions increased by inflation; and*
    2. *30% of 4.75% of unit value at the beginning of the year.*

## LARGE UNIVERSITIES SPENDING POLICIES

**Long-Term Policy Target Spending Rates\***  
n=24



**Spending Policy Rule Types**  
n=32



\* In addition to this group of 24, four universities use discretionary target ranges determined each year. Two institutions with hybrid policies stated that targets were not applicable to their policy types, and two did not respond.

Source: Cambridge Associates survey of 32 university endowments with assets of \$1 billion or more.

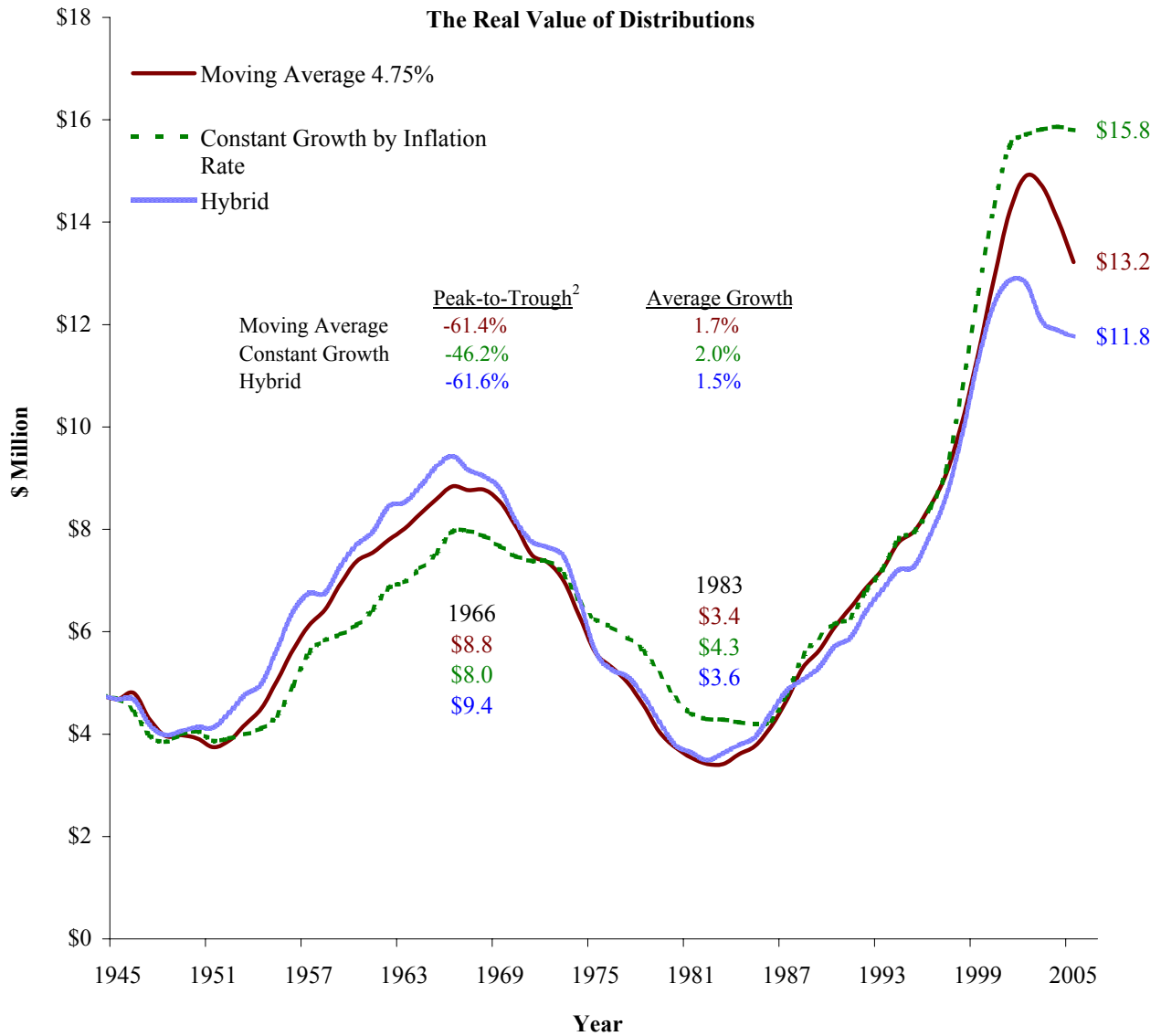
## LARGE UNIVERSITIES SPENDING POLICIES

### Three-Year Trends

- Eighteen universities reported no changes to policy in the last three years, though four of those institutions are contemplating changes.
  
- Recent changes: Fourteen universities made changes to their spending policies, and two of those schools are considering additional changes.
  - Rule Type: Three universities changed from a Moving Average rule to another rule type. One now uses a Constant Growth rule and two now use a Hybrid rule.
  - Moving Average Payout Rates: Four universities adjusted their Moving Average payout rates. Two increased the rate (from 5% to 5.25% and from 5.25% to 5.75%), one decreased the payout rate (from 4.5% to 4.0%), and one adopted a discretionary range of 4.5% to 5.5%.
  - Use of Ranges: Seven of the 24 institutions with Moving Average policies use discretionary ranges in their spending calculations.
  - Time Periods: Three universities changed the time period used for their Moving Average calculation rule. Two increased the number of periods used in the calculation (from three years to five years and from 12 quarters to 28 quarters), and one increased the number of time periods used in the calculation, but decreased the overall period length (from two years to 12 months).
  - Hybrid Rules: Two universities that utilize Hybrid rules adjusted the mix between Constant Growth and fixed payout. One increased the weight of previous year's spending from 60% to 70%, while the other increased from 70% to 80%. One also increased the percentage of the current market value used in the remainder of the calculation from 5% to 5.25%.
  - One university capped the growth of distributions to a maximum 10% increase over the prior year's amount.

- Six universities are considering changes to their spending policy in the next three years.
  - Four universities are considering changing their spending rules, with two leaning toward Hybrid policies. No information was provided by the other two universities.
  - Three universities are considering adjustments to their current rules. One is considering putting a narrower range on the spending collar, another is evaluating their cap, and the third did not specify what changes they are planning to make.

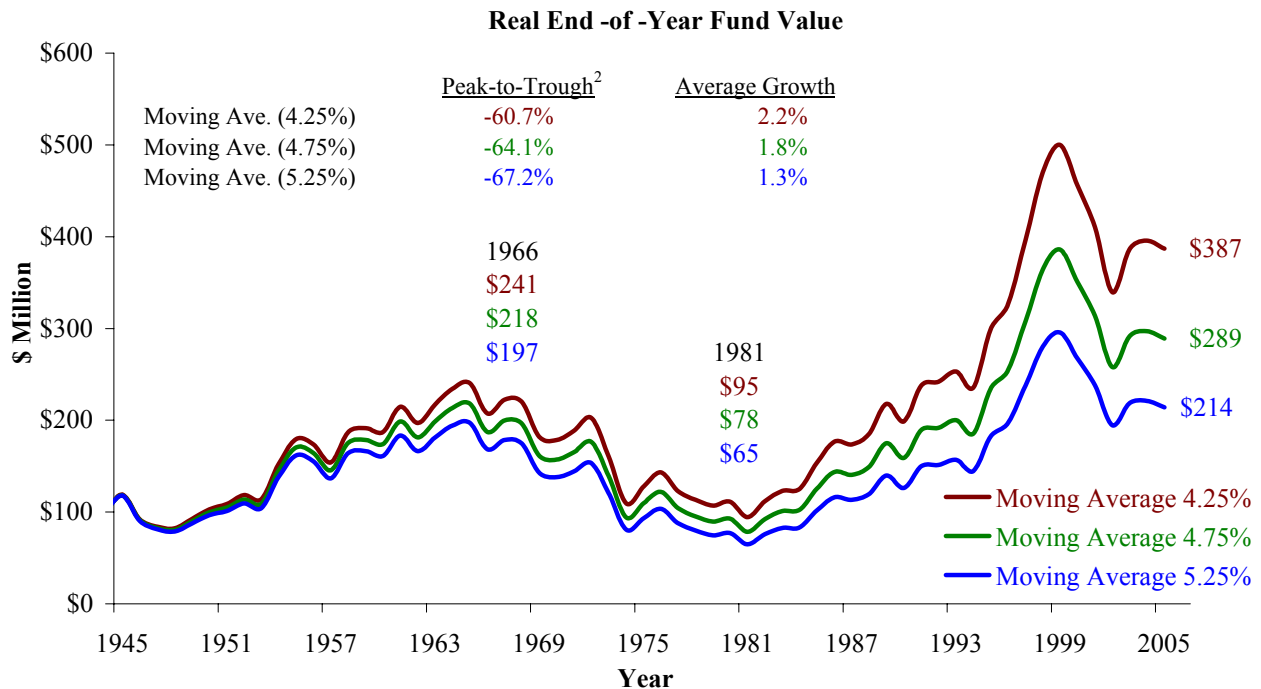
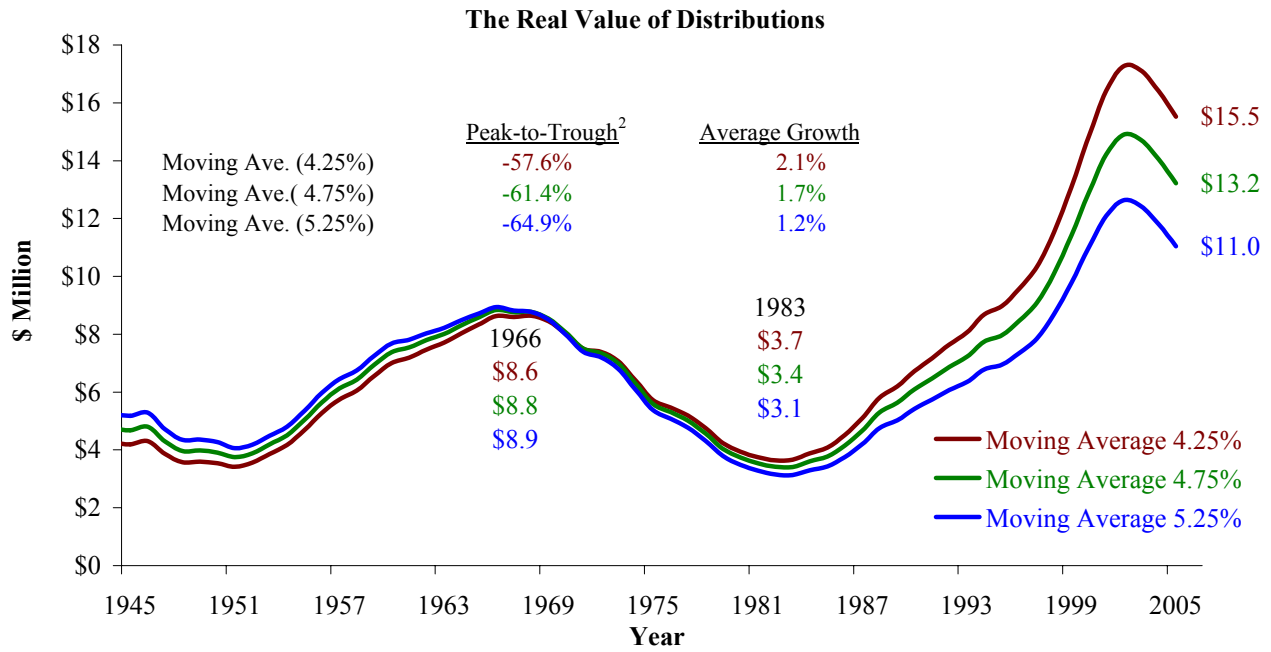
SPENDING POLICY TYPES



<sup>1</sup>Assumes a \$100 mm starting fund value with a 70% U.S. stock and 30% U.S. bond asset allocation, rebalanced quarterly. See assumptions exhibit for more detailed descriptions of each case.

<sup>2</sup>Peak-to-trough periods may differ slightly for each case.

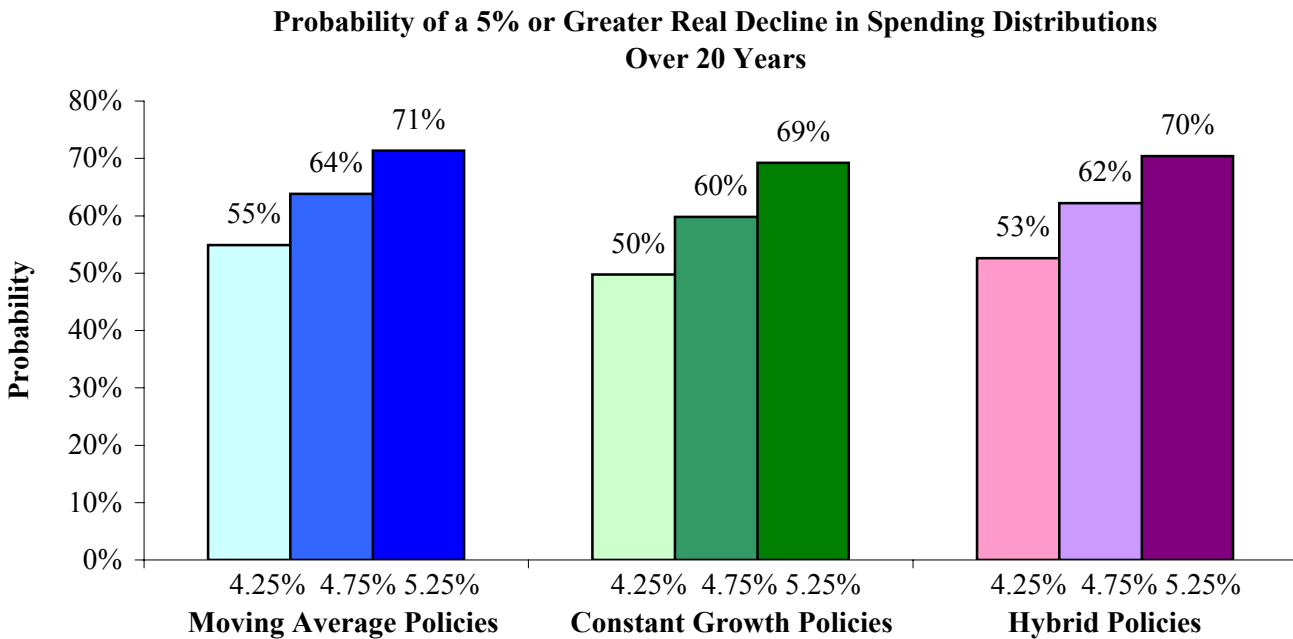
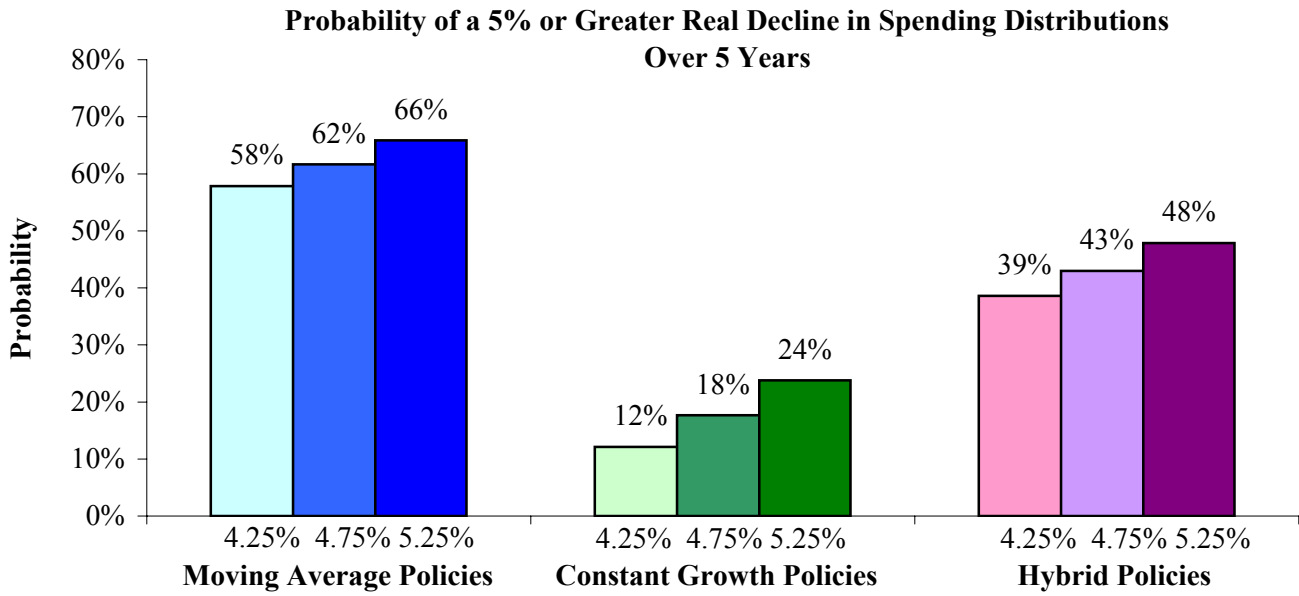
Different Payout Rates



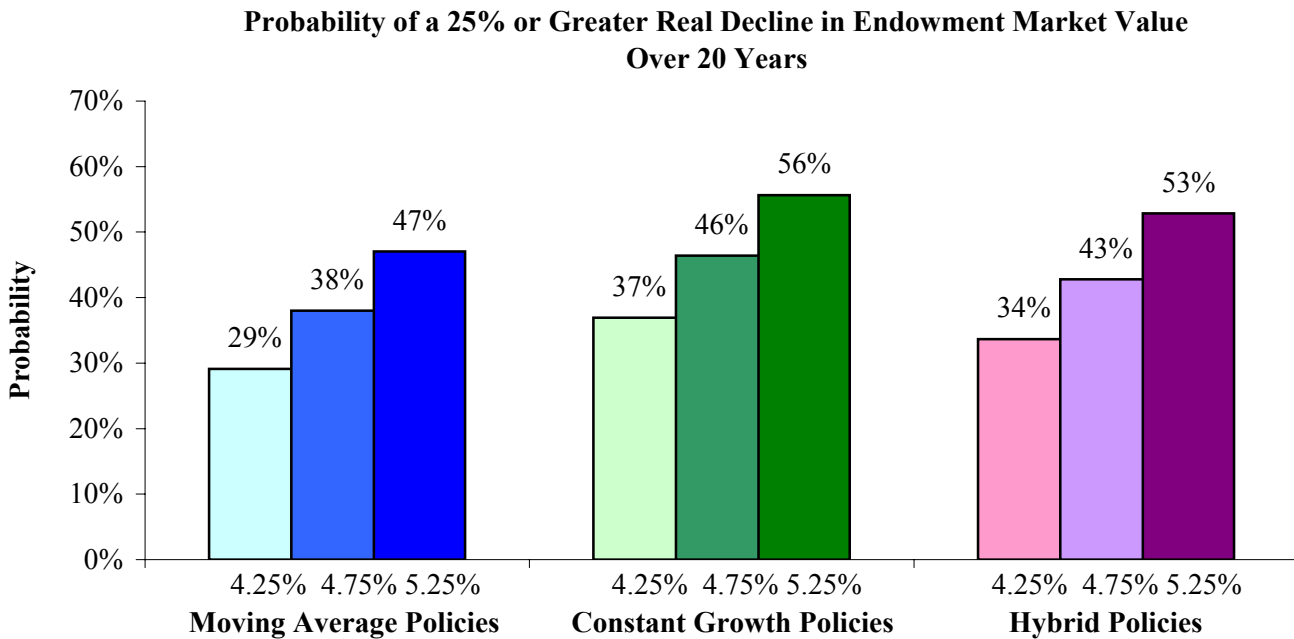
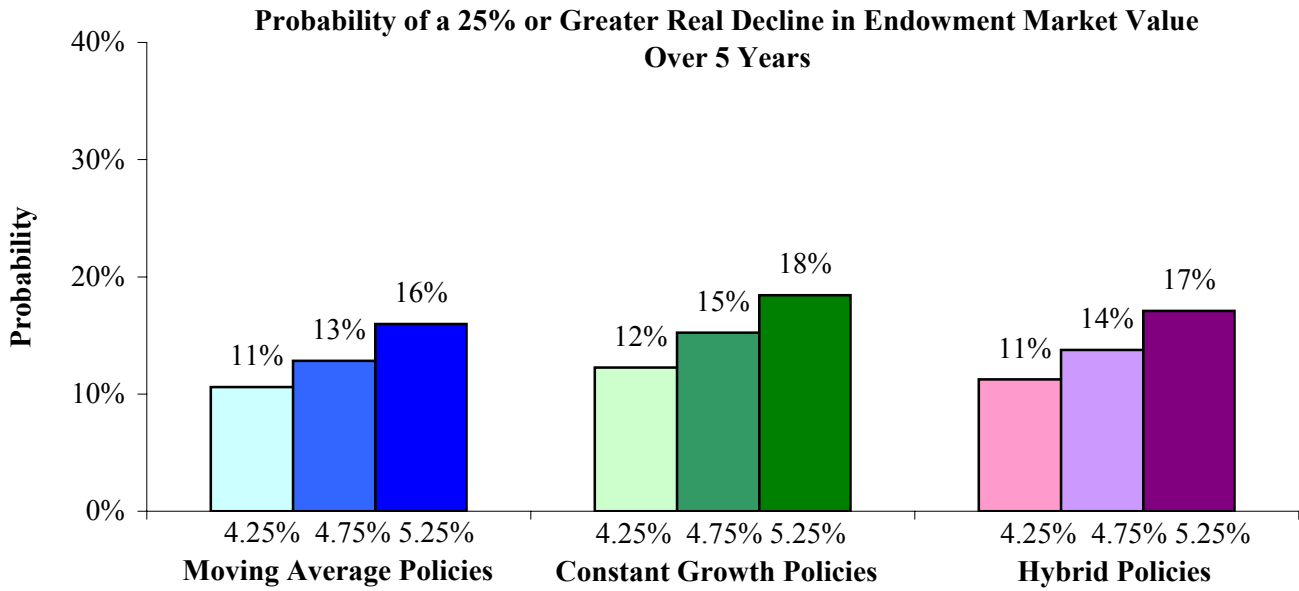
<sup>1</sup>Assumes a \$100 mm starting fund value with a 70% U.S. stock and 30% U.S. bond asset allocation, rebalanced quarterly. See assumptions exhibit for more detailed descriptions of each case.

<sup>2</sup>Peak-to-trough periods may differ slightly for each case.

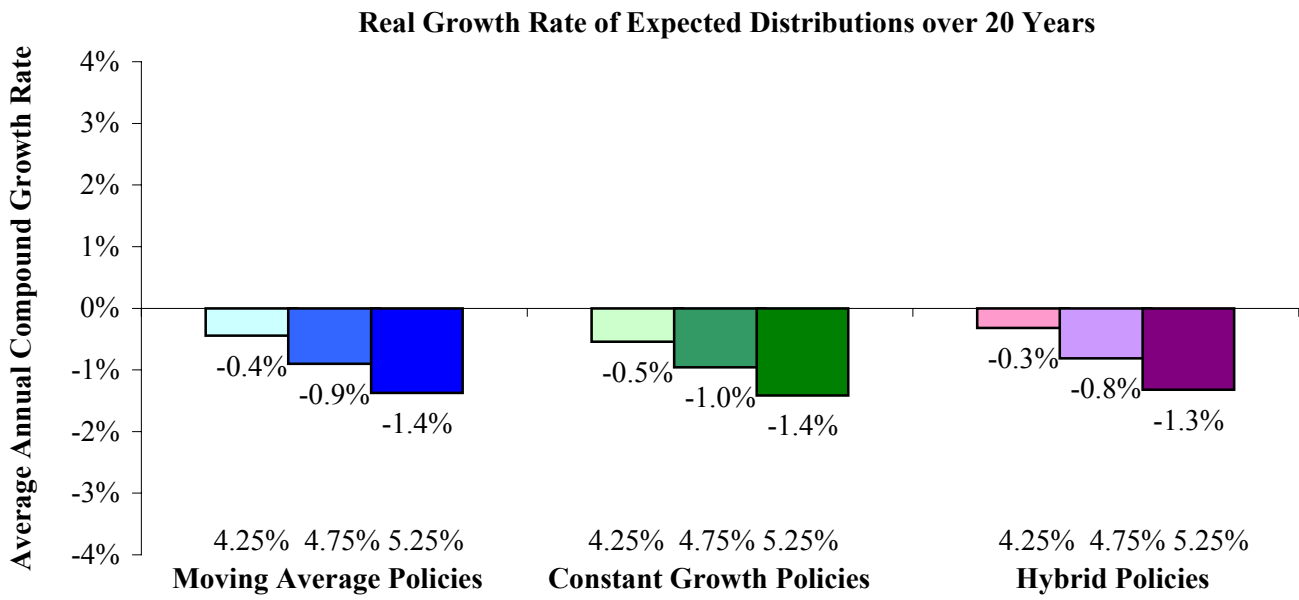
Spending Policy Types and Spending Rate



Spending Policy Types and Spending Rate



Spending Policy Types and Spending Rate

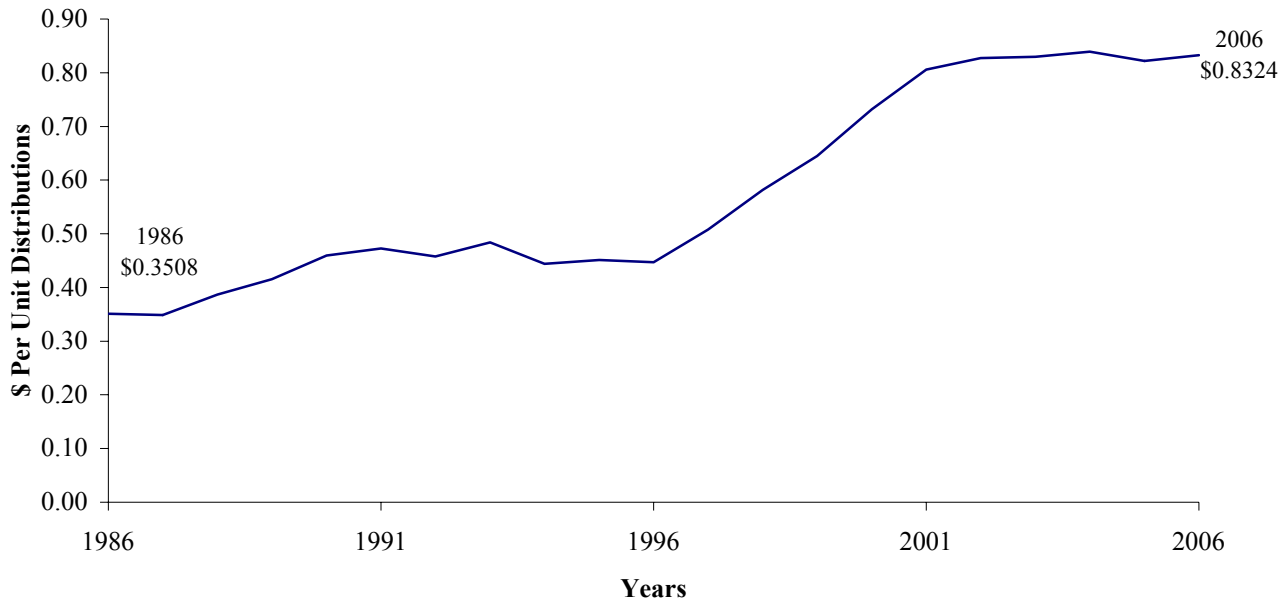


## **2. UNIVERSITY OF CALIFORNIA GEP SPENDING POLICY**

UNIVERSITY OF CALIFORNIA

Historical GEP Distributions  
Constant Dollars (2006)<sup>1</sup>

Per Unit Distribution<sup>2</sup>



	<u>Figure</u>	<u>Period</u>
Twenty-Year Real Growth Rate	4.4%	1987-2006
Ten-Year Real Growth Rate	6.4%	1997-2006
Maximum One-Year Real Decline	-7.7%	1994
Maximum One-Year Real Increase	15.3%	1998
Number of Real Declines since 1987	7	1987, 1992, 1994, 1996, 2003, 2004, 2005

<sup>1</sup>Distributions are inflated by CPI, which varied from year to year but averaged 3.0% during this period.

<sup>2</sup>For Total Return Funds in the General Endowment Pool. 2006 distribution is estimated.

**PROJECTED GEP DISTRIBUTIONS FOR FISCAL YEAR 2007**

**Assuming 6.81% Expected Fund Return for Fiscal Year 2007**

<u>Spending Rates</u>	<u>Spending Rules</u>		
	<b>Moving Average</b>	<b>Constant Growth</b>	<b>Hybrid</b>
	<i>% Change From Fiscal Year 2006<sup>1</sup></i>		
<b>4.25%</b>	-5.1%	3.0%	4.0%
<b>4.75%</b>	6.1%	3.0%	7.7%
<b>5.25%</b>	17.3%	3.6%	11.5%

<sup>1</sup>As of 7/12/06, final distribution amounts for 2006 were unavailable so an estimate is used for the purposes of this exhibit.

## SUMMARY OBSERVATIONS

- The Moving Average policy is still the most common spending rule type used by large endowments and the most common spending rate is 5.0%.
- Gift contributions to the endowment offset spending distributions and augment investment returns. The current contributions to GEP are relatively nominal, and likely fall short of the contribution rates of many other universities in the survey group.
- Although no one can forecast future real investment returns, it is clear that higher spending rates result in slower growth of distributions and greater risk of eroding the endowment's purchasing power. On the other hand, setting the spending rate too low disadvantages current programs relative to future programs.
- Based on current investment return assumptions, spending rates of over 4.25% are likely to result in a distribution growth rate that does not keep pace with inflation (see pages 7-8).
- Each of the three policy types has relative advantages and disadvantages as illustrated by the Monte Carlo simulations.
- The Moving Average rule tends to result in somewhat more volatile distributions with a greater risk of real declines in distributions over rolling five years. But it does a better job of protecting the purchasing power of the endowment over rolling twenty-year periods (see pages 9-10).
- The Constant Growth rule provides the most consistent stream of distributions with the lowest probability of real declines over rolling five-year periods. But it has a slightly higher risk of eroding the endowment's market value over longer time horizons (see pages 9-10).
- The Hybrid rule falls in between the other two rules, with slightly better short-term stability of distributions than the Moving Average rule and slightly less risk of long term purchasing power loss than the Constant Growth rule (see pages 9-10).

## ASSUMPTIONS

In the simulations presented in this paper, the following assumptions were used:

- Asset class returns, volatilities, correlations and allocation targets were provided by GEP.
- The historical model portfolios are composed of 70% U.S. Stocks (as represented by the S&P 500) and 30% U.S. Bonds (as represented by Lehman Brothers Aggregate Bond Index) and are rebalanced quarterly.
- The Monte Carlo simulations are run over 20,000 iterations assuming a log-normal distribution of returns.
- Inflation is assumed to be 3.0%.
- Spending Policy Rules are defined as:
  - **Moving Average:** 4.75% of the average unit market value over the trailing twenty quarters
  - **Constant Growth:** Increase per unit distribution by inflation each year, as long as distributions don't exceed 5.75% or fall below 3.75% of unit value averaged over trailing twelve quarters
  - **Hybrid:** Per unit distributions are the sum of:
    - > 70% \* (prior year's spending adjusted for inflation); and
    - > 30% \* (4.75% of beginning market value)
    - > Note 1: No caps or floors were used in this formula (this is consistent with the peer group data from the survey)
    - > Note 2: This rule is more accurately described as an exponentially-weighted Moving Average rule
  - For sensitivity analysis, each of these rules were run at 4.75% (base case), as well as at 4.25% and 5.25% per unit spending rates.