# SPENDING POLICY METHODOLOGIES

## FORMULAS

**MOVING AVERAGE** *(spend a fixed percentage of the average market value over a set time period)*

Spending $Rate_t$ x [ (Ending market $value_{t-1}$ + Ending market $value_{t-2}$ + Ending market $value_{t-3}$...) / Time Period ] = $Spending_t$

**CONSTANT GROWTH** *(increase spending each year by a constant growth rate or inflation)*

$Spending_{t-1}$ x (1 + Consumer Price Index $_{\text{YoY \% change}}$) = $Spending_t$

**WITH BANDS** *(spending is contained within a range of +/- a percentage of previous year's market value)*

If Spending is < Floor, Spending = Floor; If Spending is > Cap, Spending = Cap

**GEOMETRIC** *(weight given to inflation adjusted spending and target spending of market value)*

Smoothing Rate x [$Spending_{t-1}$ x (1 + Consumer Price Index $_{\text{YoY \% change}}$) ] + (1- Smoothing Rate) x (Target Spending Rate x Ending Market $Value_{t-1}$) = $Spending_t$

**HYBRID** *(custom combination of spending rules to meet the specific needs of an institution)*

t: time; YoY: Year-over-Year

## REFERENCES

(A) 2015 $Spending_{t-1}$ (\$): ____________________

(B) Target Spending Rate: ____________________%

(C) 2016 Budgeted Spending: ____________________

(D) Smoothing Rate: 0.7 (or 70%) is common
Weight given to inflation adjusted spending

(E) Portfolio Ending Market Value:

| 2015 (t-1) | 2014 (t-2) | 2013 (t-3) | 2012 (t-4) |
|---|---|---|---|
| | | | |
| **2011 (t-5)** | **2010 (t-6)** | **2009 (t-7)** | |
| | | | |

(F) Spending not to drop below (floor): ________ % x ____________________ = ____________________
Ending Market $Value_{t-1}$ Line E — Spending Floor (\$)

(G) Spending not to exceed (cap): ________ % x ____________________ = ____________________
Ending Market $Value_{t-1}$ Line E — Spending Cap (\$)

(H) Core Consumer Price Index $(CPI)_{\text{YoY \% change}}$ 0.021 (or 2.1%)[1]

[1] Bureau of Labor Statistics; As of December 31, 2015

## MOVING AVERAGE

**(M1)** Calculate the average portfolio value over specified time period:

____________ / ____________ = ____________

Sum of line E (over 3, 5, or 7 years) | Time Period (3, 5, or 7 years) | Average Portfolio Value

**(M2)** Calculate spending: ____________ x ____________ = ____________

Average Portfolio Value Line M1 | Target Spending Rate Line B | $\text{Spending}_t$

## CONSTANT GROWTH

**(C1)** Calculate spending: ____________ x (1 + ____________ ) = ____________

$\text{Spending}_{t-1}$ Line A | $\text{CPI}_{\text{YoY \% change}}$ Line H | $\text{Spending}_t$

## WITH BANDS

**(B1)** Verify spending falls within bands: ____________ < ____________ < ____________

Floor ($) Line F | $\text{Spending}_t$ Line C1 | Cap ($) Line G

**(B2)** Adjust spending: if $\text{Spending}_t$ < Floor ($), Spending = Floor ($)
if $\text{Spending}_t$ > Cap ($), Spending = Cap ($)

____________

Adjusted $\text{Spending}_t$ (Line C1 if Unadjusted)

## GEOMETRIC

**(G1)** Adjust for inflation: ____________ x [ ____________ (1 + ____________ ) ] = ____________

Smoothing Rate Line D | $\text{Spending}_{t-1}$ Line A | $\text{CPI}_{\text{YoY \% change}}$ Line H | Inflation-Adjusted Spending

**(G2)** Calculate target -weighted spending: (1 - ____________ ) x ( ____________ x ____________ ) = ____________

Smoothing Rate Line D | Spending Rate Line B | Ending Market $\text{Value}_{t-1}$ Line E | Target-Weighted Spending

**(G3)** Calculate spending: ____________ + ____________ = ____________

Line G1 | Line G2 | $\text{Spending}_t$

## PROJECTED $\text{SPENDING}_t$:

| Moving Average | Constant Growth | With Bands | Geometric | 2016 Budgeted Spending |
|---|---|---|---|---|
| | | | | |
| Line M2 | Line C1 | Line B2 | Line G3 | Reference Line C |