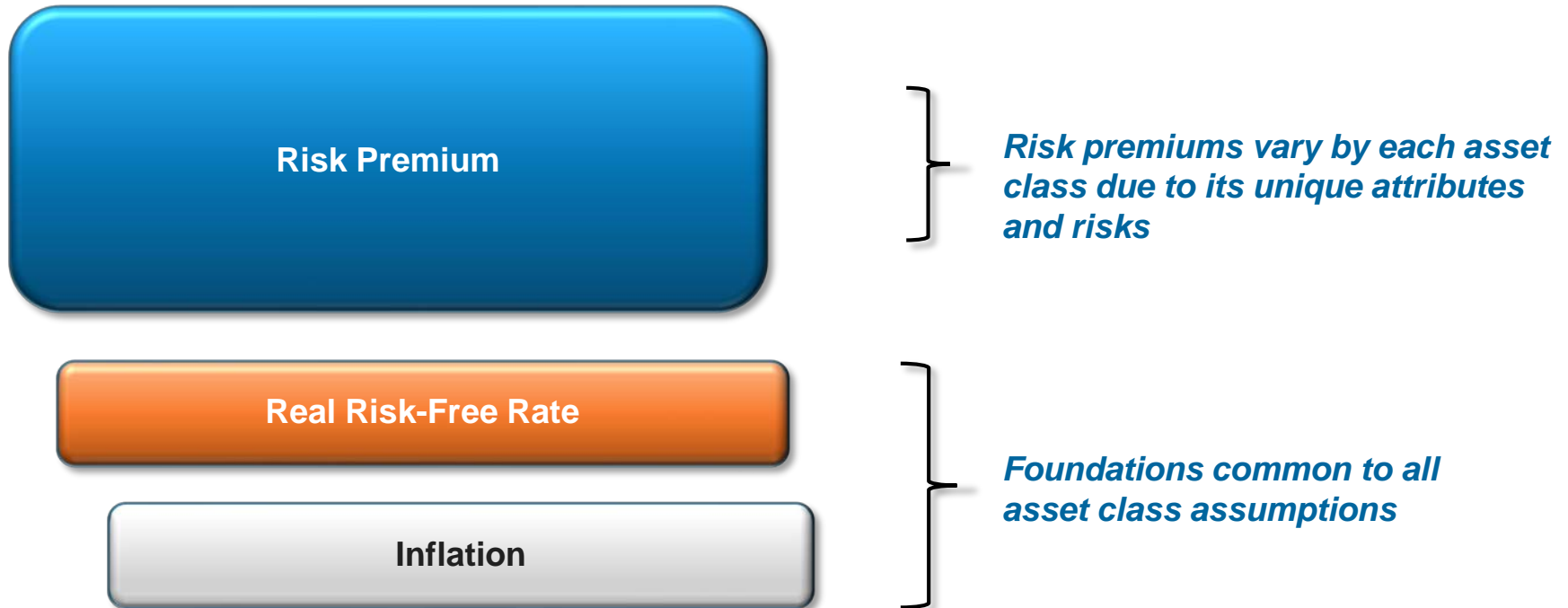


# Mitigating Drawdowns

**June 17, 2019**

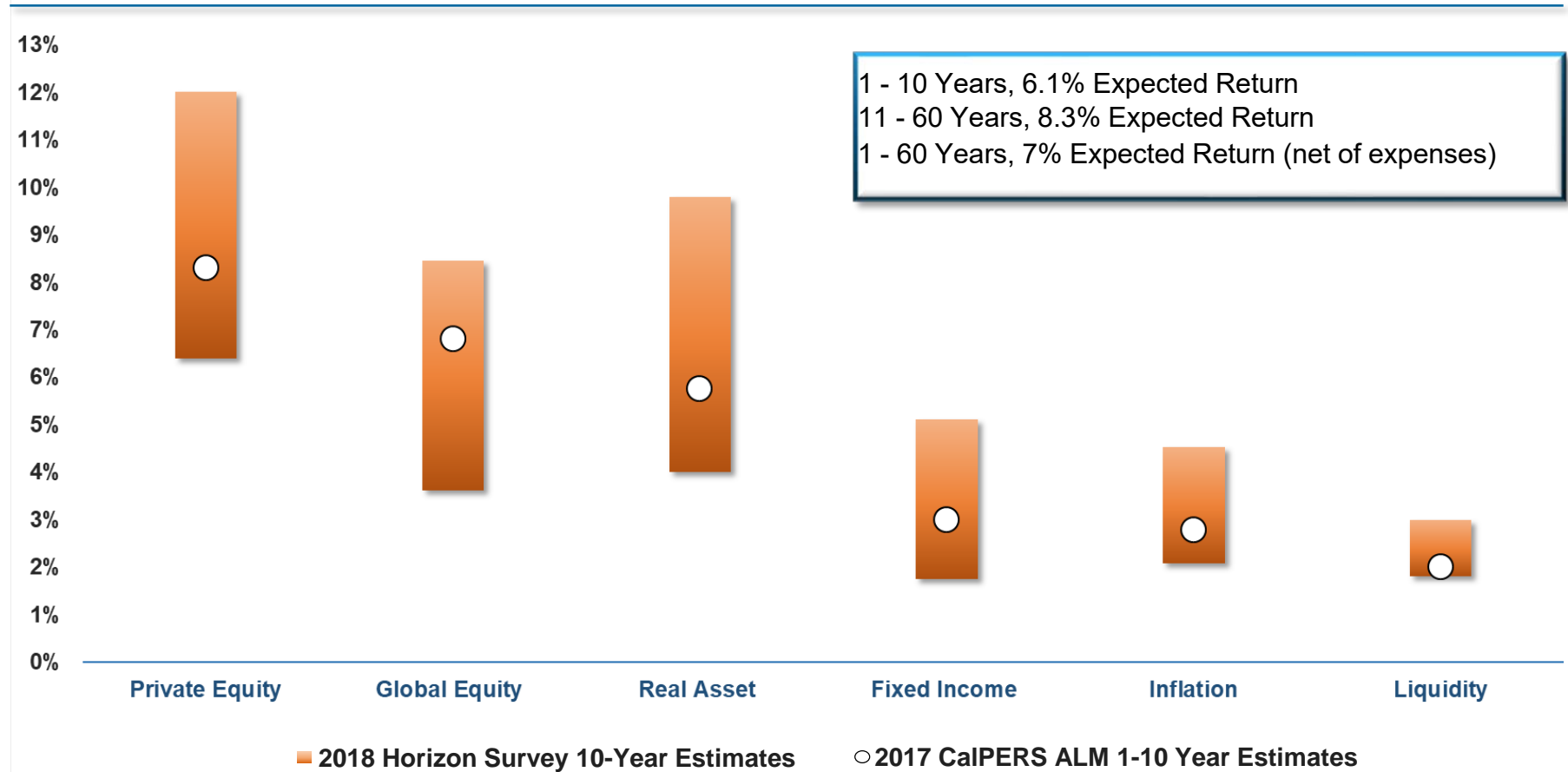
Yu (Ben) Meng, Ph.D.  
Chief Investment Officer, CalPERS

# Building Blocks for Determining Capital Market Assumptions (CMAs)

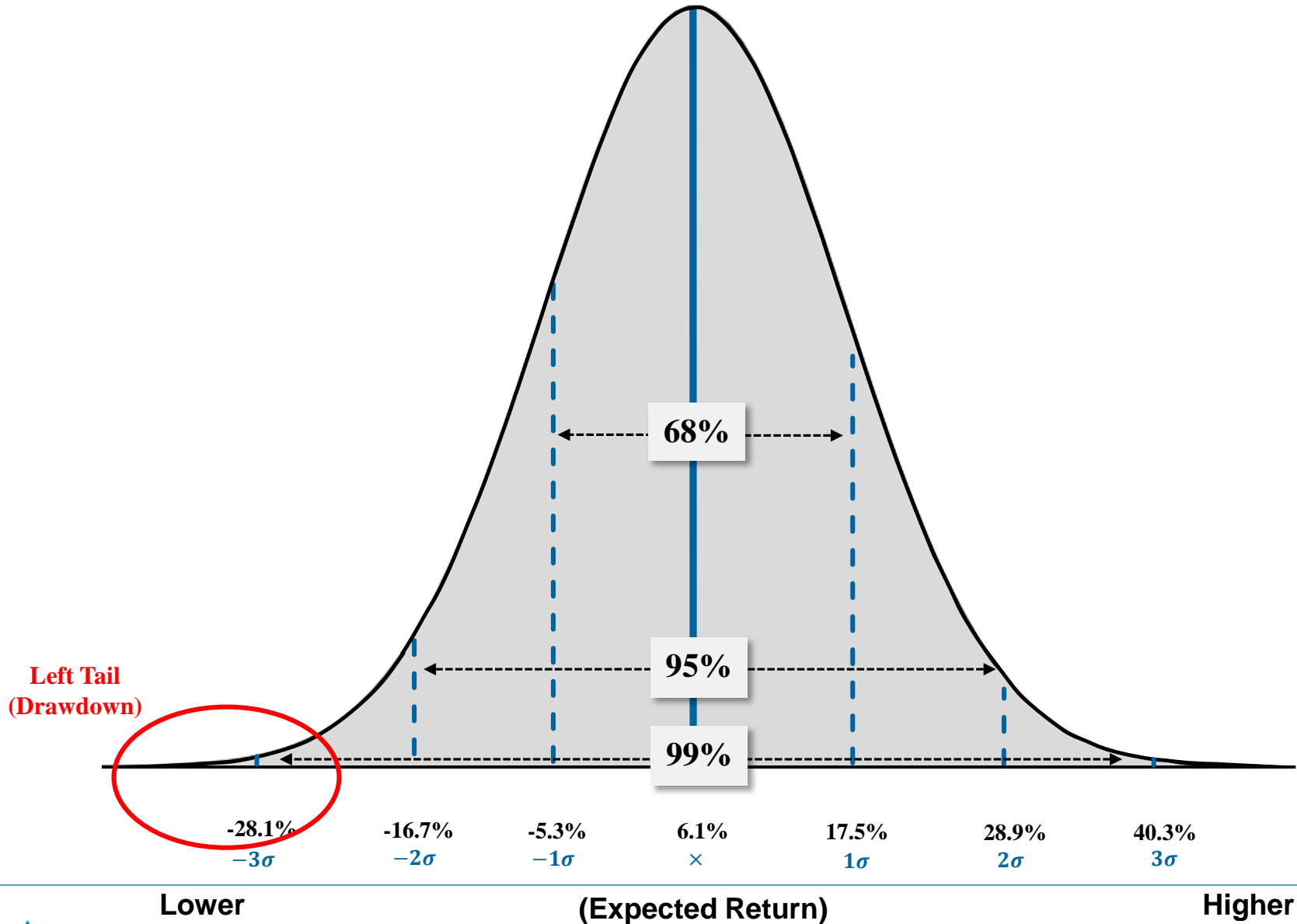


# CalPERS CMA's Are Within Industry Ranges

## Expected Return %

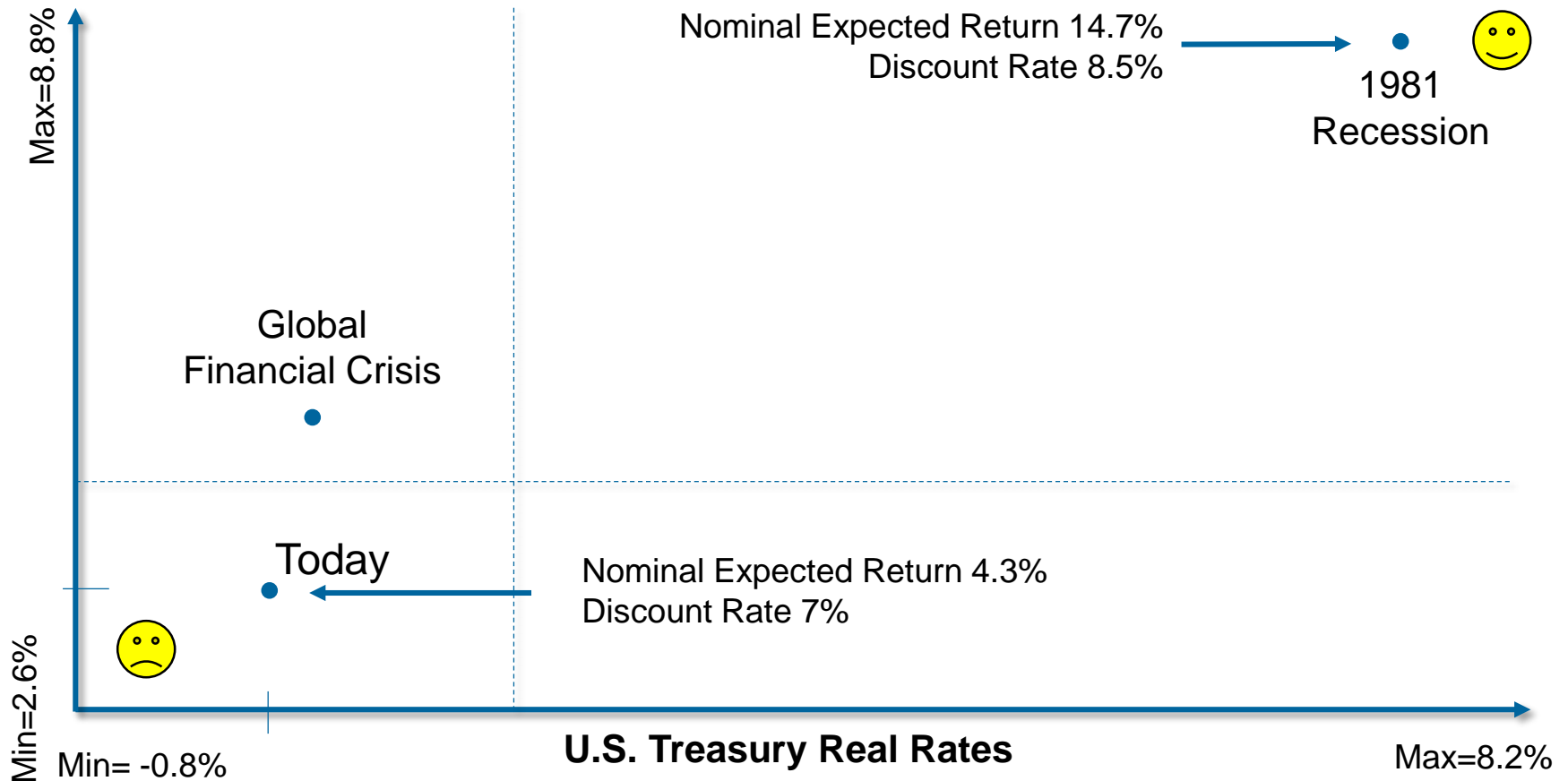


# A Wide Distribution of Potential Outcomes



# High Current Valuations Do Not Bode Well for Future Returns

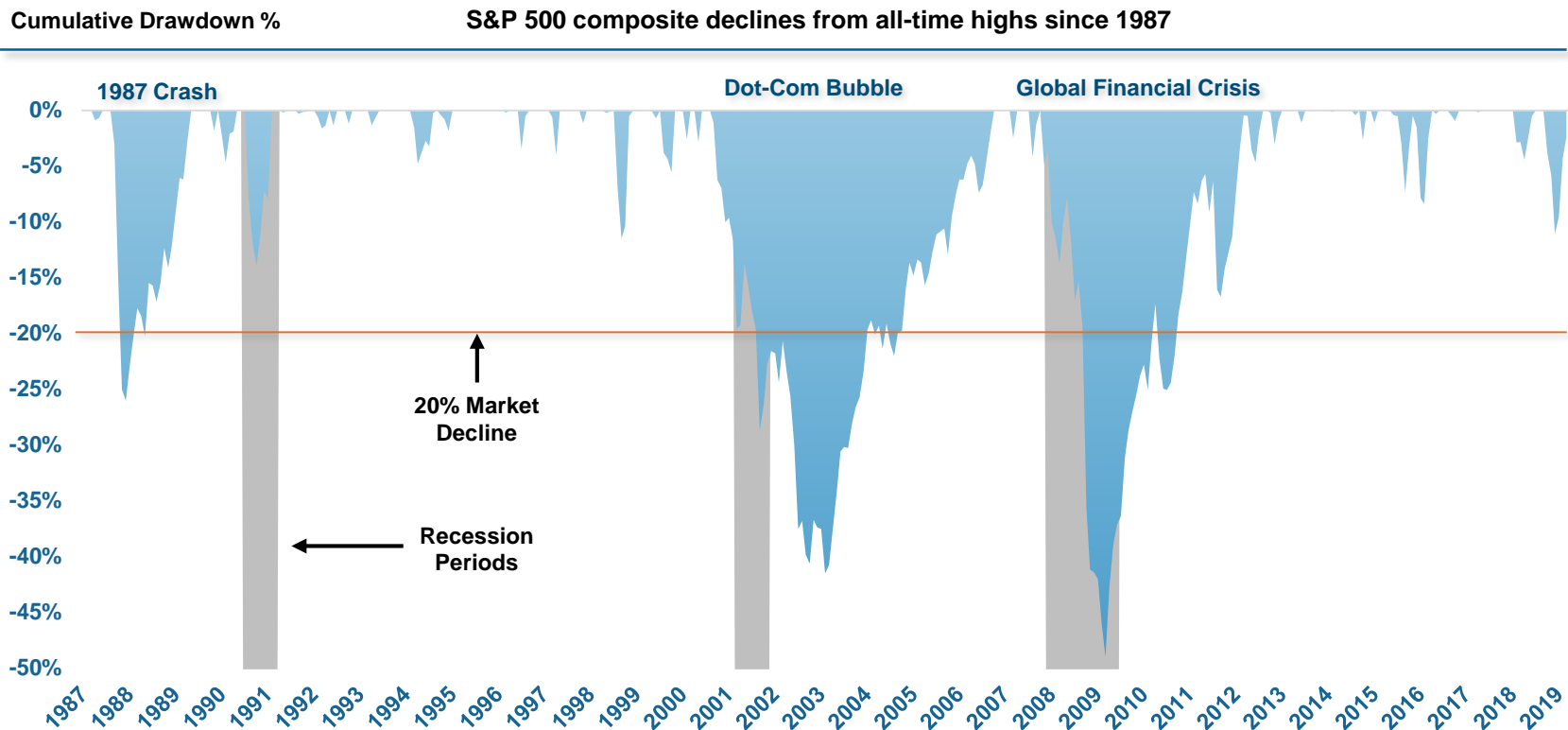
## U.S. Equity Real Yields



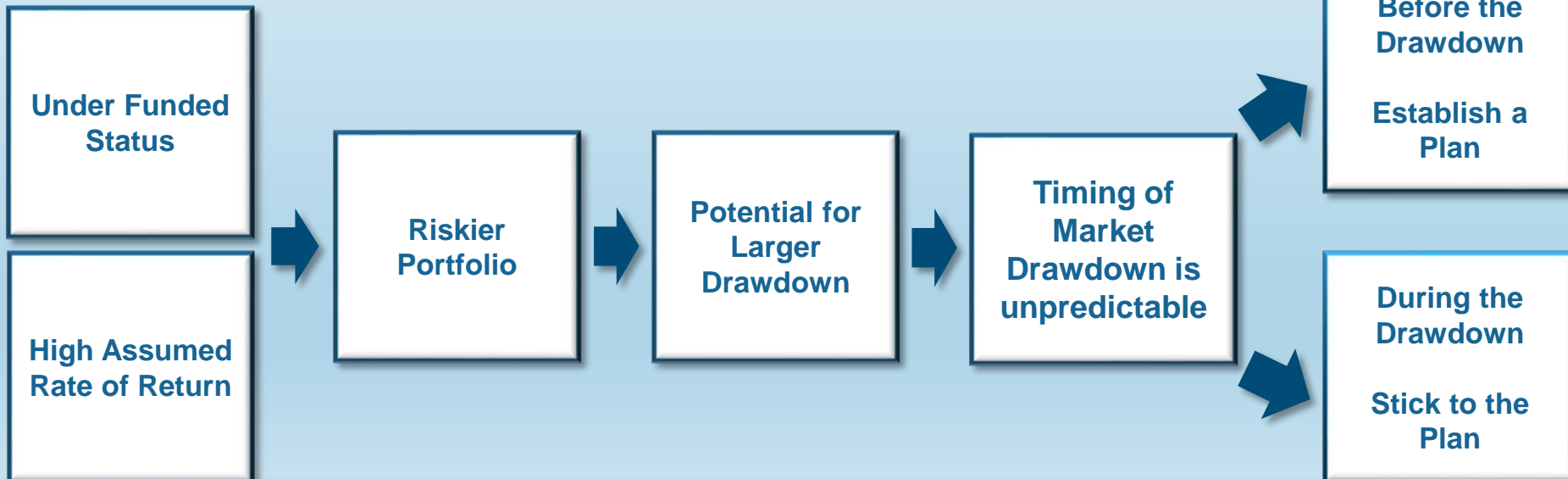
# What Is a Drawdown?

“Putting it plainly, a **drawdown** is the “**pain**” period experienced by an investor between a peak (new highs) and subsequent valley (a low point before moving higher).”

- Wikipedia



# Why Do We Care About Drawdowns?



# What “Pain” Does a Drawdown Inflict?

## *S&P 500 Total Returns versus Liabilities from 2007 - 2012*





# What is the Likelihood of a Drawdown?

- Unconditional probability of a drawdown is ~15%
- If we believe that we are in late cycle, the conditional probability is higher
- Estimates are based on history and are backward looking

# What has Already Been Done to Prepare for a Drawdown?

## Steps already taken to make us less vulnerable to a drawdown

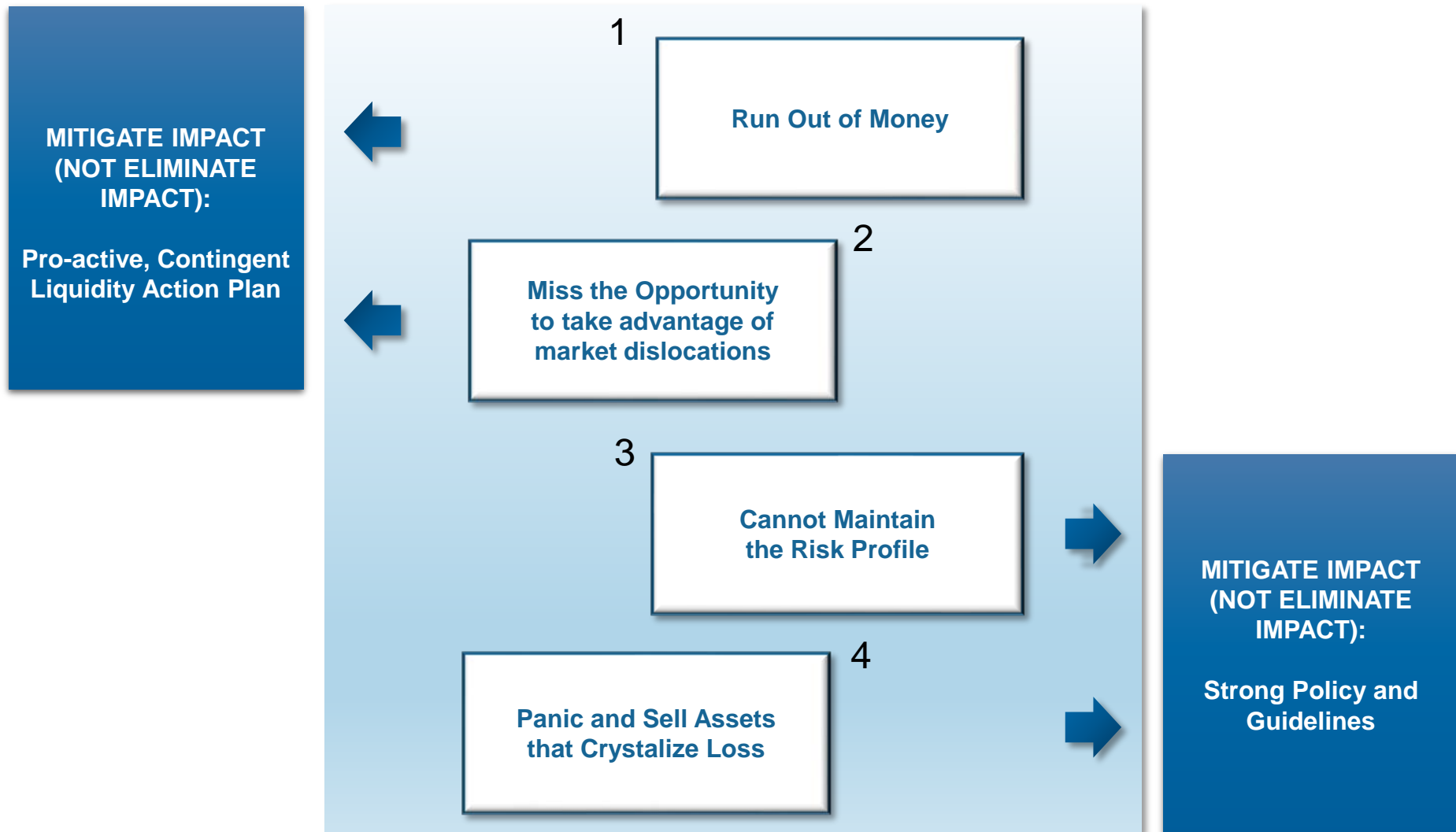
**Lower  
Discount Rate**

**New Asset  
Allocation**

**Capital injection  
from the State**

**Shorter  
Amortization**

# Effects of a Drawdown



# What Else Can We Do?

## Our Preparation

Develop an Action Plan of What  
To Do and Not To Do

Implement centralized Liquidity  
and Leverage Management



Implement more real-time  
monitoring and scenario  
analysis

Update investment policies to  
allow for faster response

## Your Partnership

Work together to forge solutions  
Be part of the plan



Support the plan during the  
drawdown



**Planning + Partnership = A Strong Defense Against a Drawdown**

# Developing an Action Plan

## What do we do during a drawdown?

1. **Meet all of our required cash flow obligations**
2. **Assess and understand impacts of drawdown across the portfolio**
3. **Maintain our desired risk exposures**
4. **Opportunistically seek to deploy capital / dry powder**

## What do we NOT do during a drawdown?

1. **Succumb to common investment behavioral biases**
2. **Allow deviation from pre-determined plan without a strong justification**

# When the Drawdown Arrives, Remember to ....

