

# Mistakes to avoid when trading with systems

*Robert Carver*

*London Traders Expo, 11<sup>th</sup> December 2015*

**Mistake #1: Overfitting**

**Mistake #2: Too much risk**

**Mistake #3: Trading too often**

**Mistake #4: Meddling**

Mistake #1: Overfitting

***Mistake #2: Too much risk***

***Mistake #3: Trading too often***

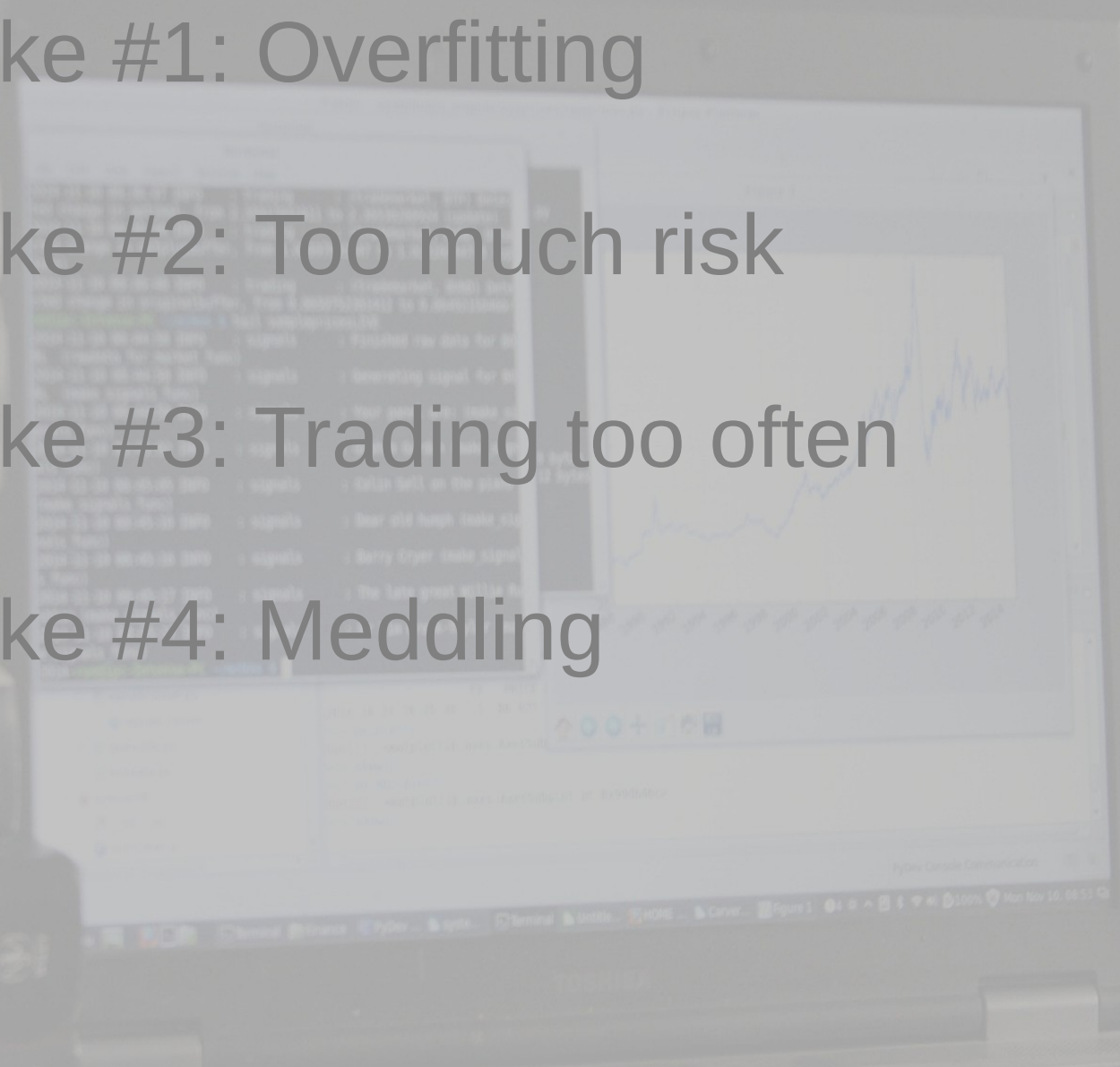
Mistake #4: Meddling

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## Mistake #1: Overfitting

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# Mistake #1: Over fitting



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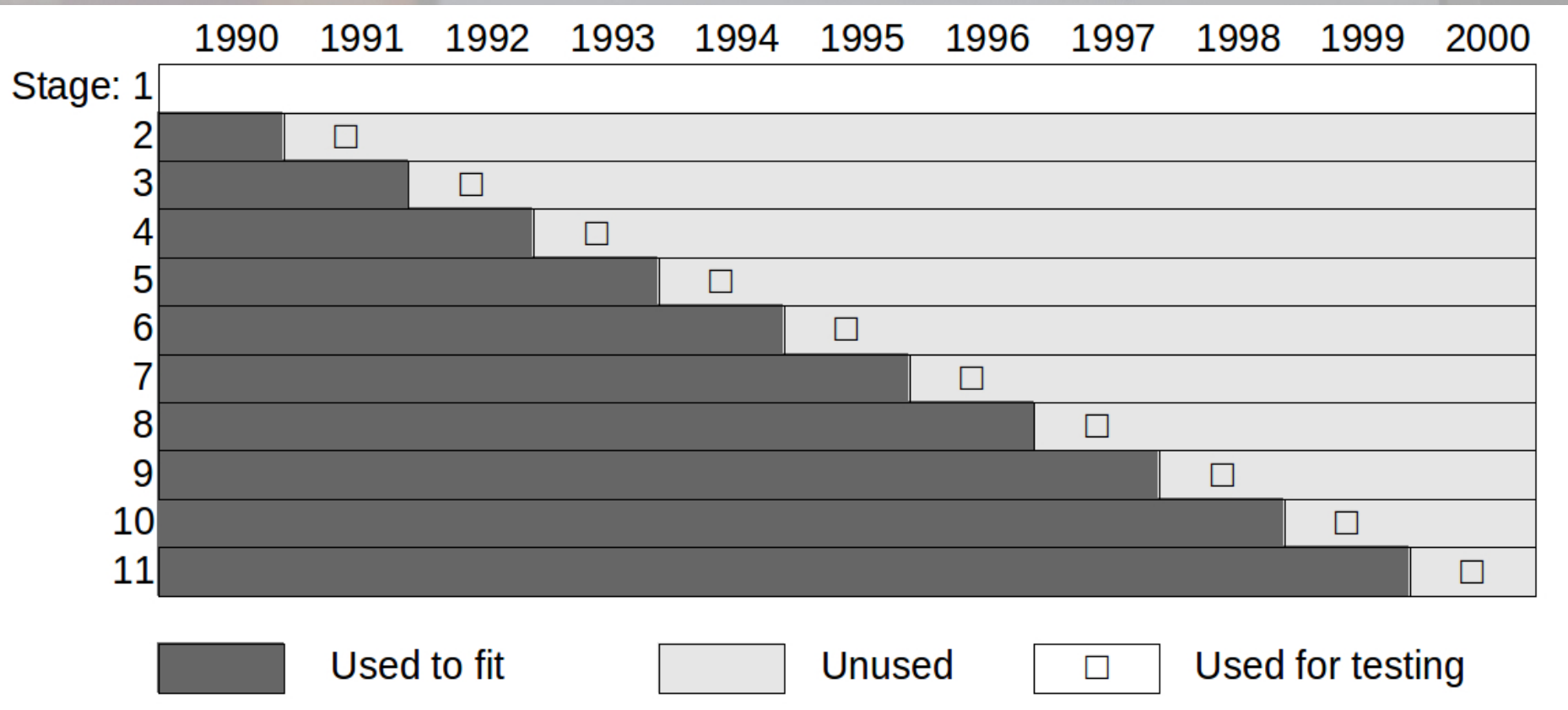




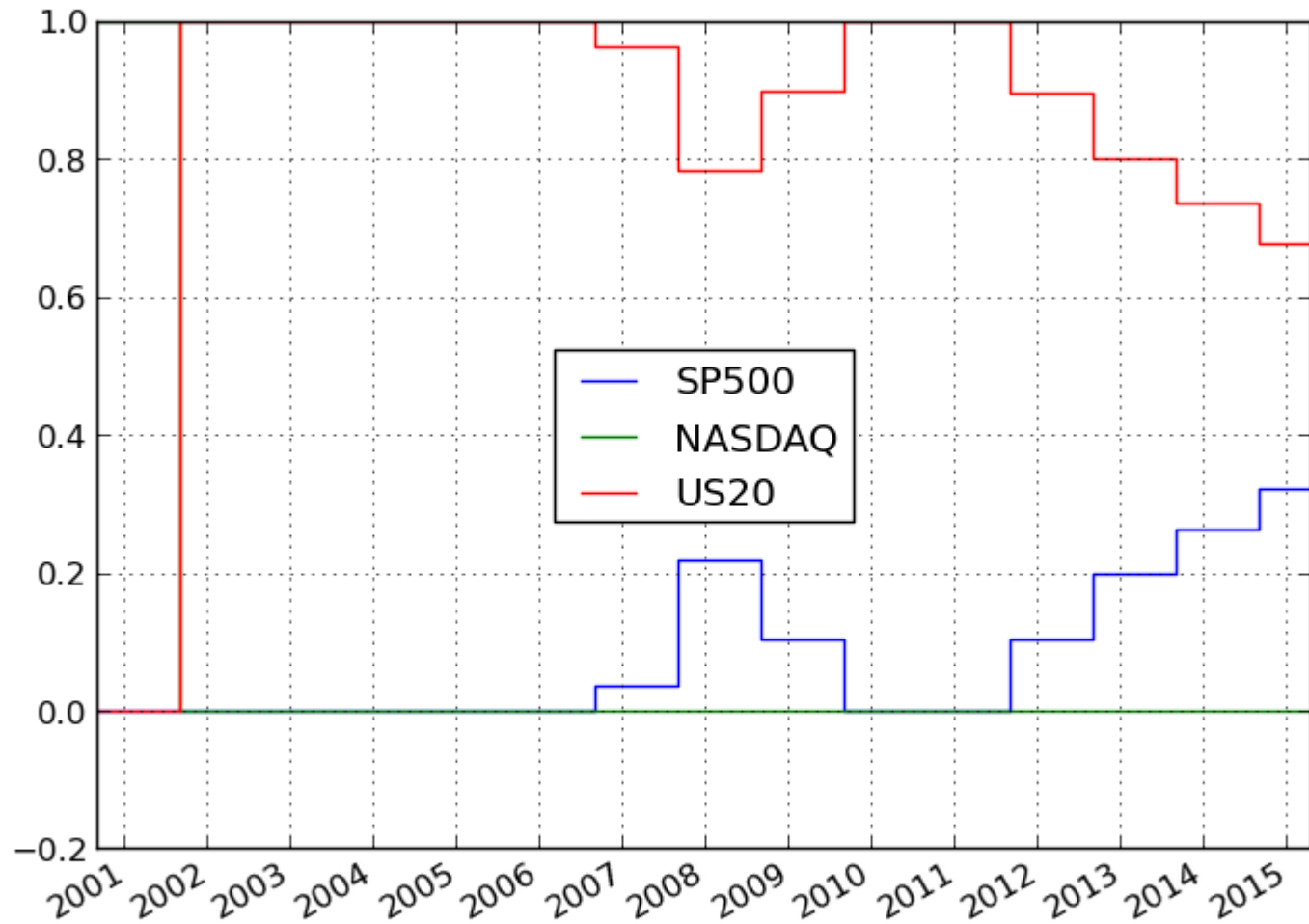
# Antidotes to overfitting

- Avoid ***implicit*** overfitting (data snooping)
- Fit on an out of sample basis – expanding window is best
- Avoid ***explicit*** overfitting – use robust techniques

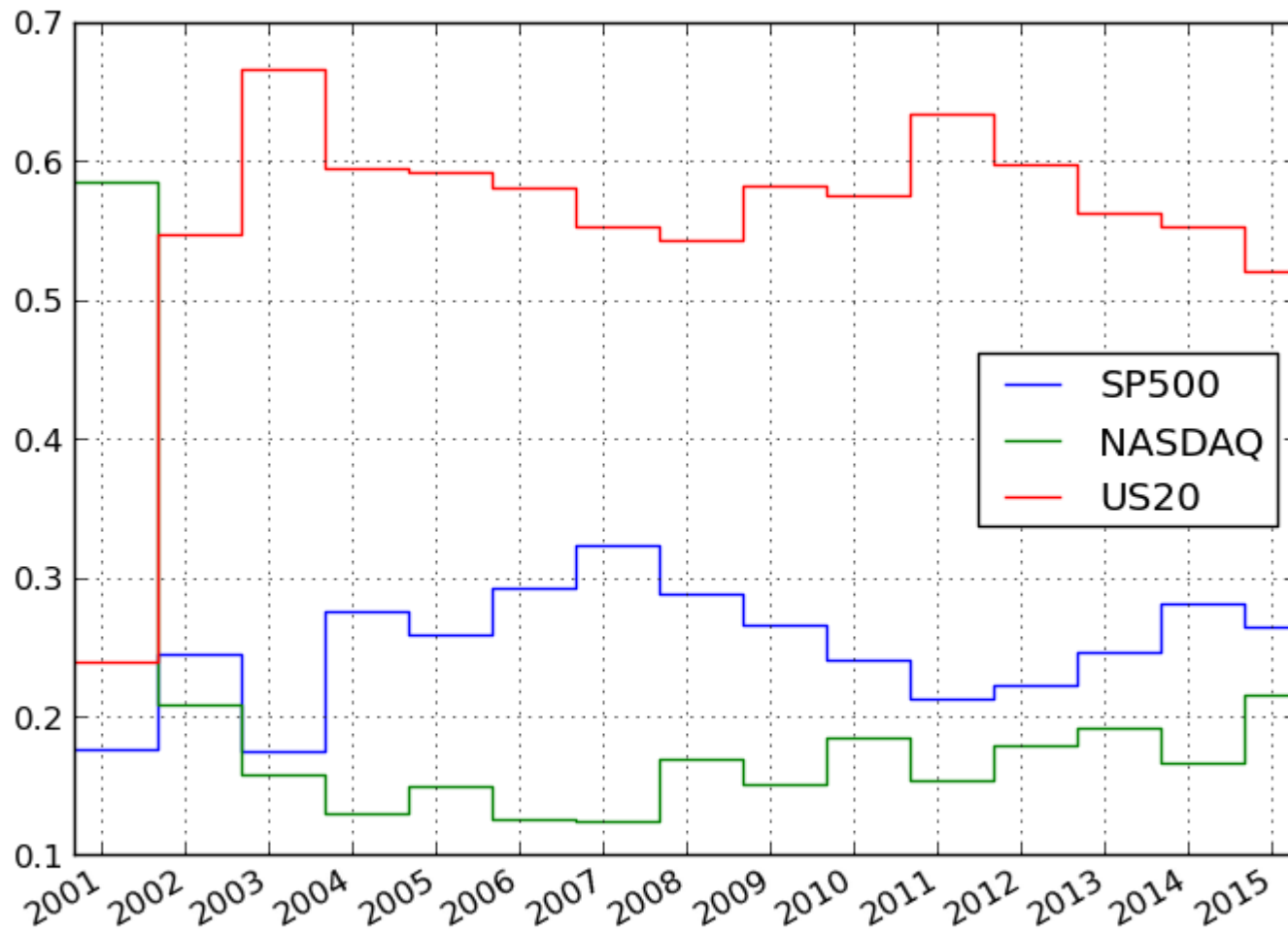
# Fit out of sample with expanding window



# Use robust fitting techniques



# Use robust fitting techniques





Mistake #1: Overfitting

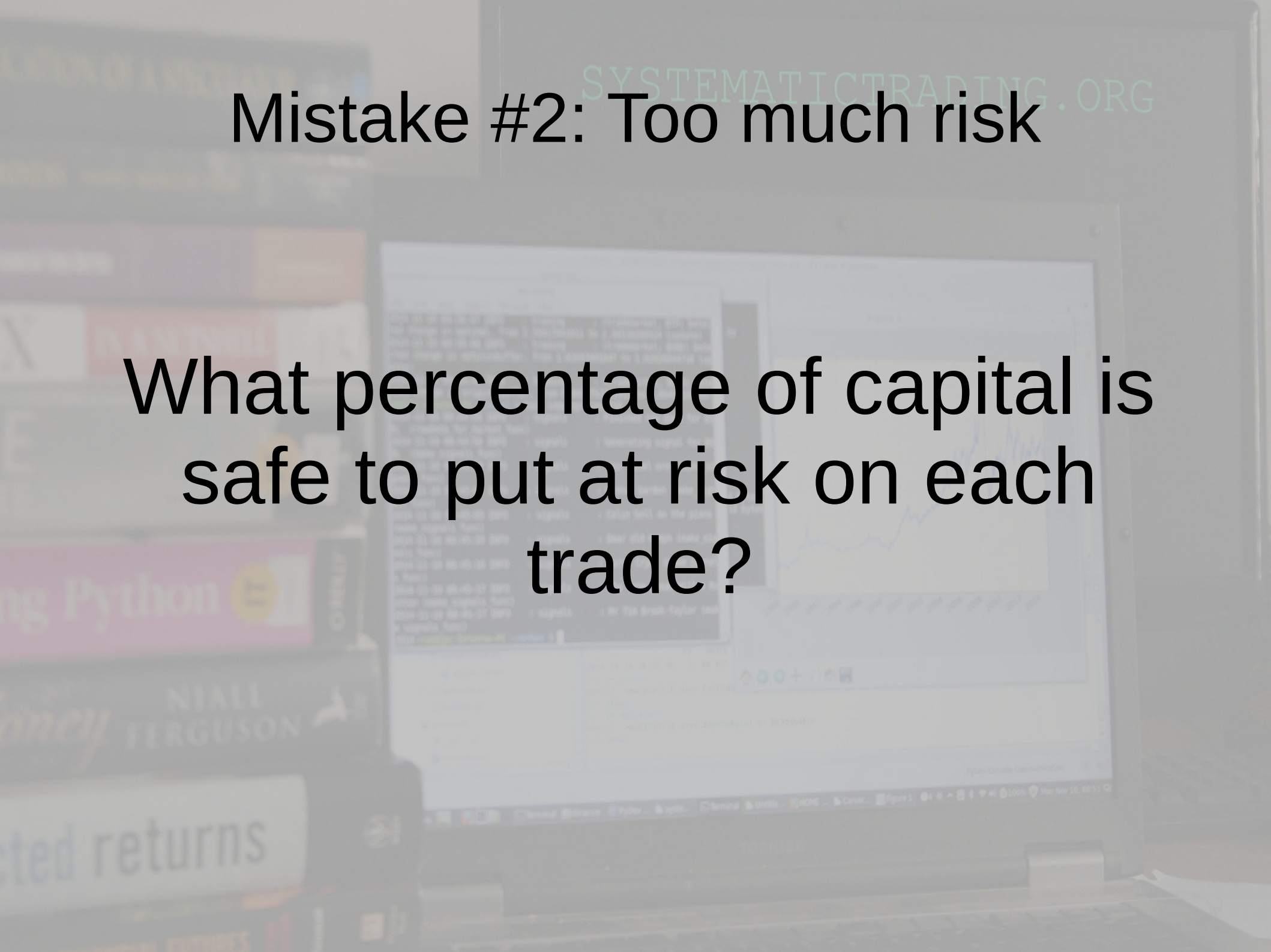
**Mistake #2: Too much risk**

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# Mistake #2: Too much risk

What percentage of capital is safe to put at risk on each trade?



## Mistake #2: Too much risk

What percentage of capital is safe to put at risk on each trade?

Answer: ... it depends.

# Antidotes for too much risk

Step one: Realistic expectations

Step two: Select holding period

Step three: Portfolio size

Step four: Calculate % of capital per bet



# Step 1: Realistic Sharpe Ratio expectations

## **SR above 1.0**

High frequency trading (IMC, virtu..): >> 1.0

## **Sharpe Ratio around 1.0**

Systematic hedge funds, highly diversified portfolio of systems and instruments

## **Sharpe Ratio less than 1.0**

Warren Buffet: 0.75

*Past performance is no guide to future returns*

# Step 2: Select holding period

- Theoretical potential
- Costs (of which more in a moment- mistake # 3...)
  - Commissions
  - Spread
- Infrastructure required
- Typical price patterns
- Skillset / domain knowledge

# Step 3: Portfolio size

Diversification across instruments is good

Systematic trading, especially when automated, is well suited to larger portfolios

Causes problems with small portfolios, large instruments, especially if paying fixed costs per ticket

Need to reduce position size accordingly



# Step 4: Calculate correct bet size

SR: 0.5

Average number of positions

		1	2	5	10	20
Holding period	4 days	3.1%	1.6%	0.6%	0.3%	0.2%
	9 days	6.3%	3.1%	1.3%	0.6%	0.3%
	17 days	9.4%	4.7%	1.9%	0.9%	0.5%
	1.5 months	12.5%	6.3%	2.5%	1.3%	0.6%
	3 months	25.0%	12.5%	5.0%	2.5%	1.3%
	26 months	31.3%	15.6%	6.3%	3.1%	1.6%

SR: 1.0

Average number of positions

		1	2	5	10	20
Holding period	4 days	6.3%	3.1%	1.3%	0.6%	0.3%
	9 days	12.5%	6.3%	2.5%	1.3%	0.6%
	17 days	18.8%	9.4%	3.8%	1.9%	0.9%
	1.5 months	25.0%	12.5%	5.0%	2.5%	1.3%
	3 months	50.0%	25.0%	10.0%	5.0%	2.5%
	26 months	62.5%	31.3%	12.5%	6.3%	3.1%

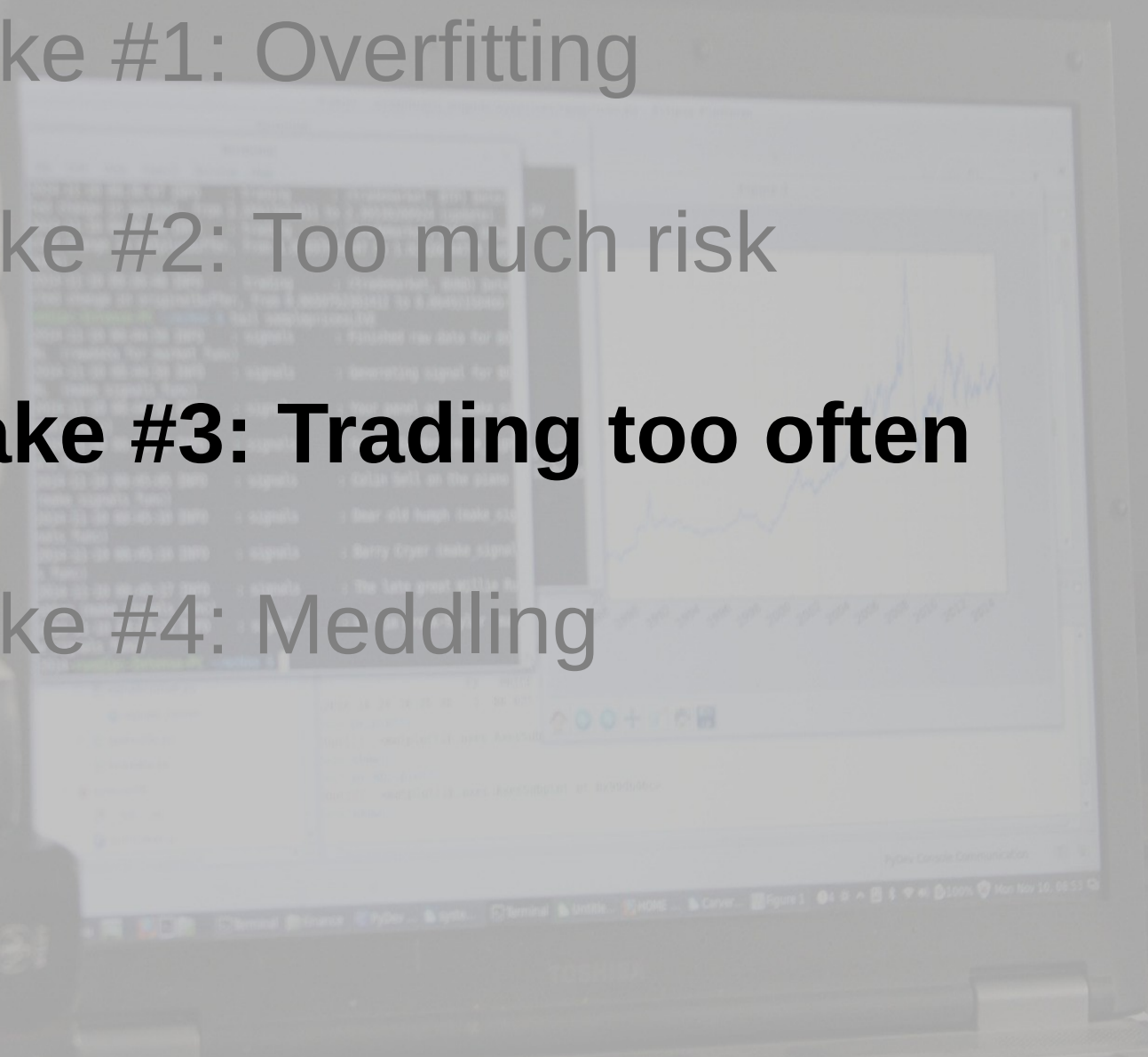


Mistake #1: Overfitting

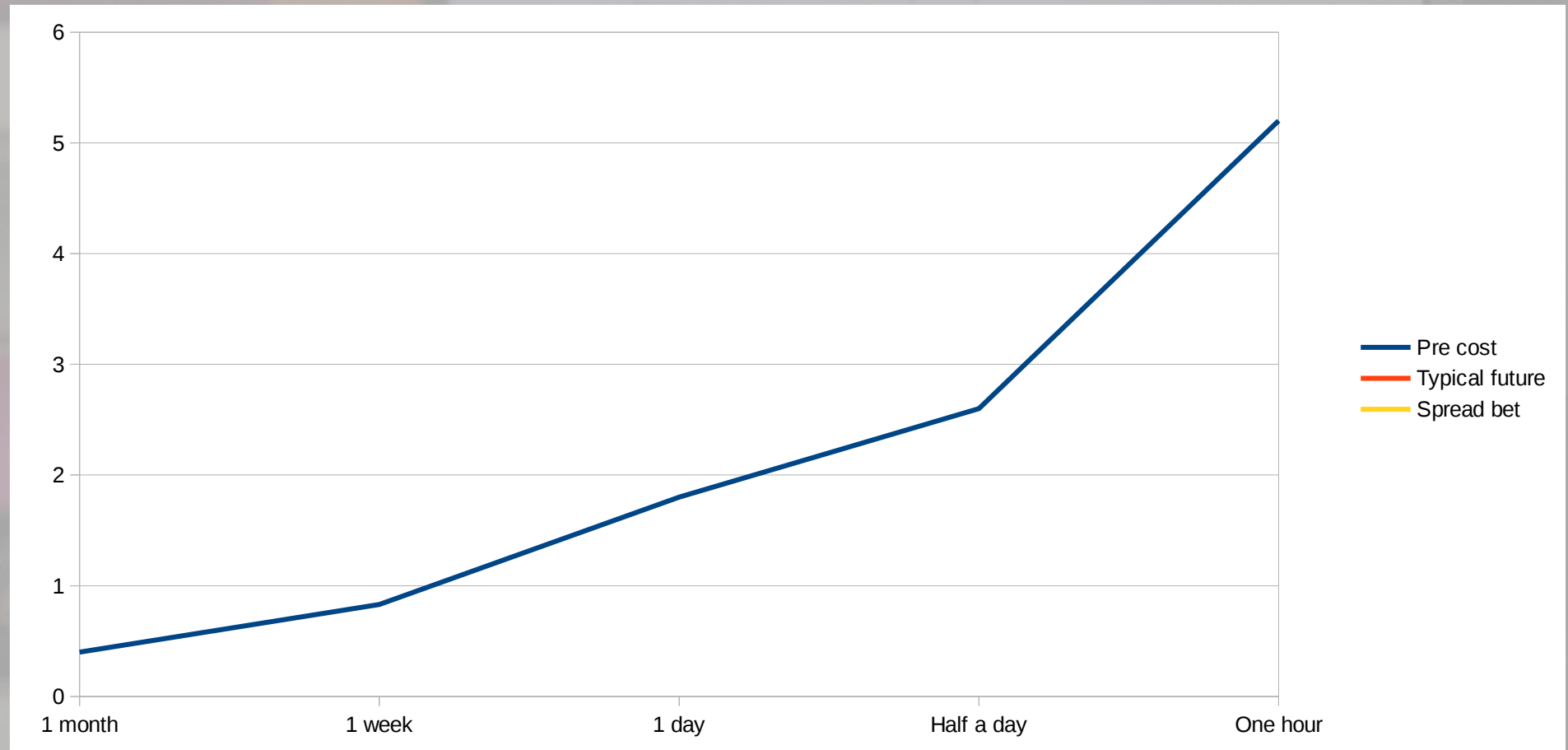
Mistake #2: Too much risk

**Mistake #3: Trading too often**

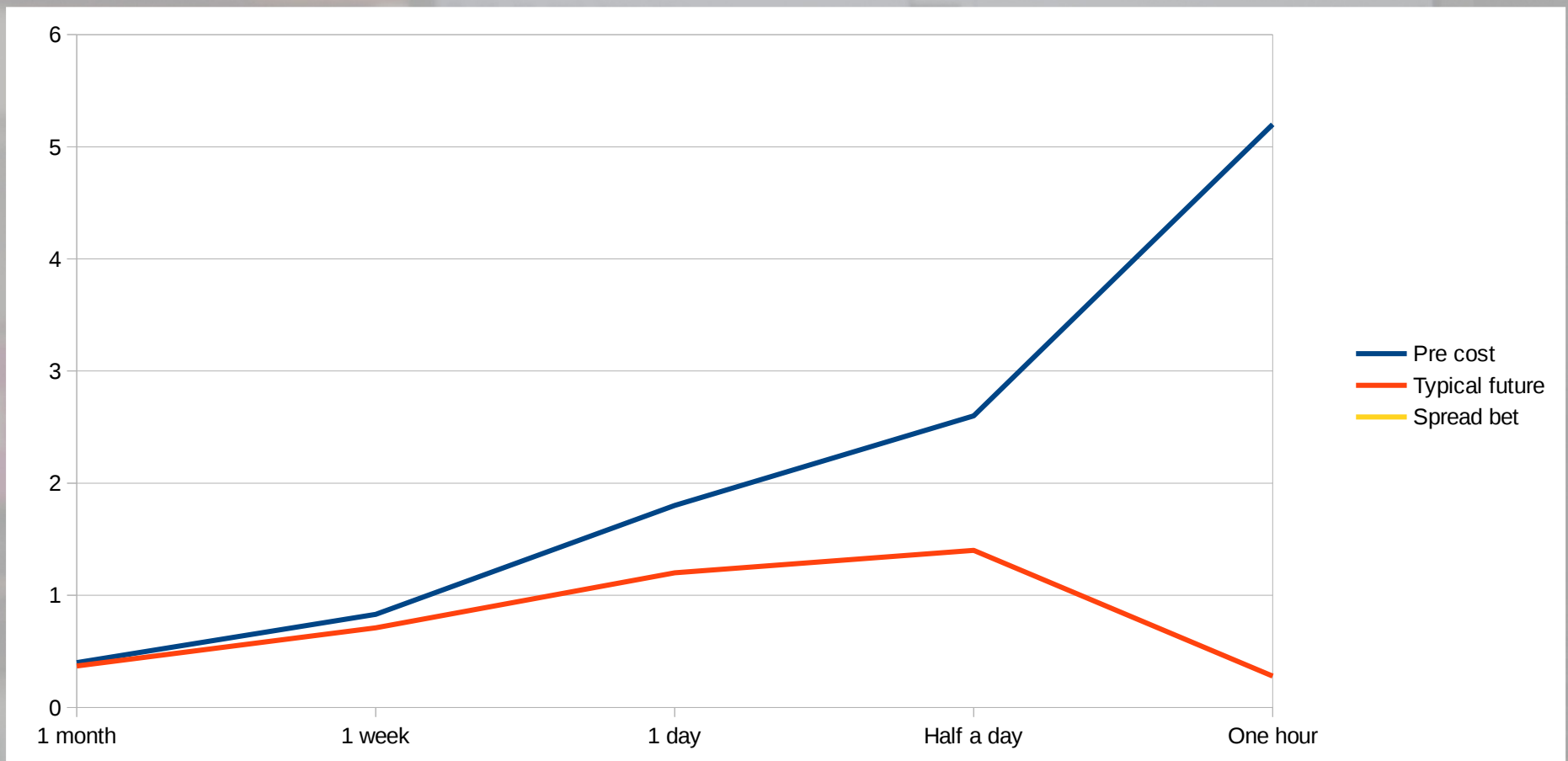
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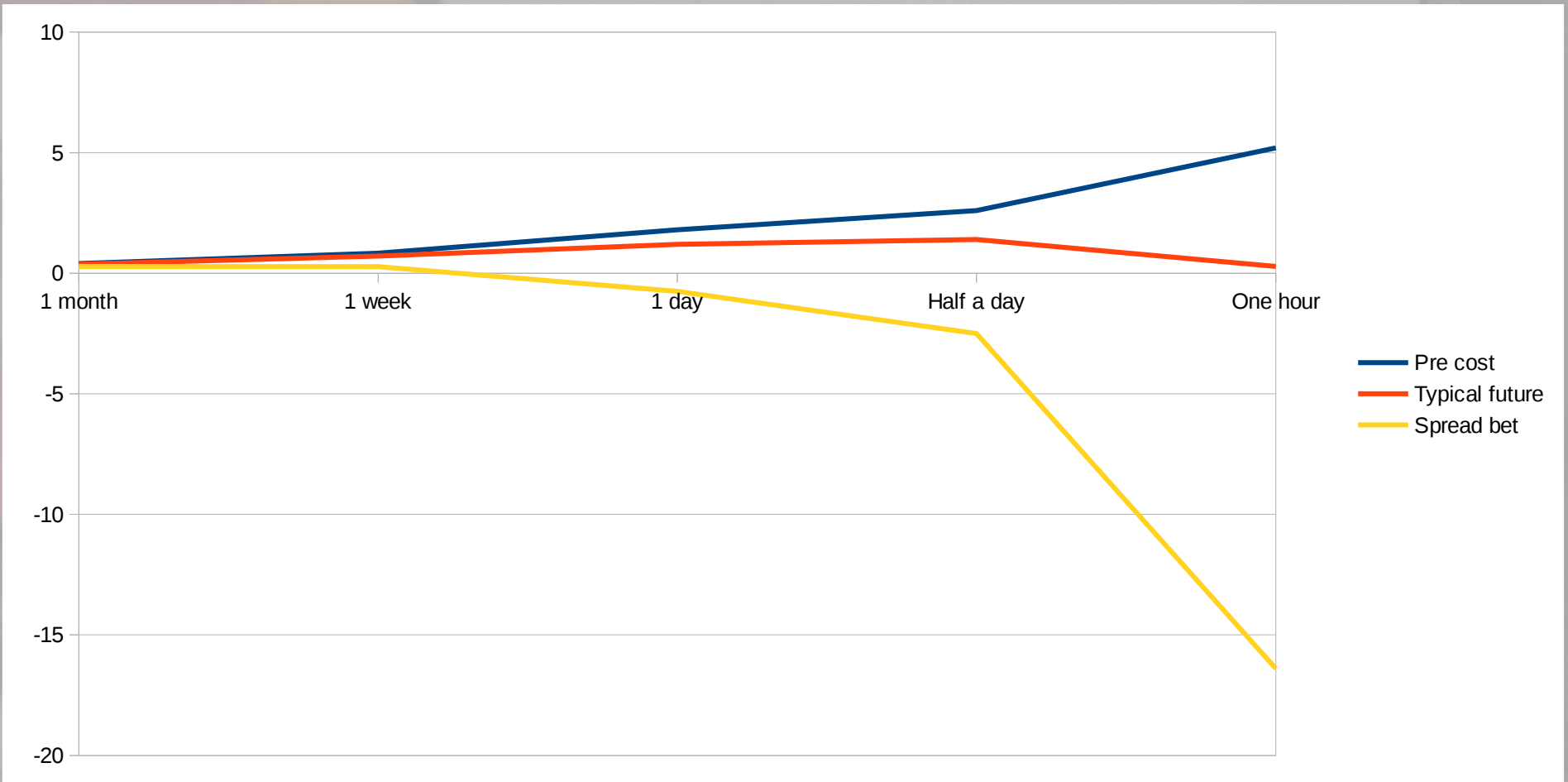
# Mistake #3: Trading too often



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# Mistake #3: Trading too often





# Antidotes for trading too quickly

- Know your likely costs
- Know how quickly you are likely to trade
- Have realistic (pessimistic) expectations of pre cost performance
- Never give away more than a third of pre cost performance in costs, ideally less

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# Mistake #4: Meddling

- Ignore trading signals.
- “Risk management”
- “Recalibration”
- “Improvement”



# Mistake #4: Meddling

- Ignore trading signals.
  - “Risk management”
  - “Recalibration”
  - “Improvement”
- 
- Are we cleverer than the system?
  - Do we know more than the system does?
  - Will we make better decisions?

ted returns



# Antidotes for meddling

- Use an automated system if you can't control yourself; or invest in a systematic fund
- Don't take on too much risk – keep expected losses below your psychological threshold
- Have realistic (or even pessimistic) expectations about profits and losses
- Simple, easy to understand, systems are easier to trust



# Summary

- **STEP ONE:** Create a simple system that you can trust and are comfortable with; that isn't over-fitted, doesn't take on too much risk, doesn't trade too quickly.



# Summary

- **STEP ONE:** Create a simple system that you can trust and are comfortable with; that isn't over-fitted, doesn't take on too much risk, doesn't trade too quickly.
- **STEP TWO:** Stick to it. Don't meddle with it.



# SYSTEMATIC *TRADING*

A unique new method for designing  
trading and investing systems

ROBERT CARVER

Hh

SYSTEMATICTRADING.ORG

My book is available from:

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