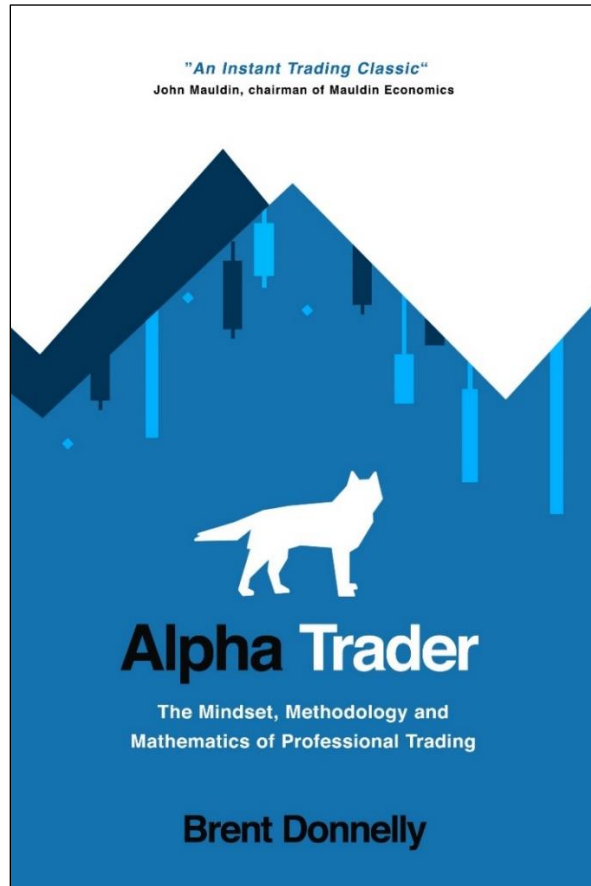# Alpha Trader
Images, Charts, and Tables
To accompany the Alpha Trader audio book

Note this pdf includes all major images from the paperback, but some are not referred to in the audiobook

You can buy a paperback or hardcover copy of Alpha Trader here.

And! If you enjoyed Alpha Trader, check out my macro daily here:

www.spectramarkets.com/subscribe

Trader Questionnaire

		1	2	3	4	5	6	7	8	9	10	
Risk averse	A											Risk seeking
Not very confident	B											Extremely confident
Firmly held opinions	C											Intellectually flexible
Contrarian	D											Tend to follow others

		1	2	3	4	5	6	7	8	9	10	
Impulsive	E											Rational
Can snap under stress	F											Copes with high stress
Poor self-control	G											Excellent willpower
Average math skill	H											Quantitative superstar
Procrastinator	I											Doer
Loves money	J											Loves trading
Acts on gut feel	K											Acts on logic
Rarely positive	L											Always positive

		1	2	3	4	5	6	7	8	9	10	
Lucky	M											Unlucky
Limitless energy	N											Often exhausted
Highly creative	O											Average imagination
I control my life	P											I don't control my life
Decisive	Q											Hesitant
Adapts well to change	R											Not great with change
Focused	S											Scattered
Always very curious	T											Not all that curious
Organized	U											Disorganized
Trading experience	V											No trading experience

		1	2	3	4	5	6	7	8	9	10	
Highly emotional	W											Robotic
Loner	X											Social
Masculine	Y											Feminine
Introvert	Z											Extrovert

Estimate of Alpha Trader Questionnaire Scores

		1	2	3	4	5	6	7	8	9	10	
Risk averse	A							X				Risk seeking
Not very confident	B								X			Extremely confident
Firmly held opinions	C					X						Intellectually flexible
Contrarian	D					X						Tend to follow others

		1	2	3	4	5	6	7	8	9	10	
Impulsive	E										X	Rational
Can snap under stress	F										X	Copes with high stress
Poor self-control	G										X	Excellent willpower
Average math skill	H								X			Quantitative superstar
Procrastinator	I										X	Doer
Loves money	J										X	Loves trading
Acts on gut feel	K								X			Acts on logic
Rarely positive	L							X				Always positive

		1	2	3	4	5	6	7	8	9	10	
Lucky	M	X										Unlucky
Limitless energy	N	X										Often exhausted
Highly creative	O			X								Average imagination
I control my life	P	X										I don't control my life
Decisive	Q			X								Hesitant
Adapts well to change	R	X										Not great with change
Focused	S			X								Scattered
Always very curious	T	X										Not all that curious
Organized	U	X										Disorganized
Trading experience	V	X										No trading experience

		1	2	3	4	5	6	7	8	9	10	
Highly emotional	W							X				Robotic
Loner	X							X				Social
Masculine	Y							X				Feminine
Introvert	Z					X						Extrovert

Figure 1

USDJPY vs. US 10-year rates November 2009 to May 5, 2010
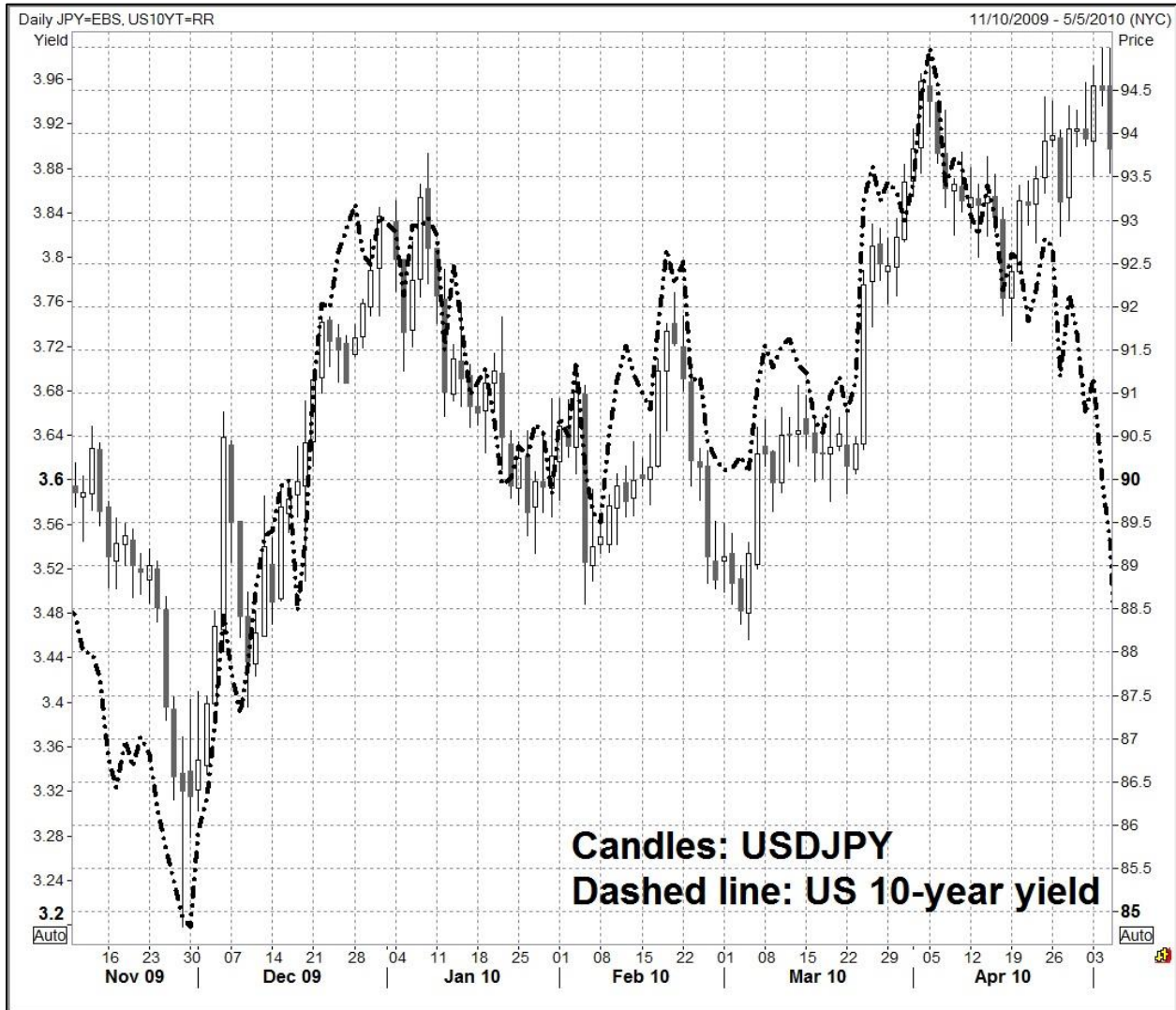
Figure 2

USDJPY May 3-7, 2010 (US stock market Flash Crash was May 6)
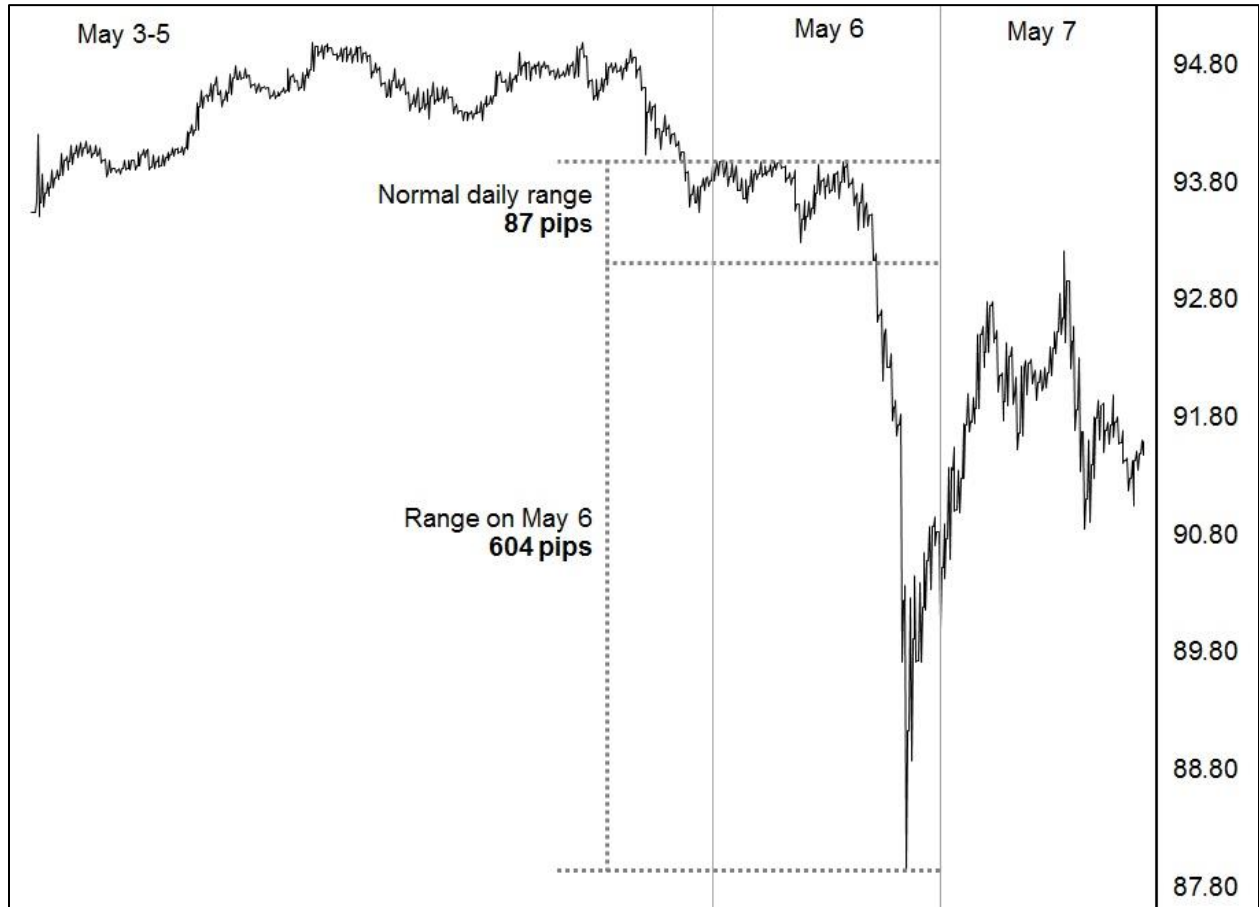
Figure 3

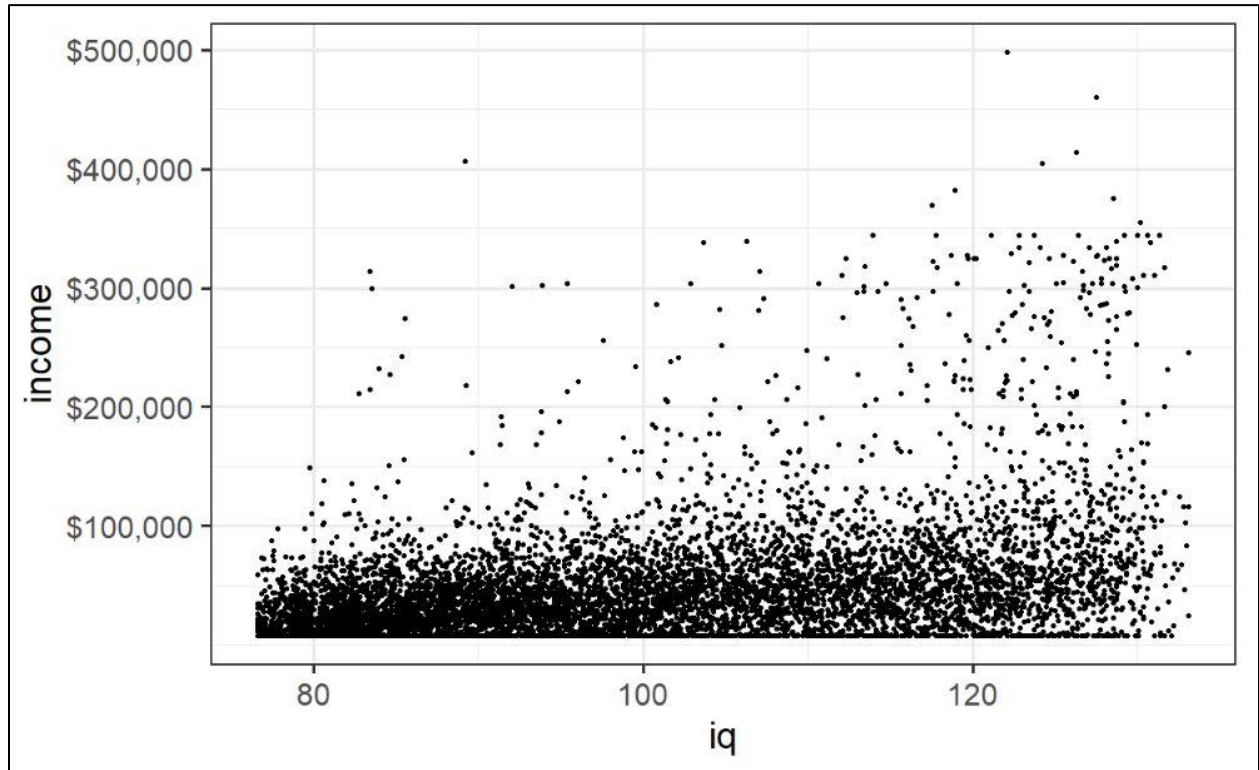**Results of a survey I conducted in 2016**
Question: How would you compare yourself to others in your role?
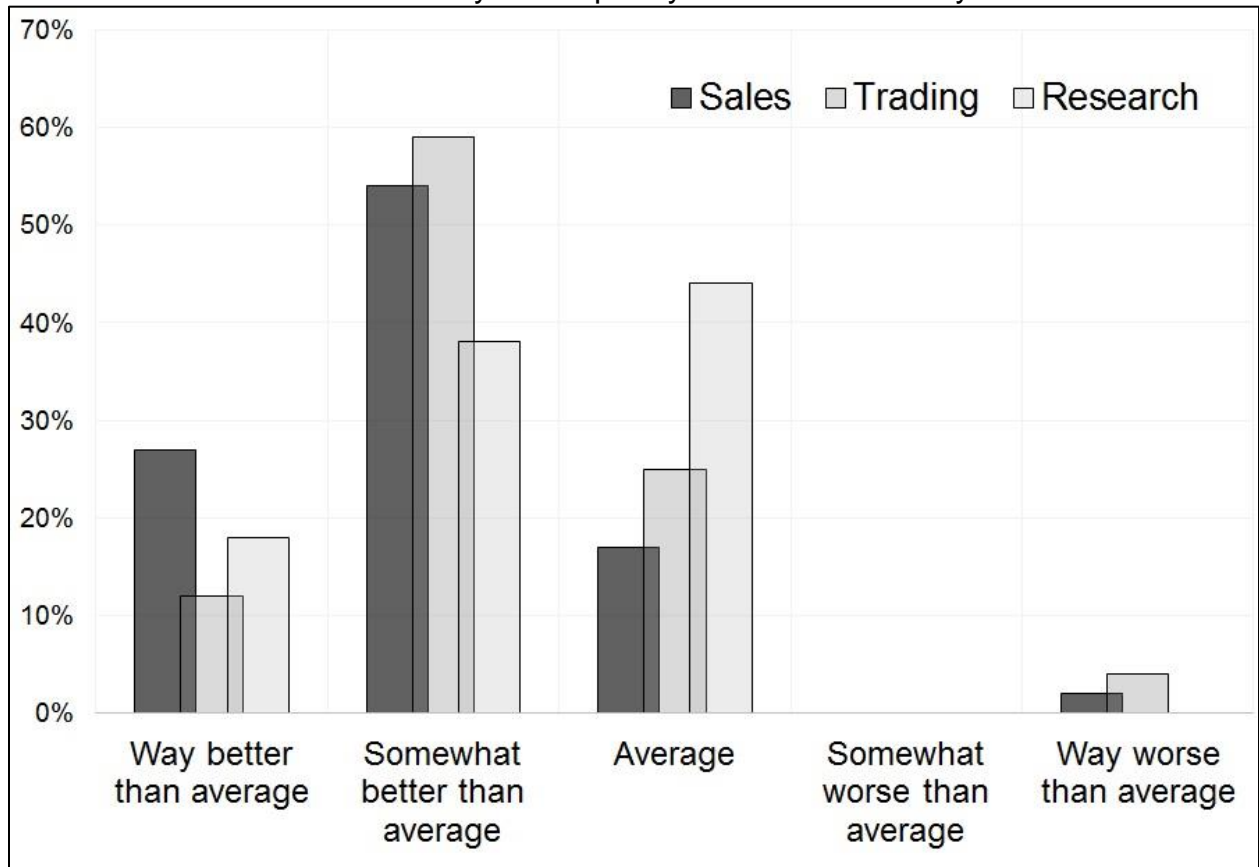
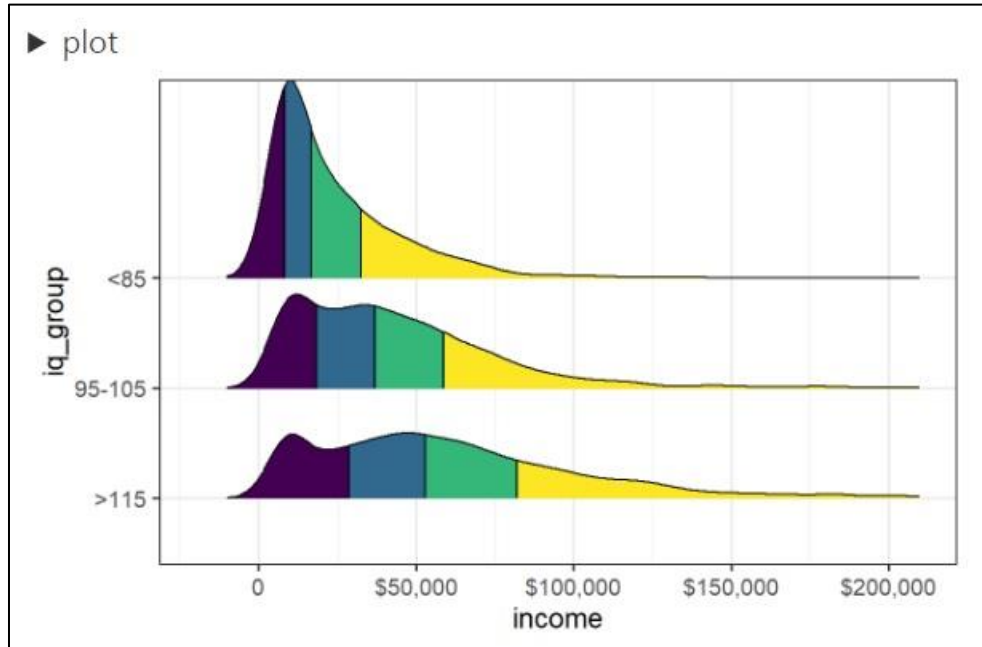Sample size = 319

Figure 4

The relationship between IQ and income

This and next two images courtesy of Jonatan Pallesen
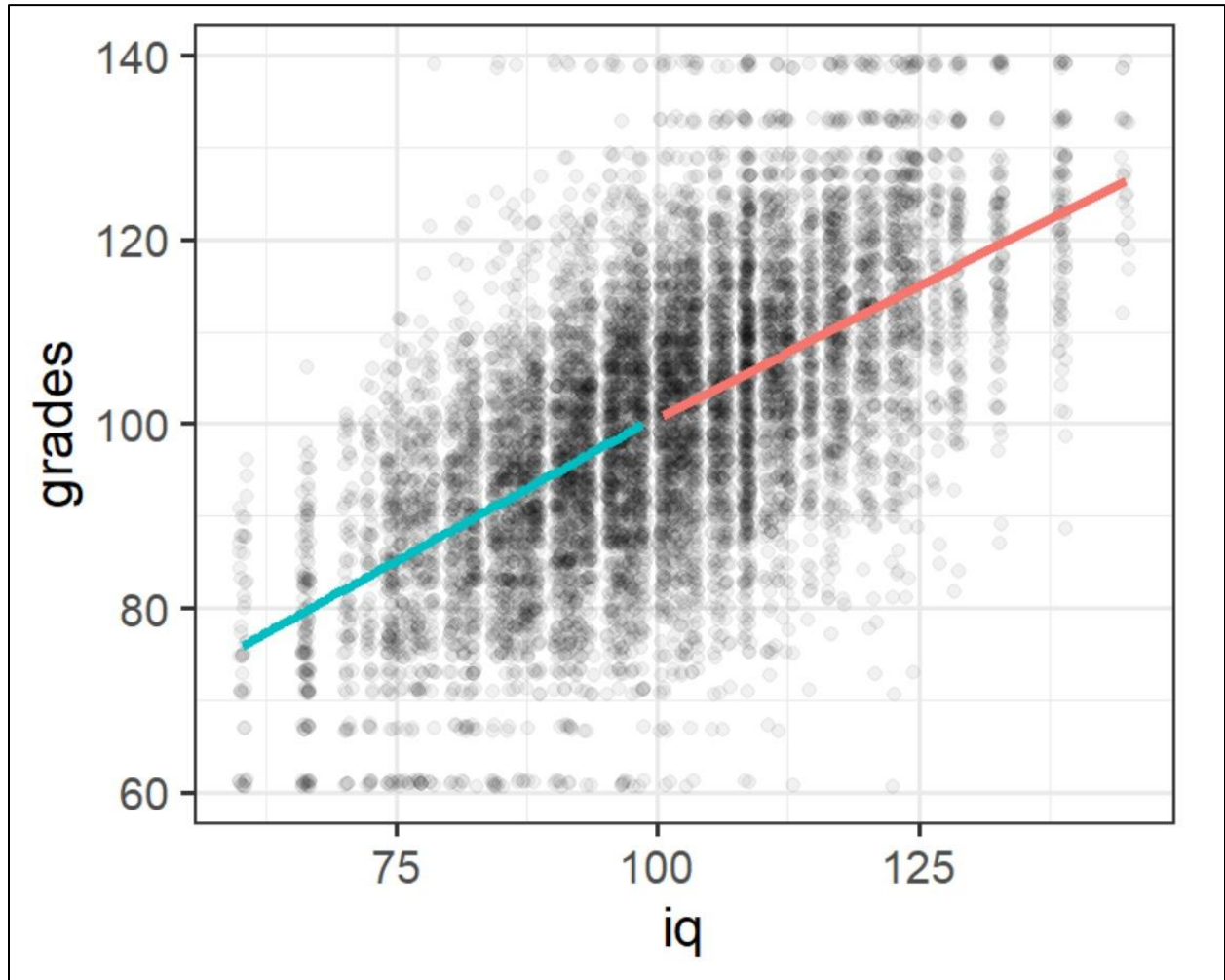
https://jsmp.dk/posts/2019-06-16-talebiq/

Figure 5

The distribution of incomes for low, median, and high IQs

Source: https://jsmp.dk/posts/2019-06-16-talebiq/

Figure 6

Academic Grades and IQ

Source: https://jsmp.dk/posts/2019-06-16-talebiq/

Figure 7

Conscientiousness by age (average of males and female score)
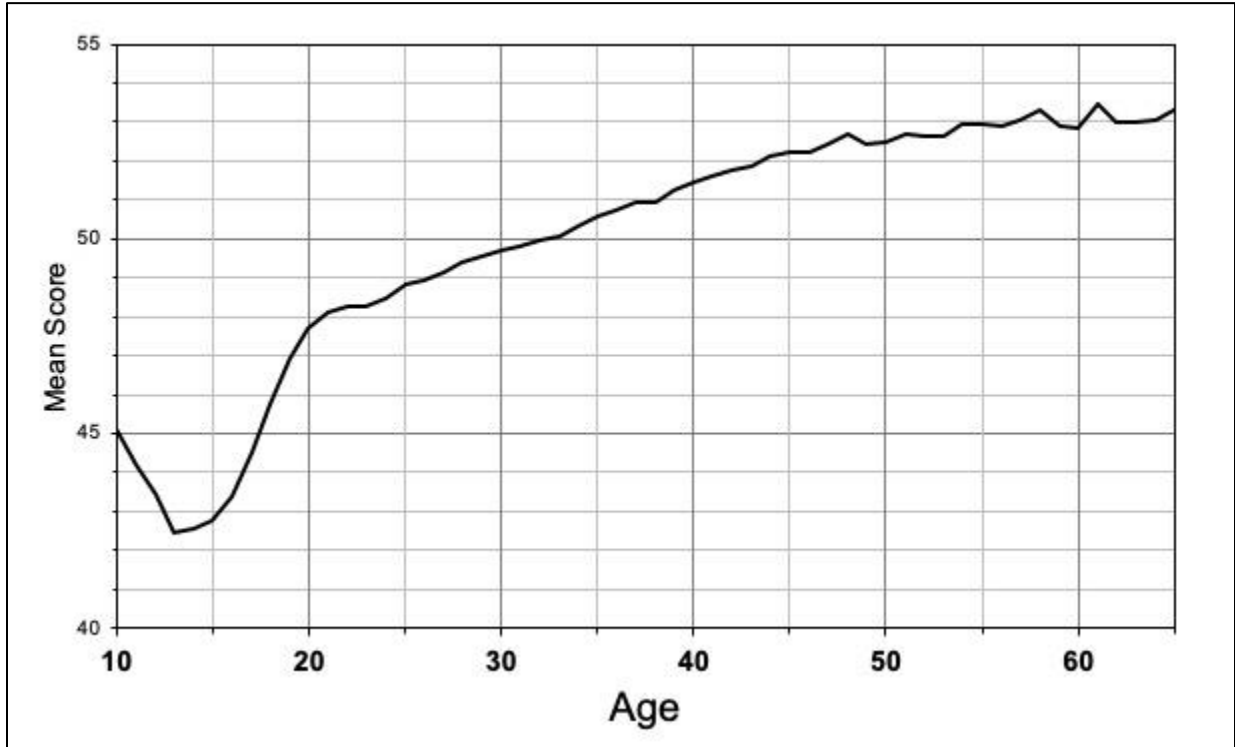
Image: Donnelly, data provided by Christopher Soto

Figure 8

The Direct Effect of Personality and IQ on earnings (men)
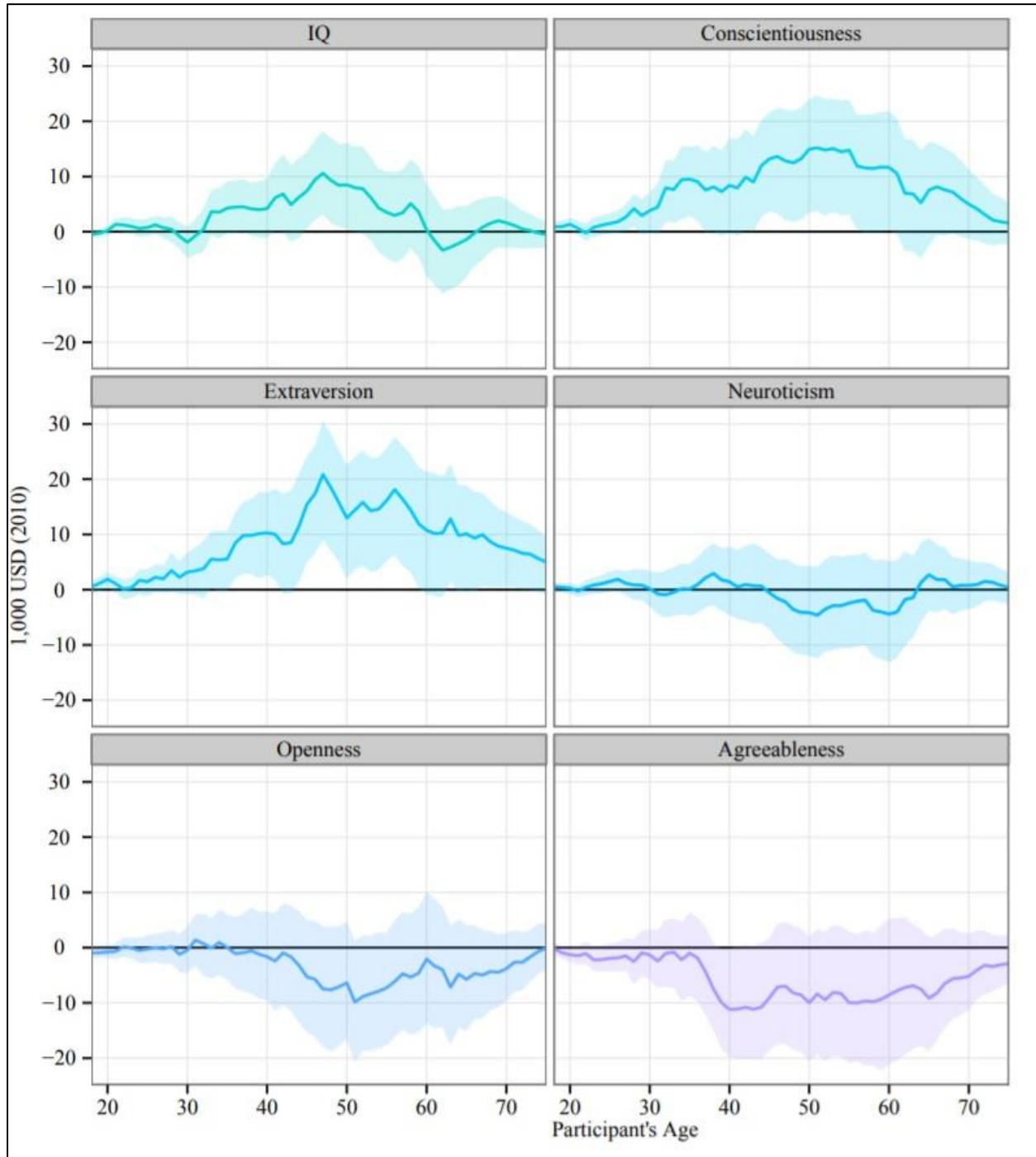
Standardized coefficients δ_t from Eq. (2) on earnings after tuition, holding background factors constant.

The shaded areas are standard bootstrap 95%-confidence bands from 1,000 draws.

Figure 9

Month of birth distribution for players in qualifying teams for UEFA U17, U19 and U21 tournaments in 2010/11. Dataset 4,108 normalised against EU live births 2000 to 2009
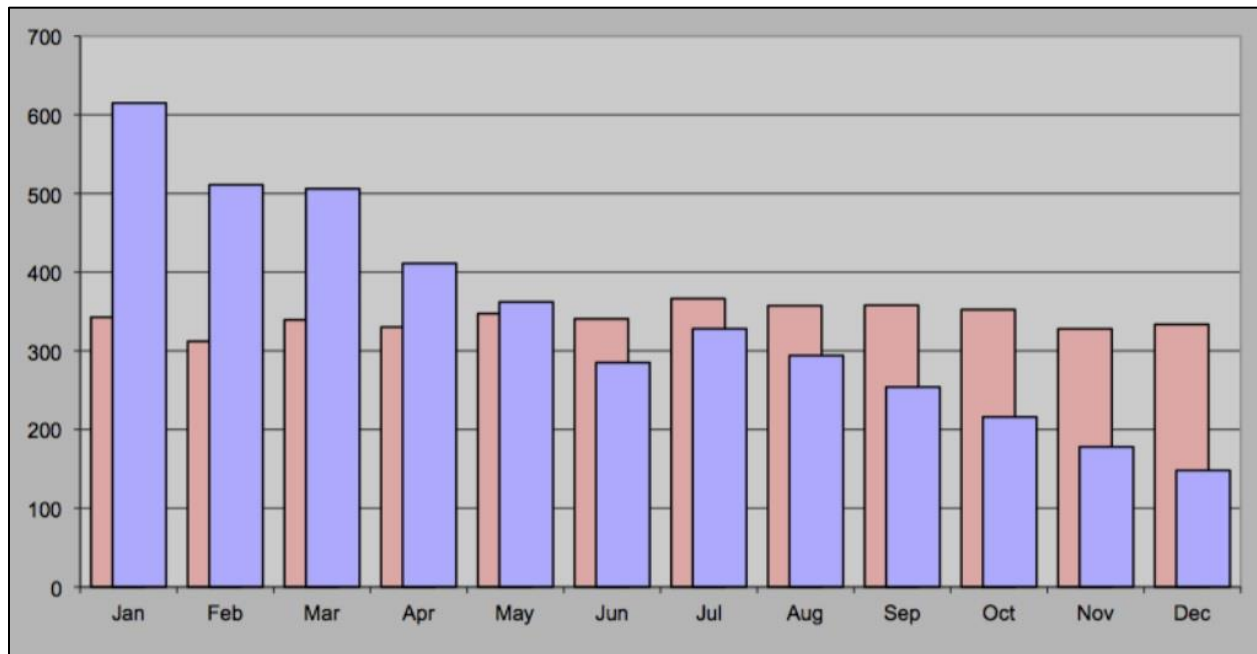
Image by Chemical287 via Creative Commons

Figure 10
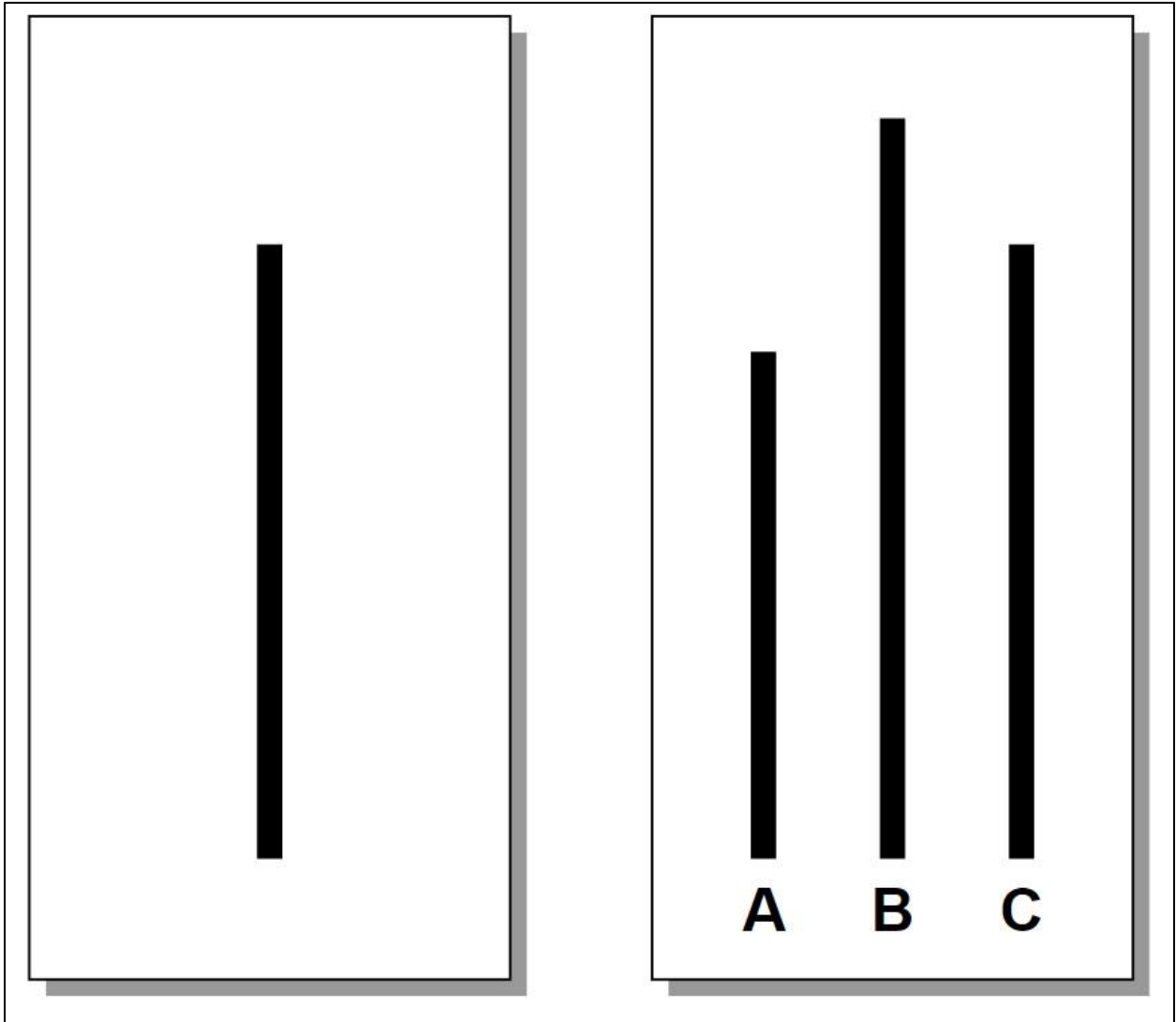
"The Cards Used in the Asch Conformity Experiments" by Fred the Oyster, Creative Commons 4.0 (CC BY-SA 4.0)

Figure 11

The pain of loss is 2X the pleasure from gain

Figure 12

Trader heart rate goes from 60bpm resting to 100bpm on Fed announcement
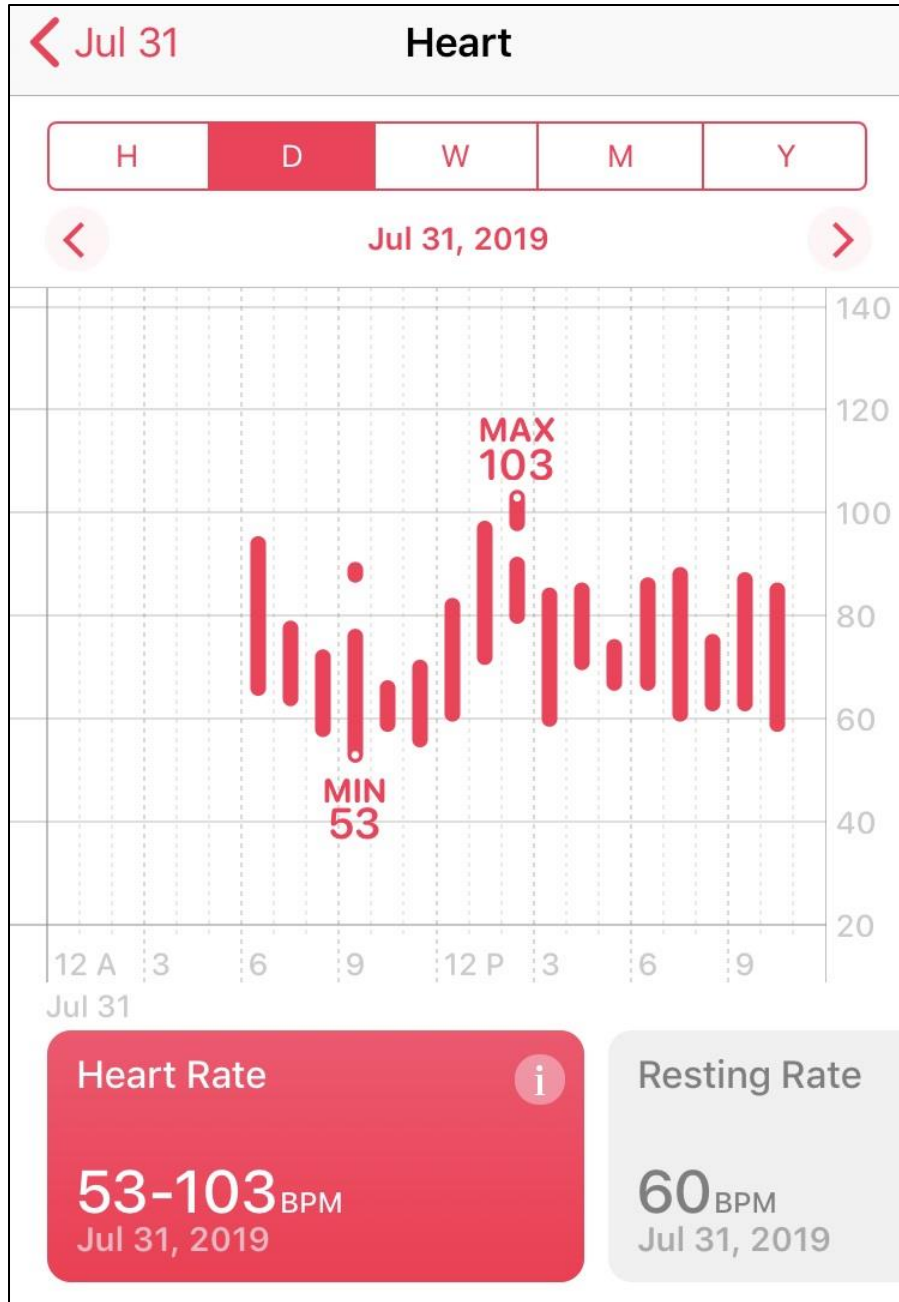
Source: Christina Fusilli's phone

Figure 13

FX is back

Brent yells: "FX is back!" and broker says: "NICE CALL MXN!" ... in the space of 30 seconds
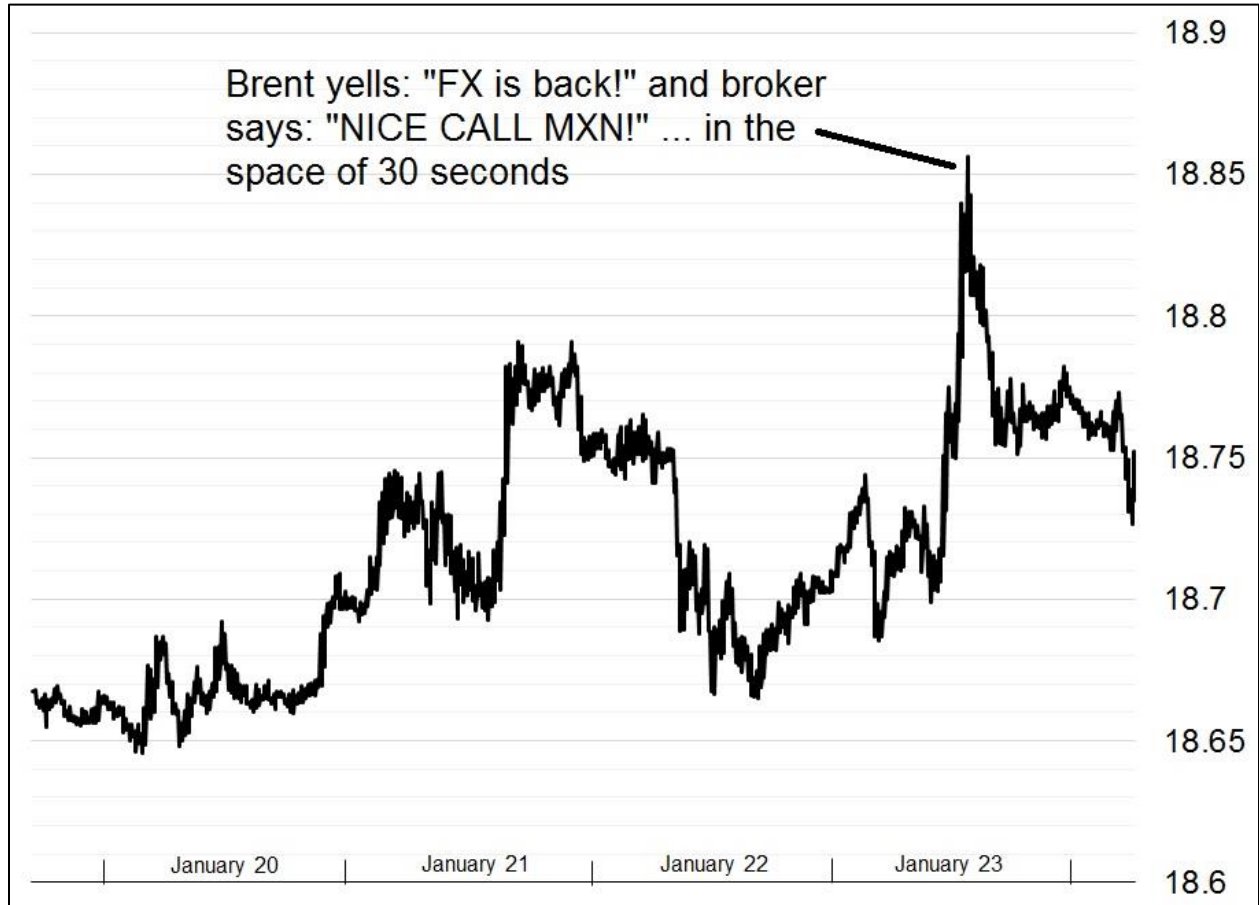
Figure 14

The Hermann Grid Illusion
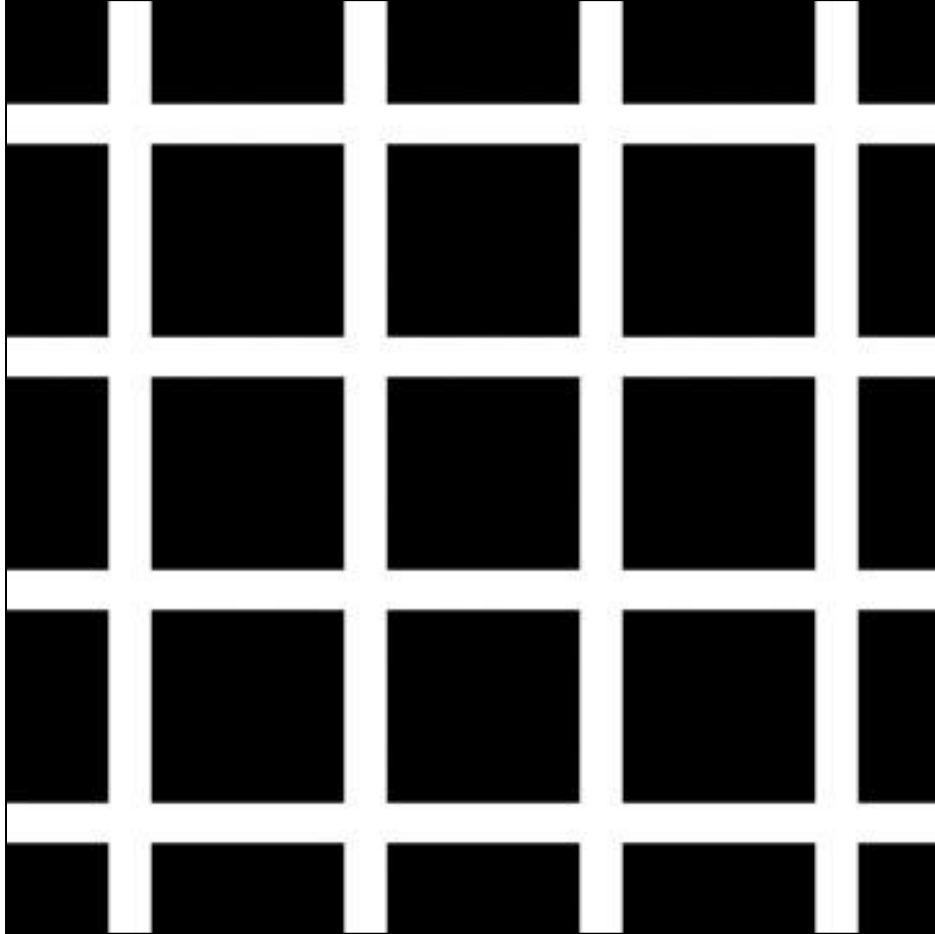
Image: Donnelly

Figure 15

San Francisco celebrates prematurely; their overconfidence soon leads to ruin

Don't do this in the middle of a football game!

Photo by Doug Benc (AP Images)

Figure 16

Average trading profit by calibration quartile
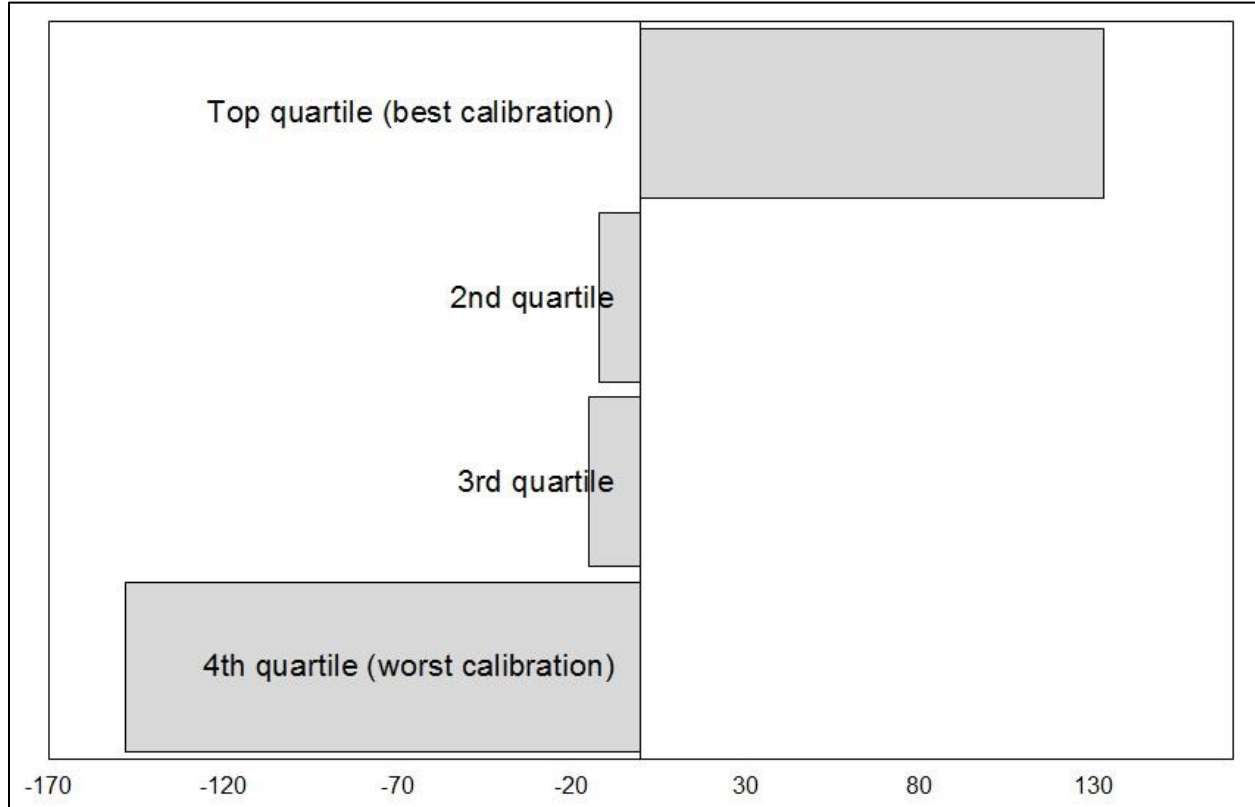
Figure 17

**EURUSD (solid black line, left y-axis) vs.
average analyst EURUSD 12-month forecast (dotted line, right y-axis)**

Figure 18

Greek yields and two major rating agency announcements
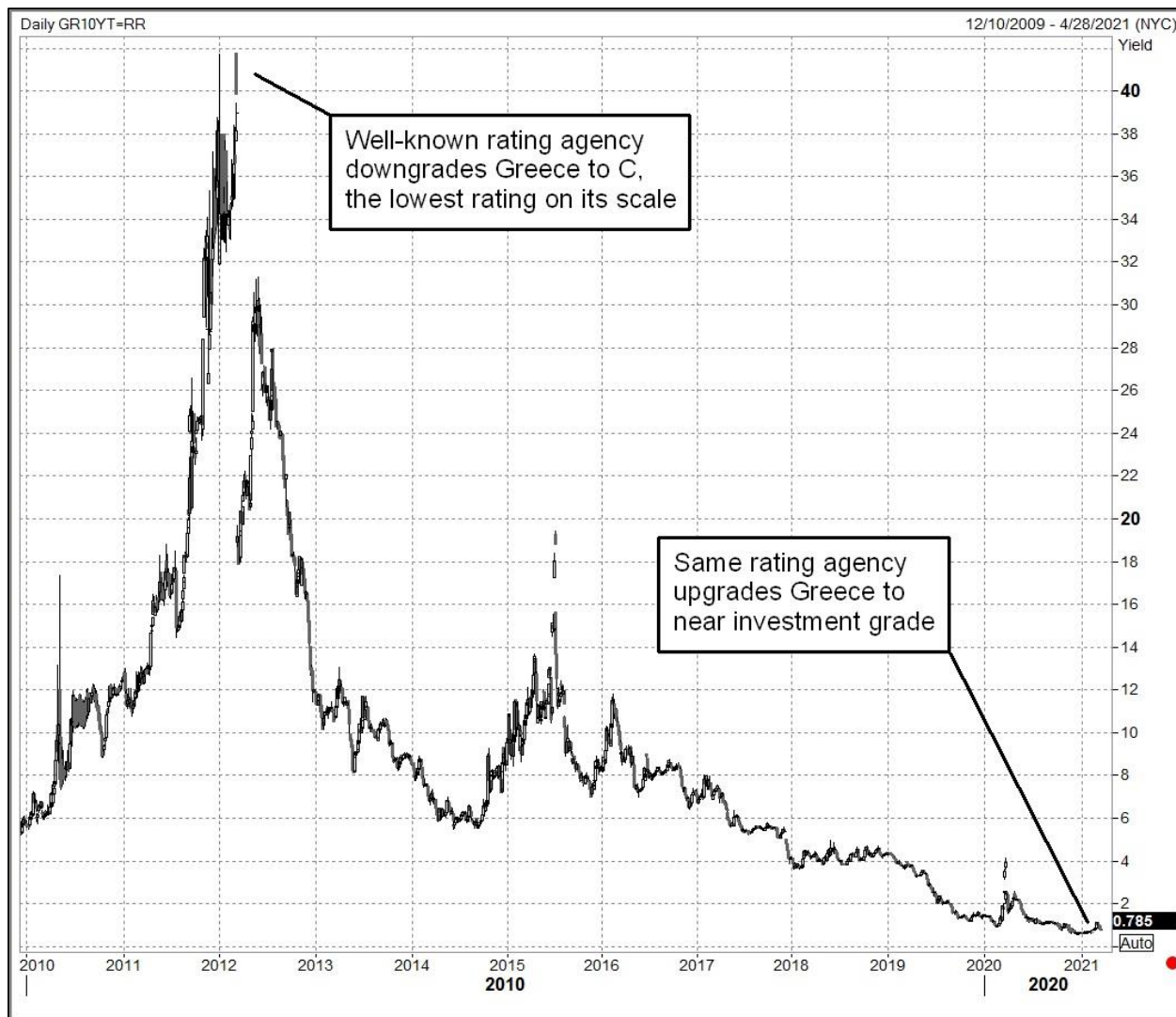
Chart courtesy of Refinitiv

Figure 19

Brent crude (black) vs. analyst year-end 2020 price forecast (gray)

Figure 20

Two unbelievable actions in one short statement
The SNB abandons the 1.20 EURCHF floor and cuts rates to minus 0.75!

Press release

SCHWEIZERISCHE NATIONALBANK
BANQUE NATIONALE SUISSE
BANCA NAZIONALE SVIZZERA
BANCA NAZIUNALA SVIZRA
SWISS NATIONAL BANK

Communications

P.O. Box, CH-8022 Zurich
Telephone +41 44 631 31 11
communications@snb.ch

Zurich, 15 January 2015

Swiss National Bank discontinues minimum exchange rate and lowers interest rate to −0.75%

Figure 21

Figure 1: The rate of return on win bets declines as risk increases.

The Favorite–Longshot Bias

Sample: US Horse Races, 1992–2001
- ×   Raw data: Aggregated into percentiles
- ——   All Races
- ——   Subsample: Exotic betting data available
- – – –   Subsample: Last Race of the Day

Rate of Return per Dollar Bet (%)

Odds (Log Scale)
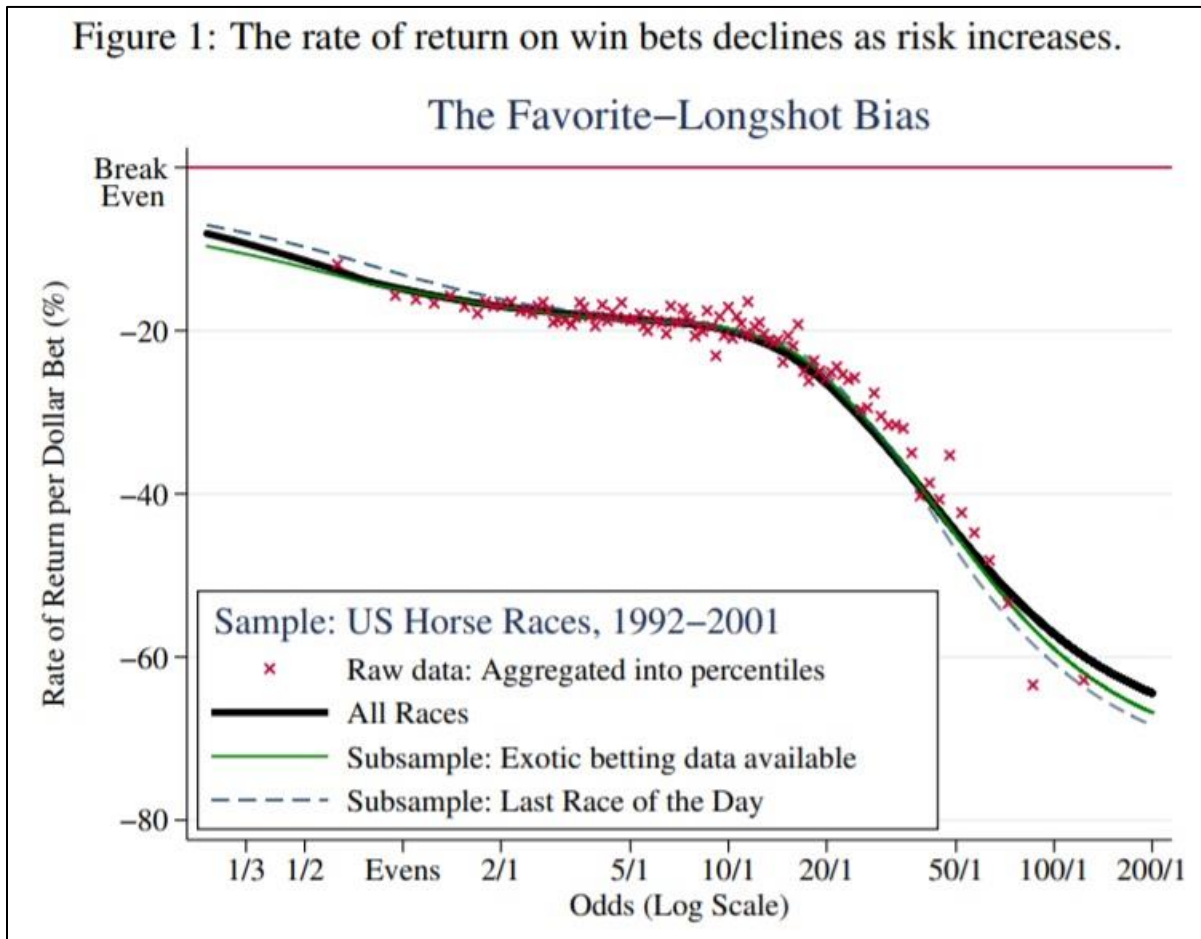
Figure 22

Actual probability vs. human estimates of probability
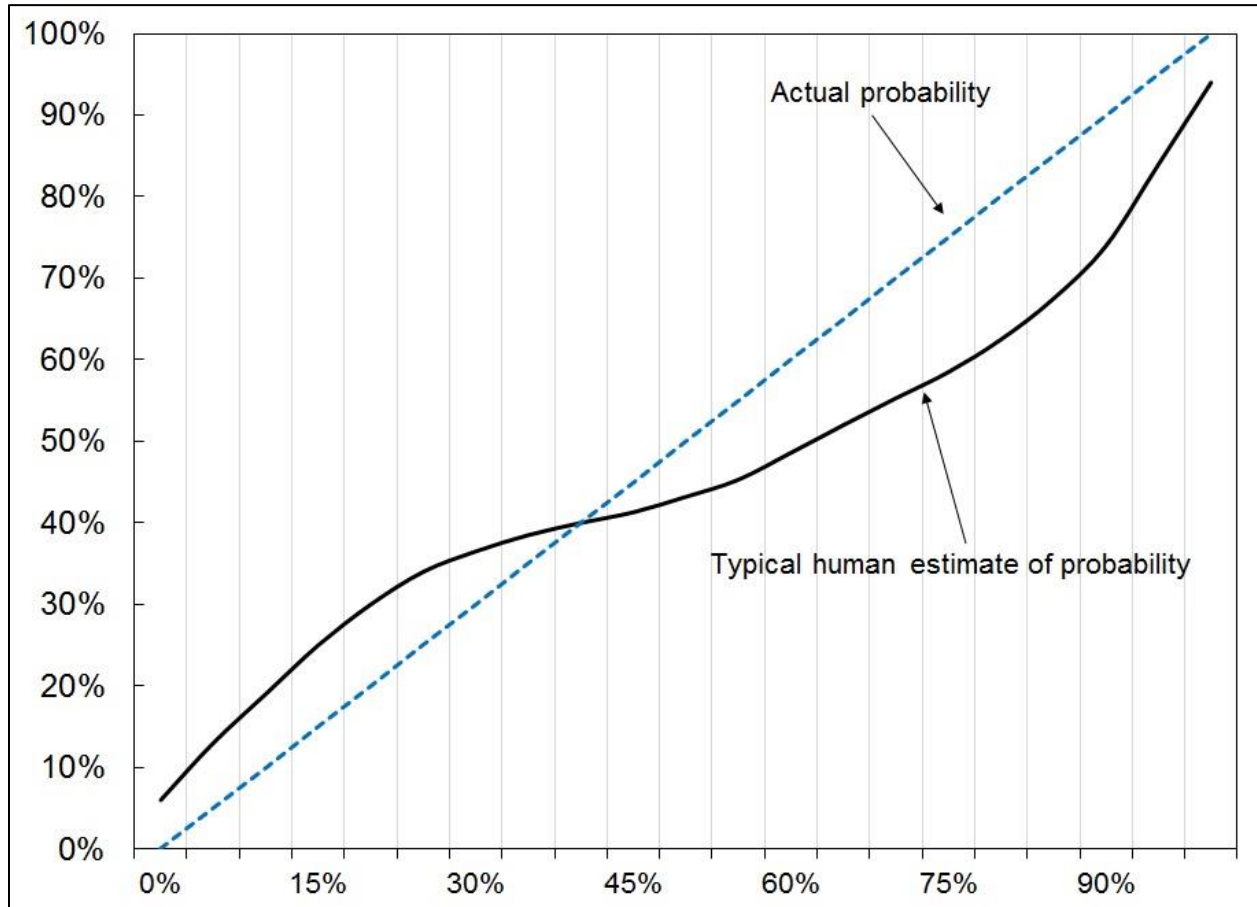
Various estimates put the cross-over point around 35%/40%

Figure 23

AUDUSD 5-minute chart around the February 2020 RBA meeting
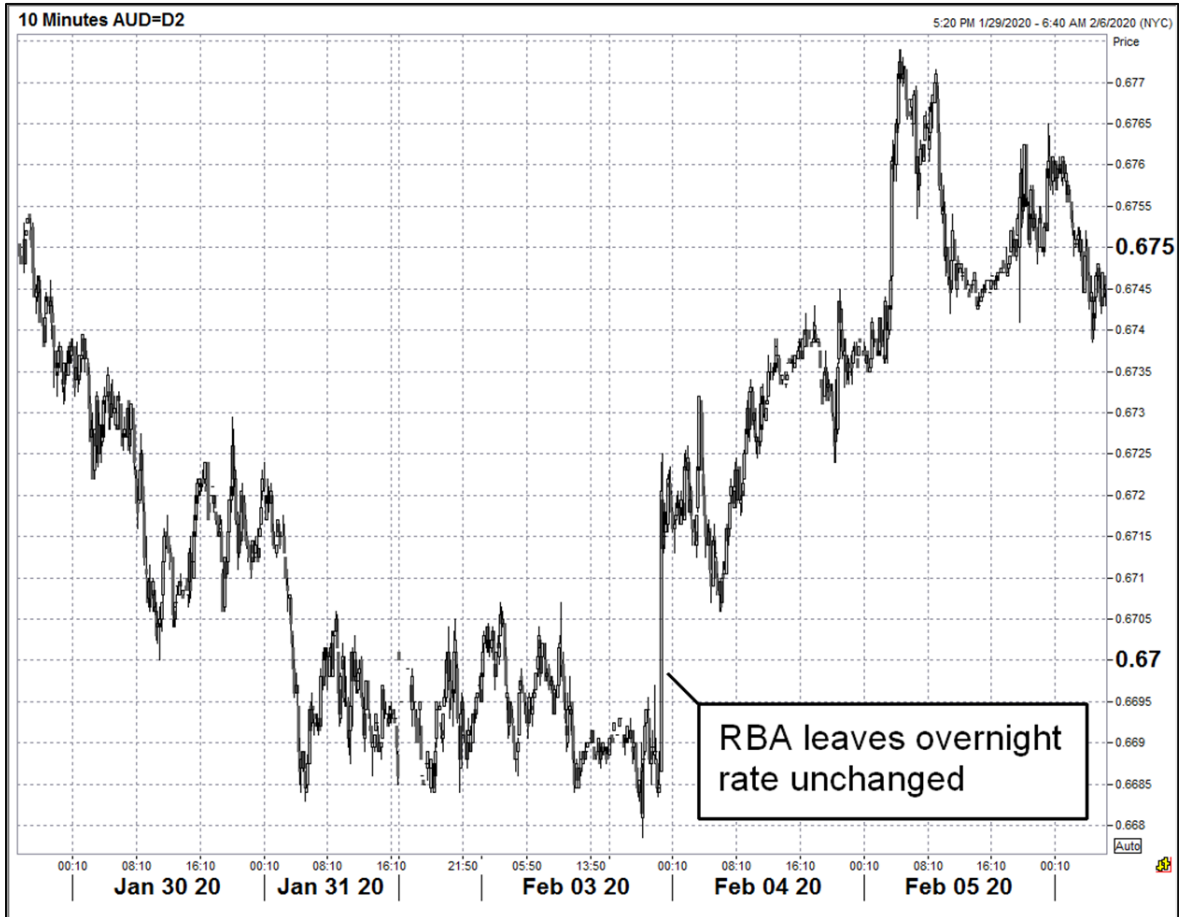
Chart courtesy of Refinitiv

Figure 24

Analyzing Short AUDUSD into the RBA: February 2020

Table 1: ex-ante
An estimate of expected value, before the event

	Probability	profit/loss	
RBA Cut	10%	100	10.0
RBA No Cut	90%	-5	(4.5)
Expected Value of the Trade			5.5

Table 2: ex-post
Same expected value calculation, but adjusted for new information after the event

	Probability	profit/loss	
RBA Cut	10%	100	10.0
RBA No Cut	90%	-30	(27.0)

Figure 25

**Distribution of daily highs and lows in TSLA
(by the cents, or last two digits of the price)**
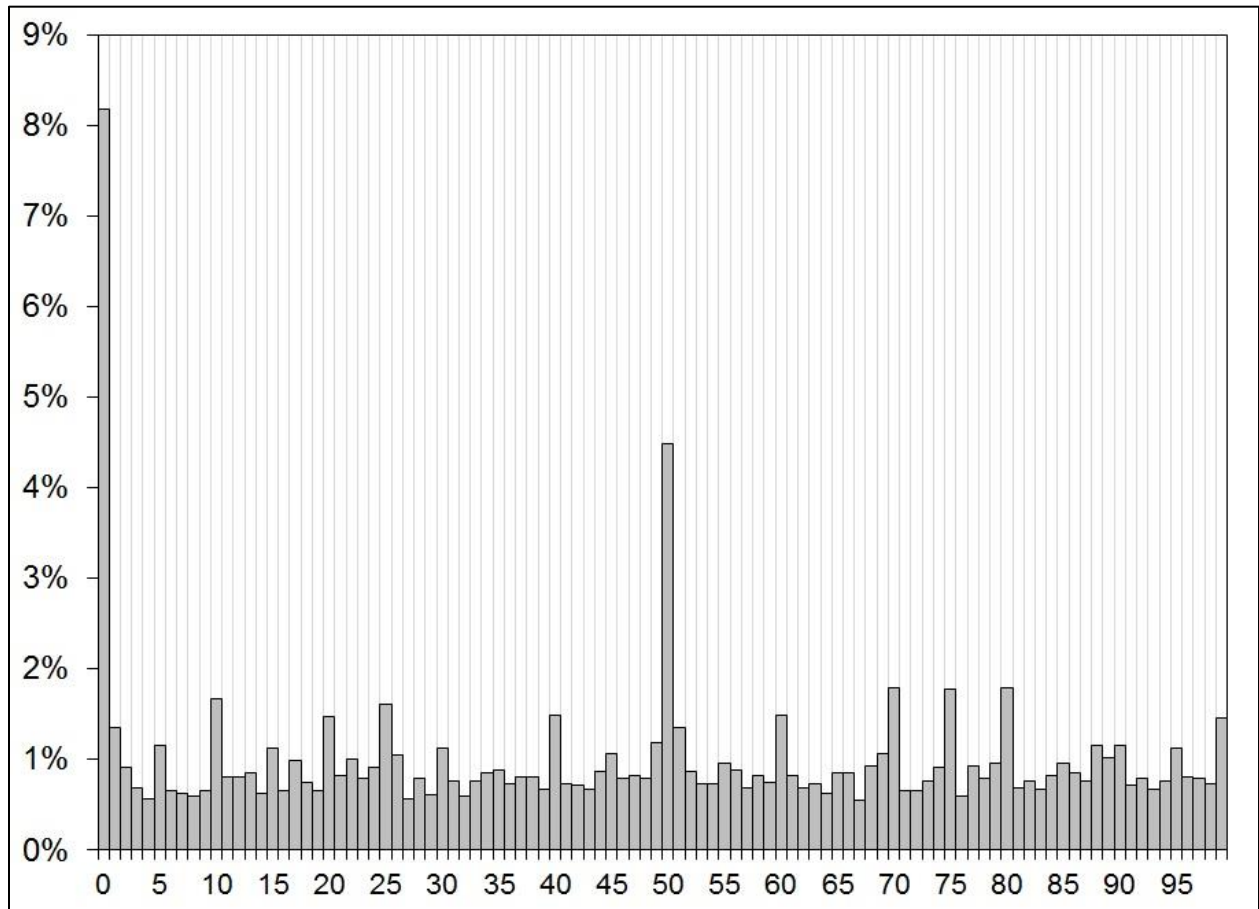
Figure 26

**Distribution of daily highs and lows in NFLX
(by the cents, or last two digits of the price)**
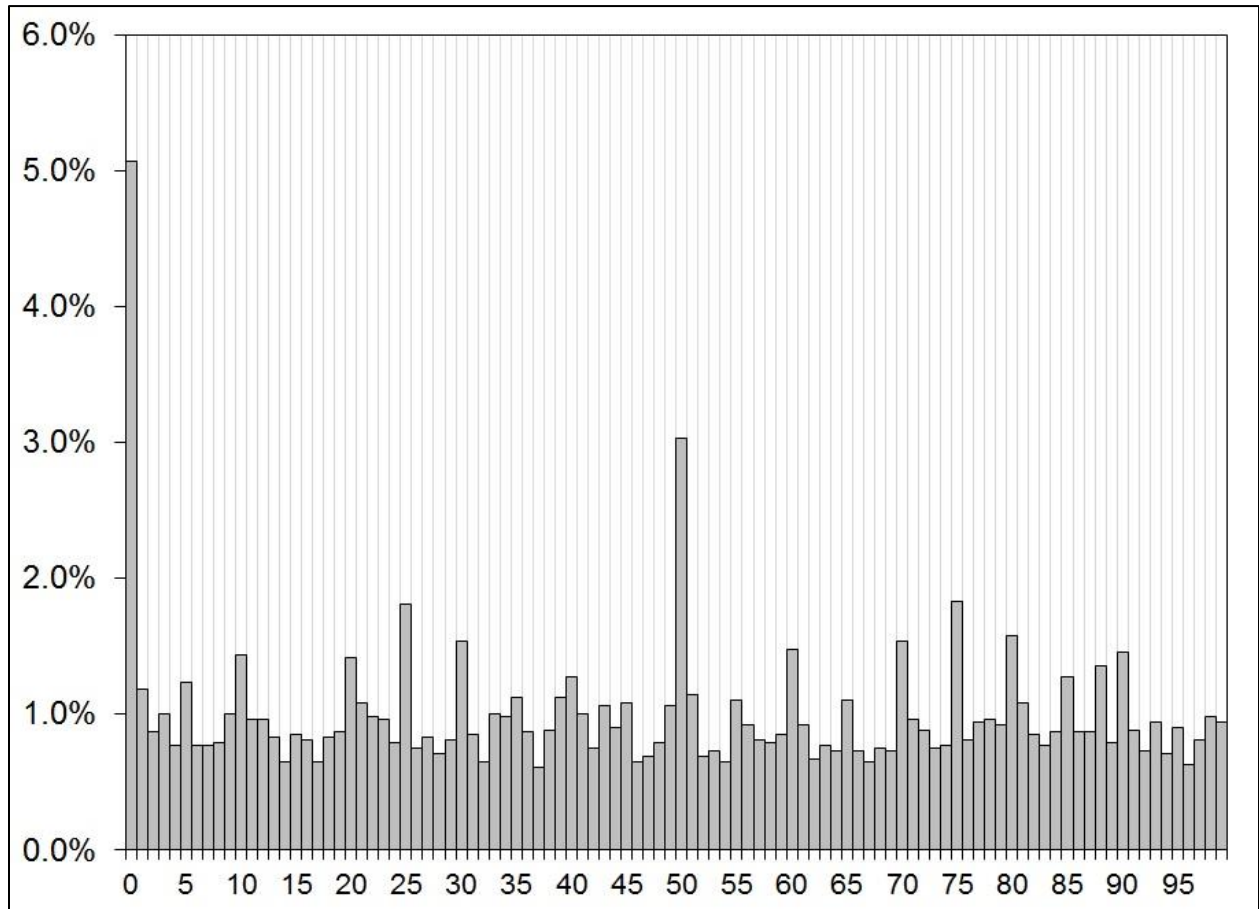
Figure 27

USDJPY performance after two conditions met (sample = 49)

	t+1	t+3	t+5	t+10	t+20
Average return	-0.1%	-0.3%	-0.6%	-0.9%	-0.5%
% of time USDJPY goes down	56%	55%	63%	63%	65%

Two conditions: USDJPY up >1% in past 5 days and US 10-year yield down >7 bps in past 5 days

Figure 28

USDJPY Hourly, April to July 2020

Chart courtesy of Refinitiv

Figure 29

Total cumulative performance of Tuesdays (solid line) vs. rest of the week in 2008
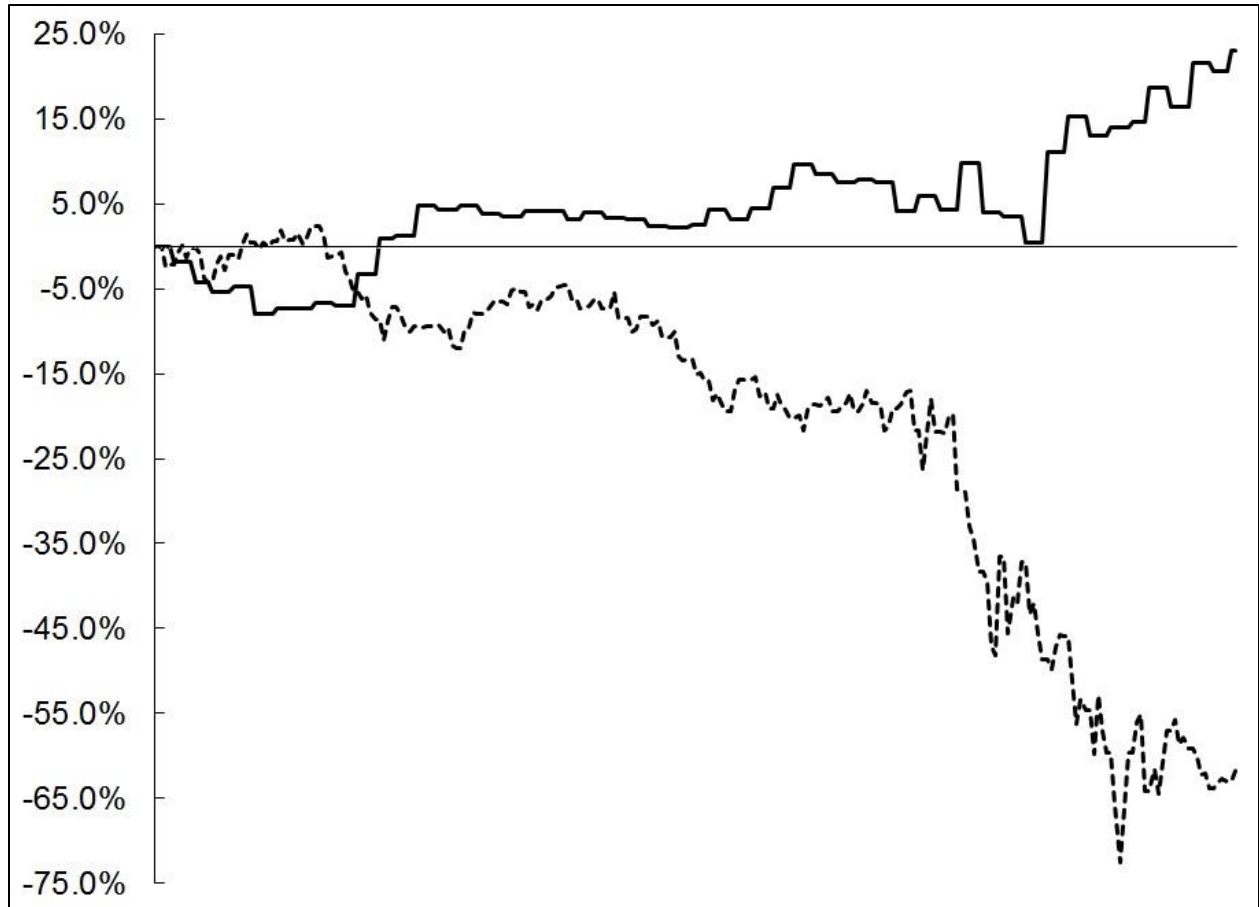
Image: Donnelly, with data from Refinitiv

Figure 30

It's funny, but he's also kind of not joking

Dave Portnoy
@stoolpresidente

A lot of people are asking me if Airlines and Cruises will go up tomoroew. My answer is see tenet #1 of the #DDTG playbook

1. Stocks only go up
2. When in doubt whether to buy or sell see Rule #1

3:03 PM · Jun 7, 2020

♡ 6.4K   ⬭ 821 people are Tweeting about this

Figure 31

The typical path followed by the common stock of a bankrupt company
Crumbs Bake Shop common stock: They were selling a million cupcakes a month in 2011
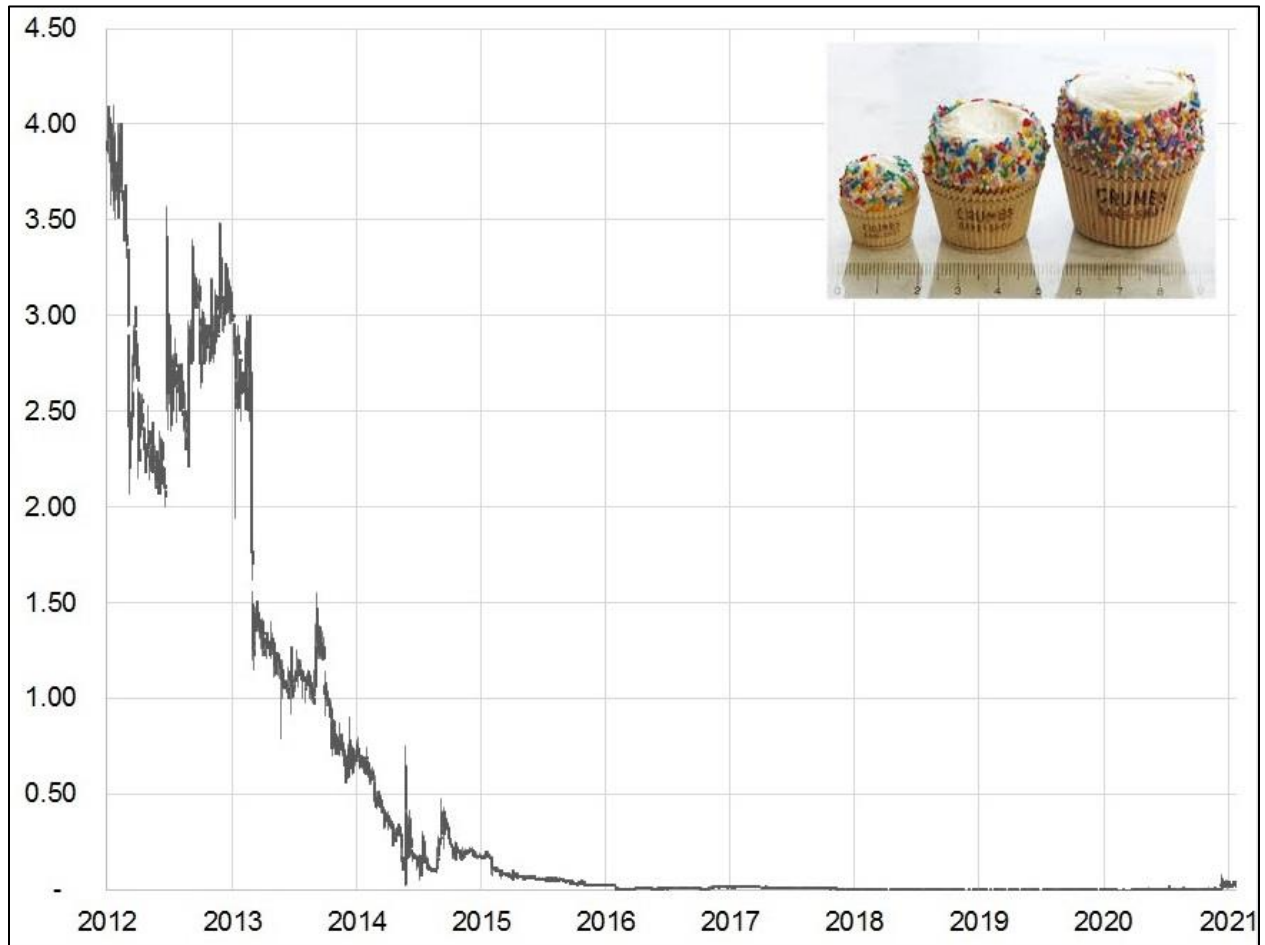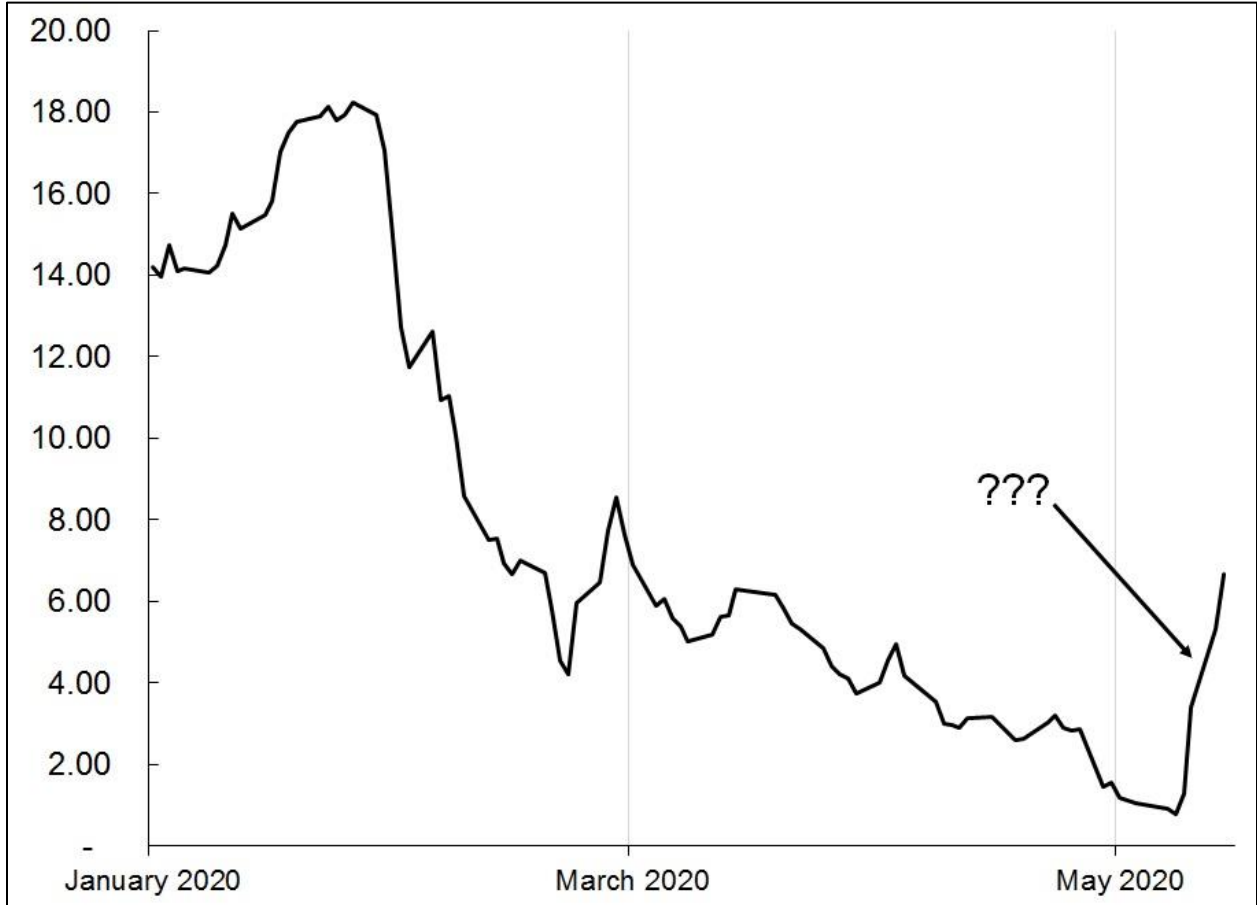
Figure 32

HTZ rallies from 41 cents to $6

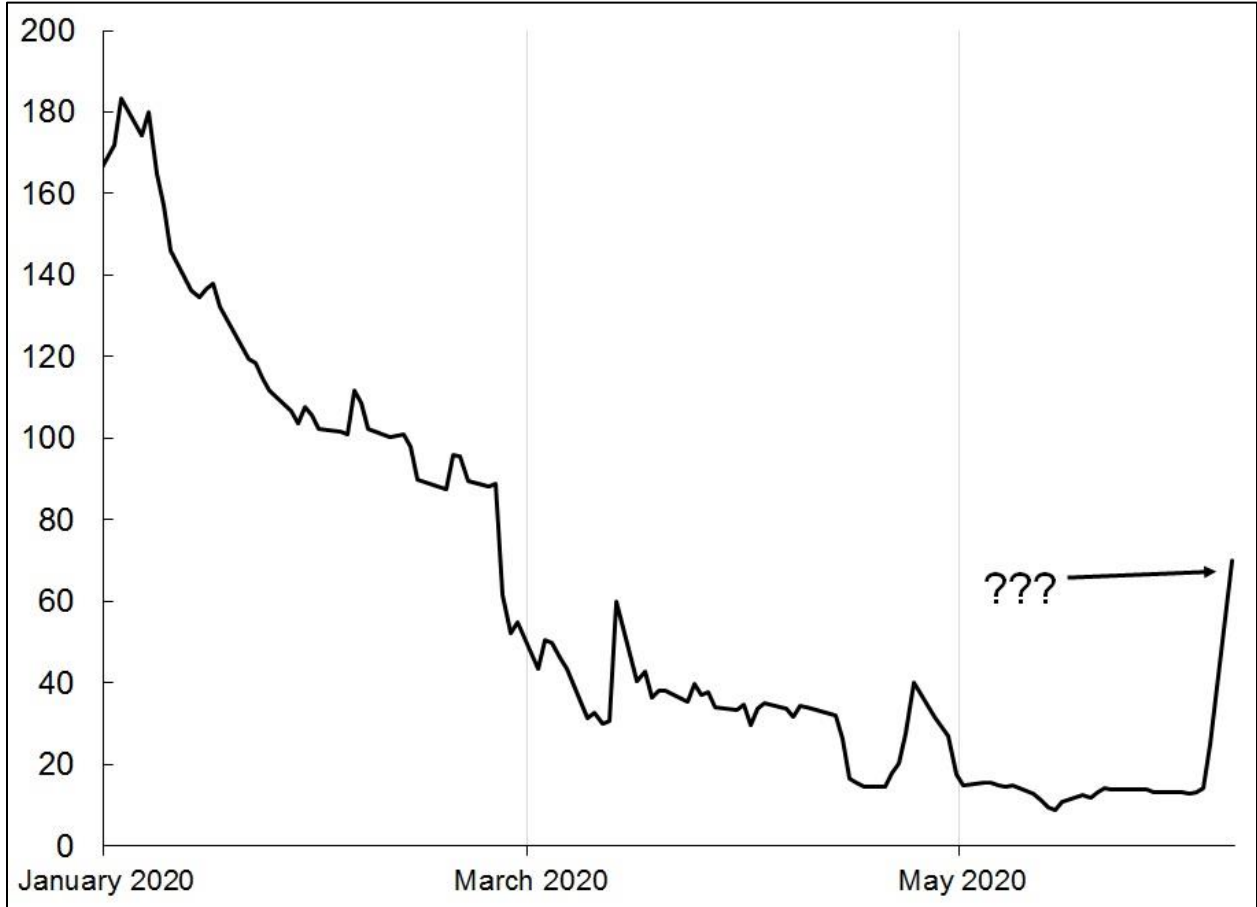# Figure 33

CHK rallies from $7.77 to $77.50

Figure 34

Chart of something that goes down 20%, up 20%, down 20%, up 20%...
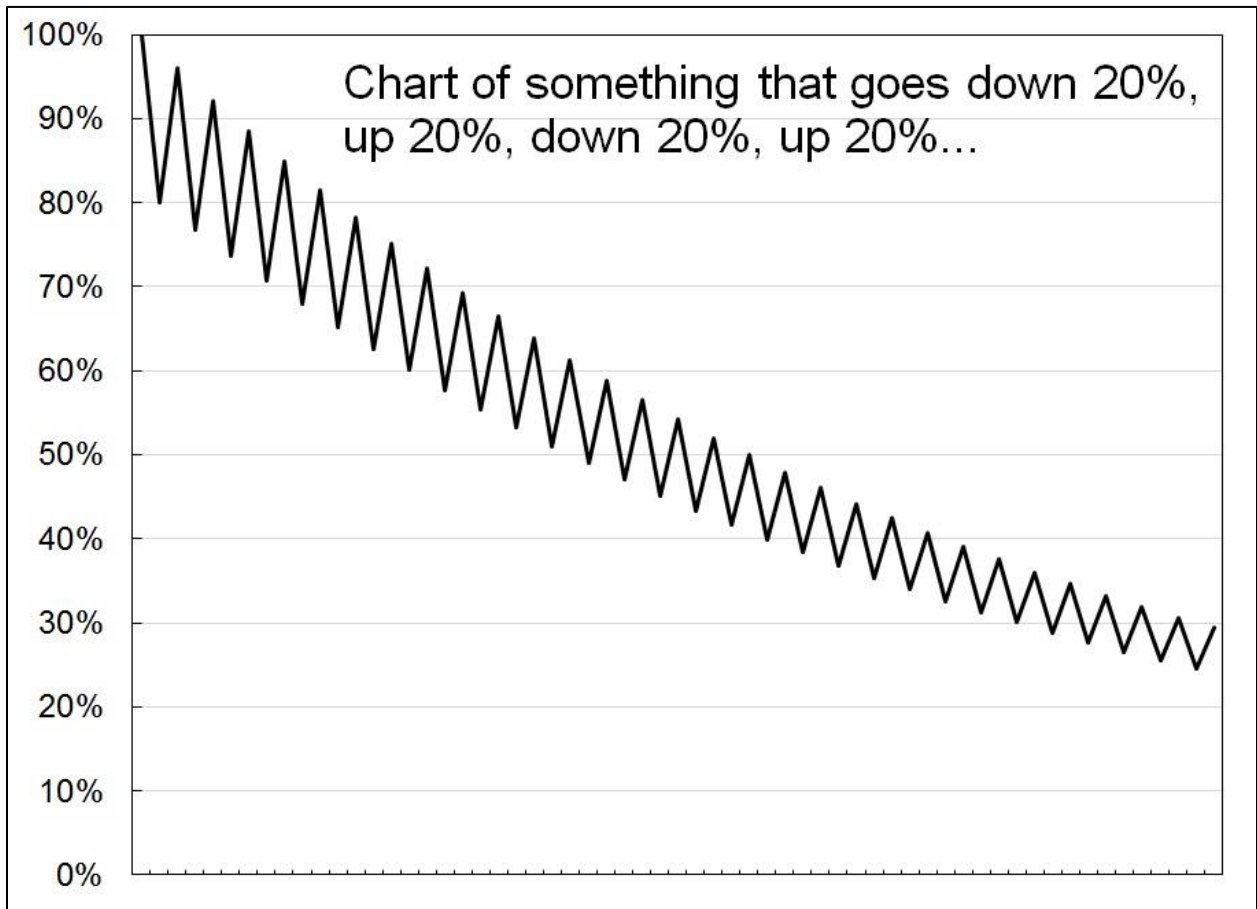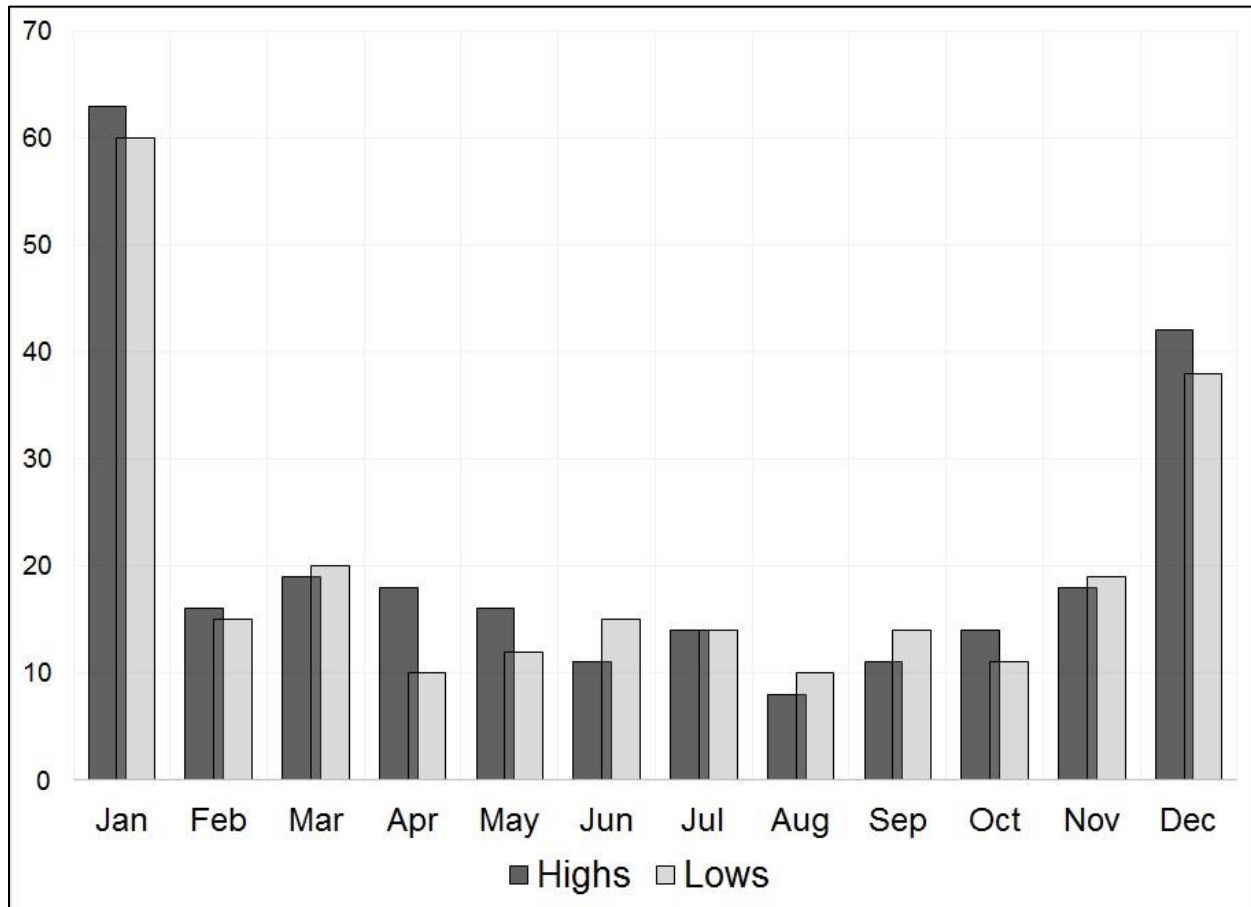
Figure 35

Annual Highs and Lows by the month they are set (1980-2017)
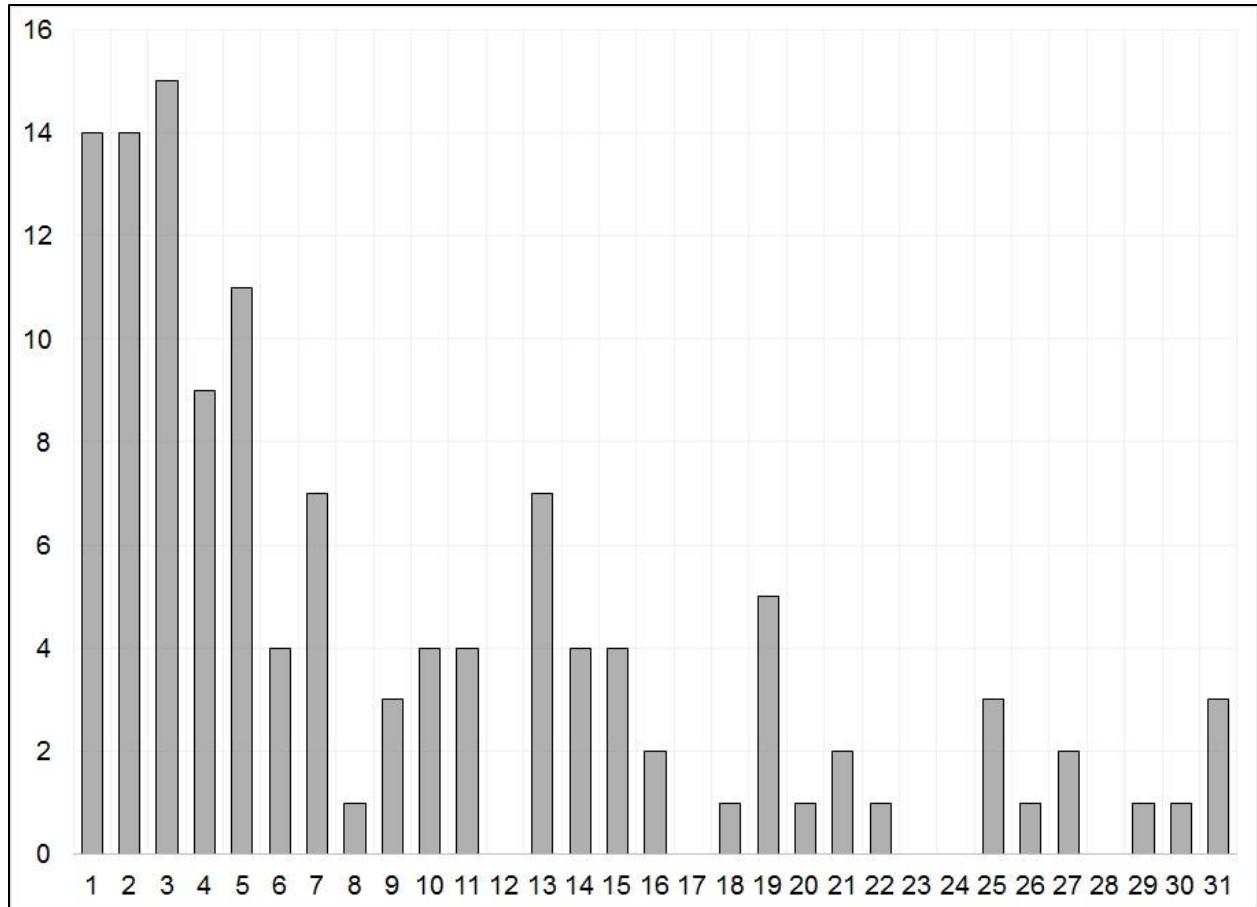

EURUSD USDJPY USDCAD NZDUSD AUDUSD USDCHF and GBPUSD

y-axis shows sum of how many times it happened

Figure 36

If a currency pair makes year high or low in Jan., what day does it happen?

Y-axis is number of occurrences.

1980 to now. Synthetic EUR used for EUR pre-1999

Figure 37

If a currency pair makes its year high or low in Dec., what day does it happen?
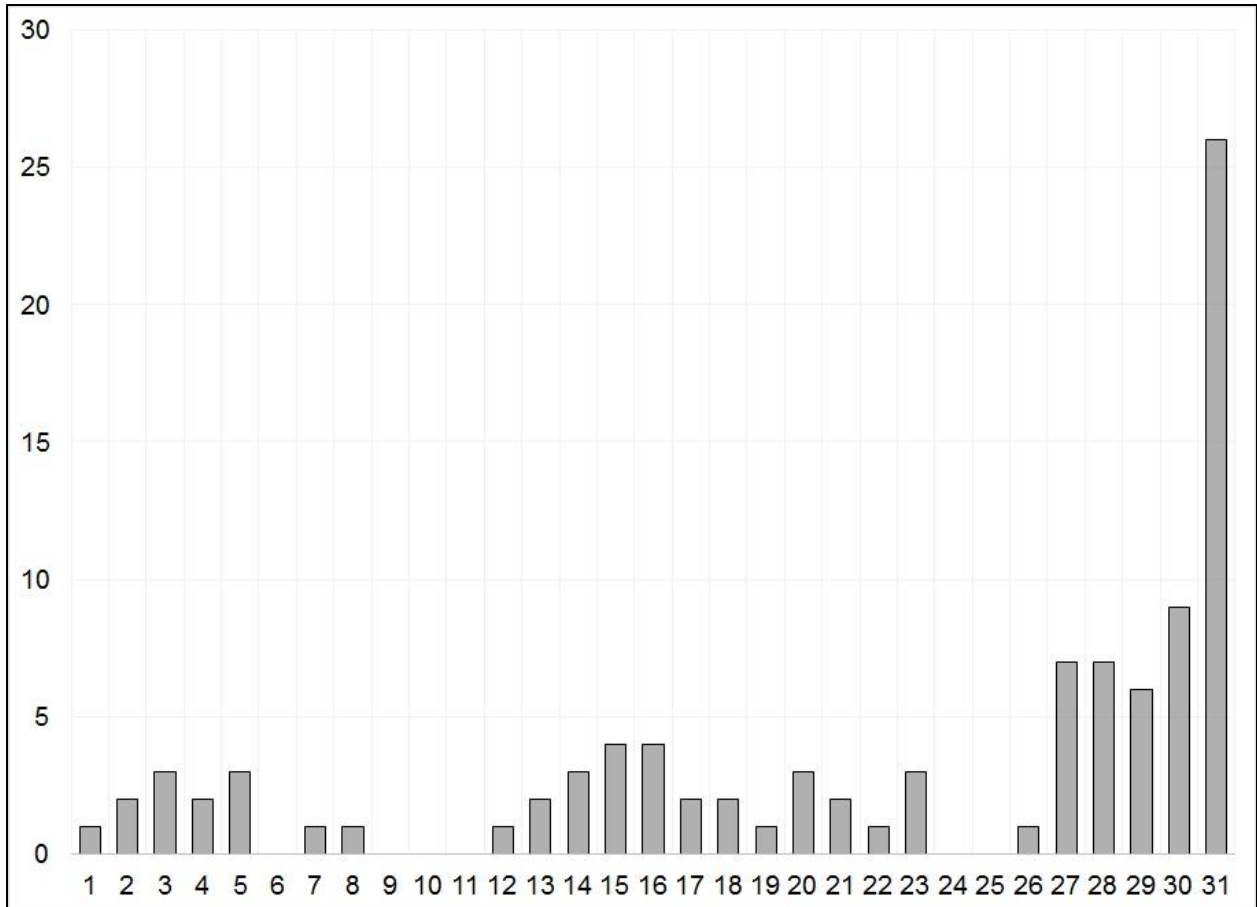
Figure 38

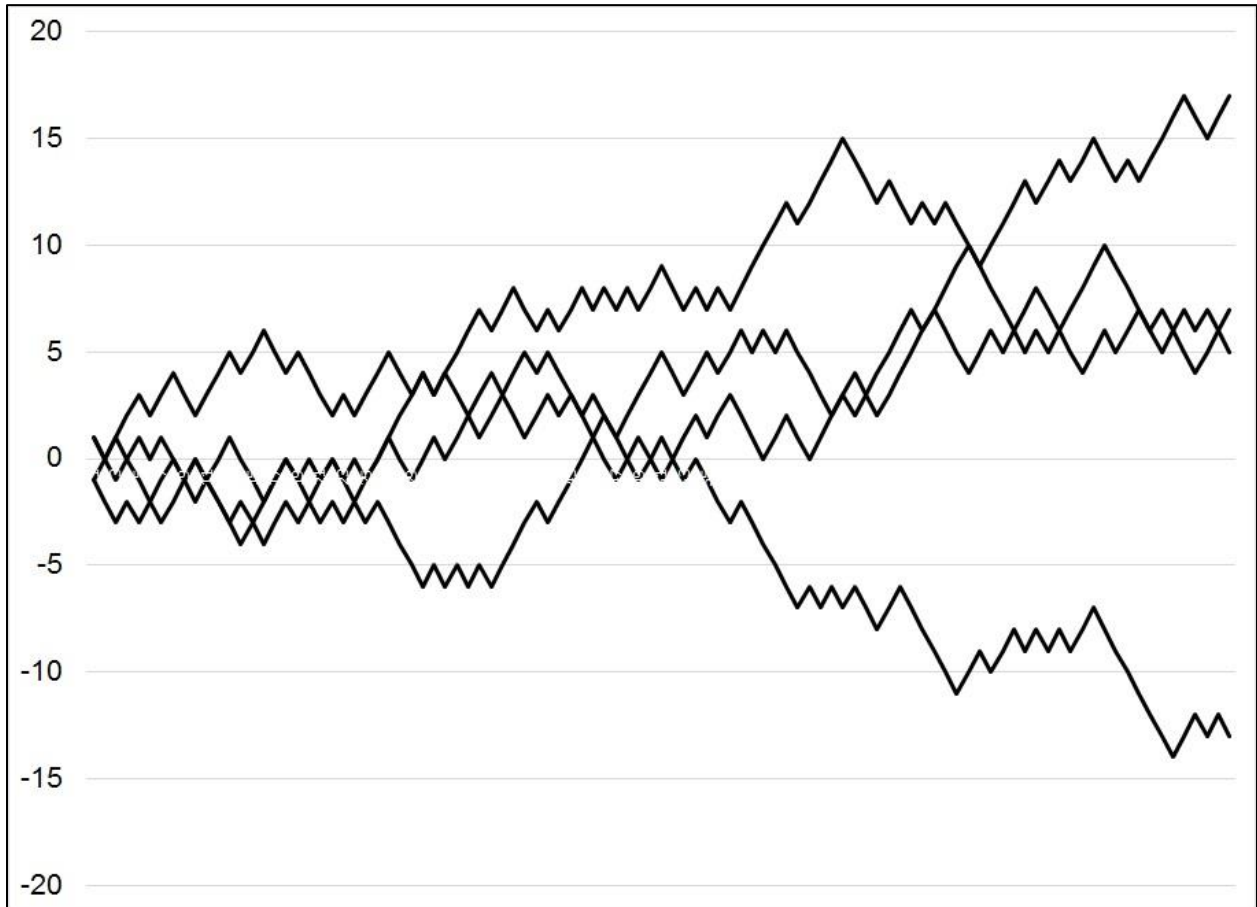## Cumulative sum of heads (+1) and tails (-1) over four simulations

Figure 39

Probability of two matching birthdays vs. number of people in a room

Figure 40

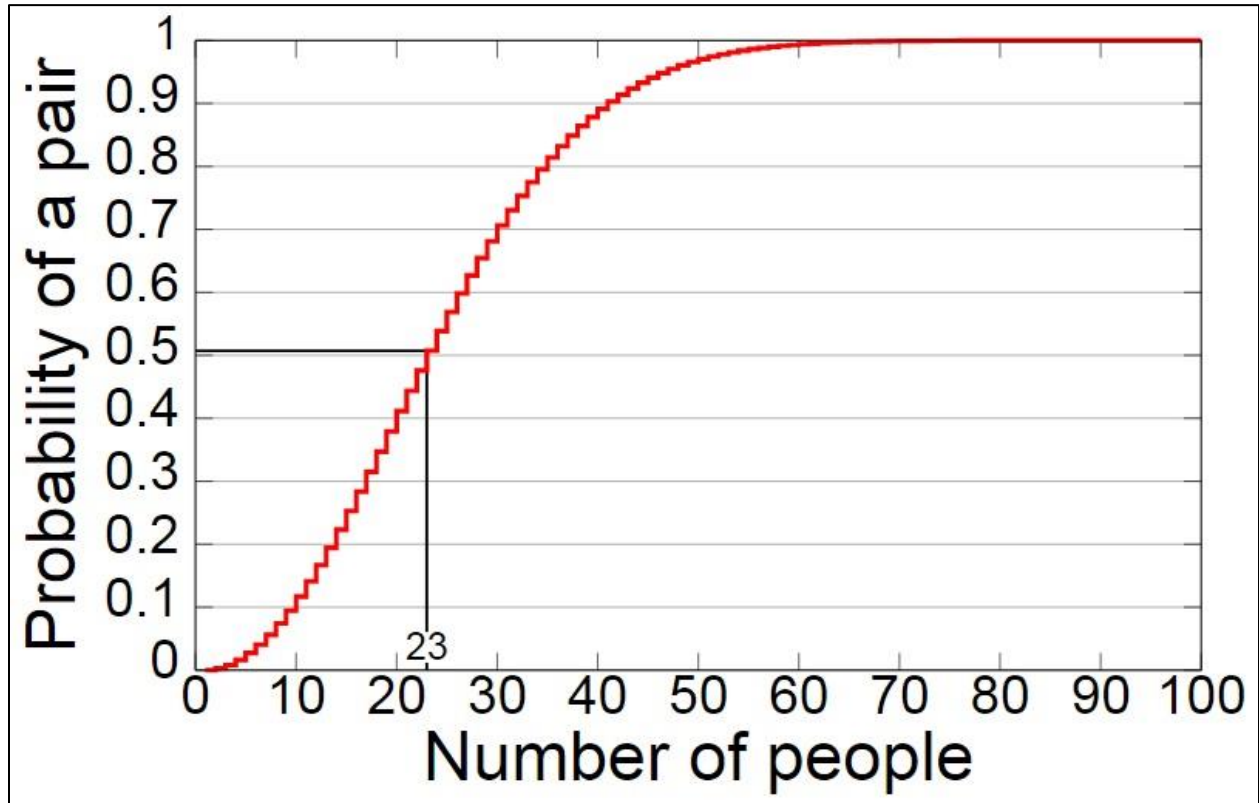**10 simulations of a 48%/52% game where you win or lose $1**
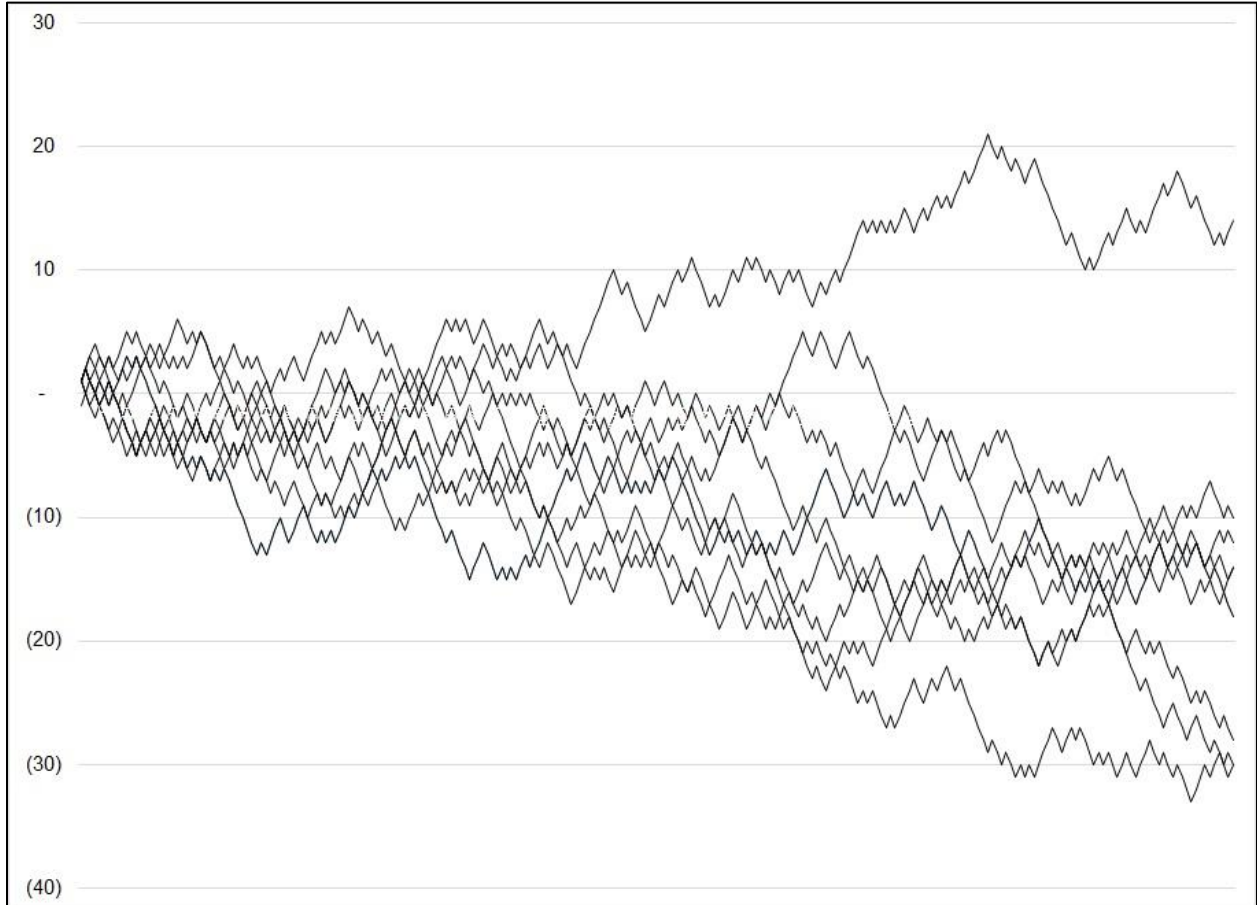
250 trials (that is, the game is played 250 times in each simulation)

Figure 41

Distribution of bullet holes in damaged US fighter planes
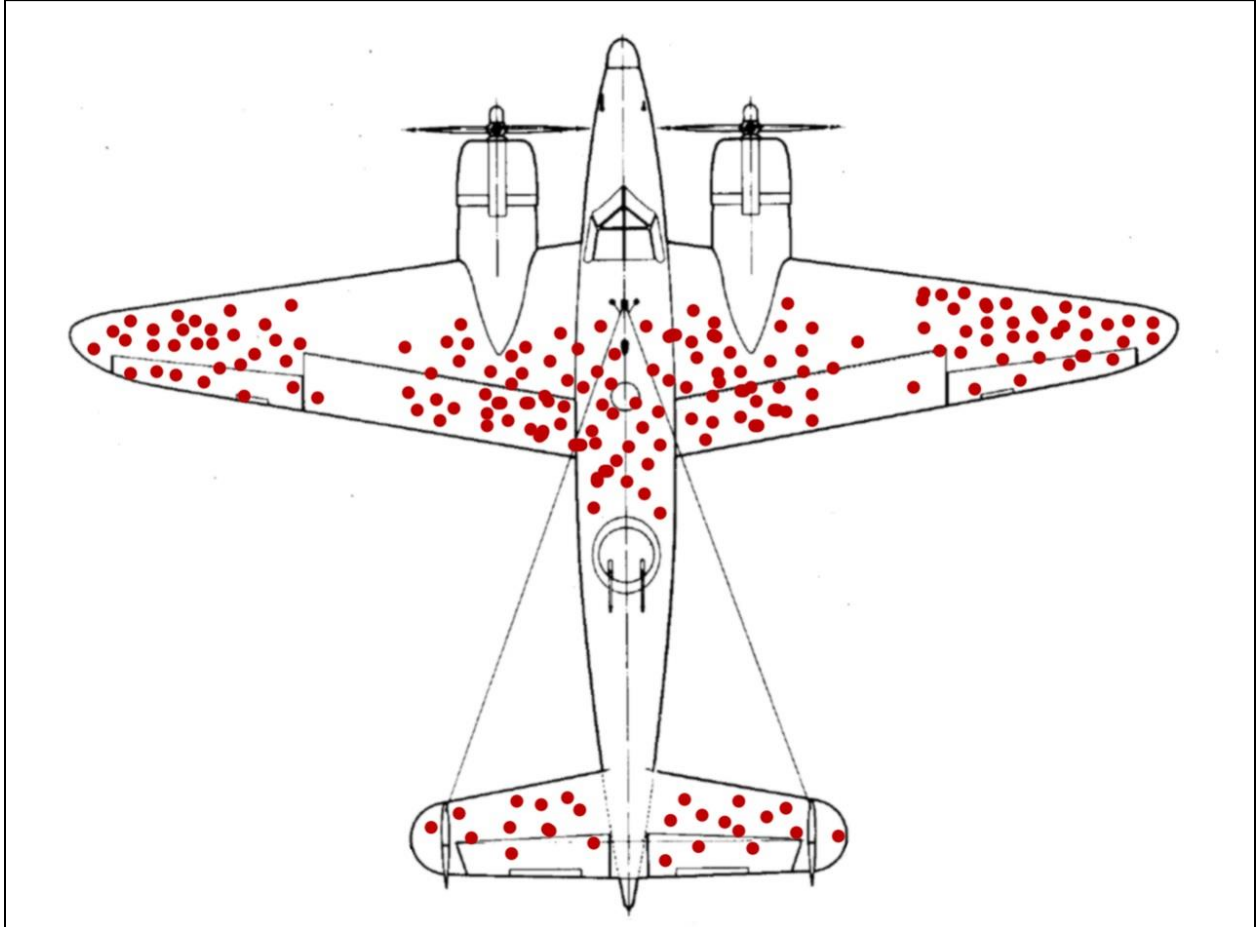
By McGeddon - Own work, CC BY-SA 4.0

Figure 42

Total return of stocks (black) and bonds (gray), January 2010 to October 2020
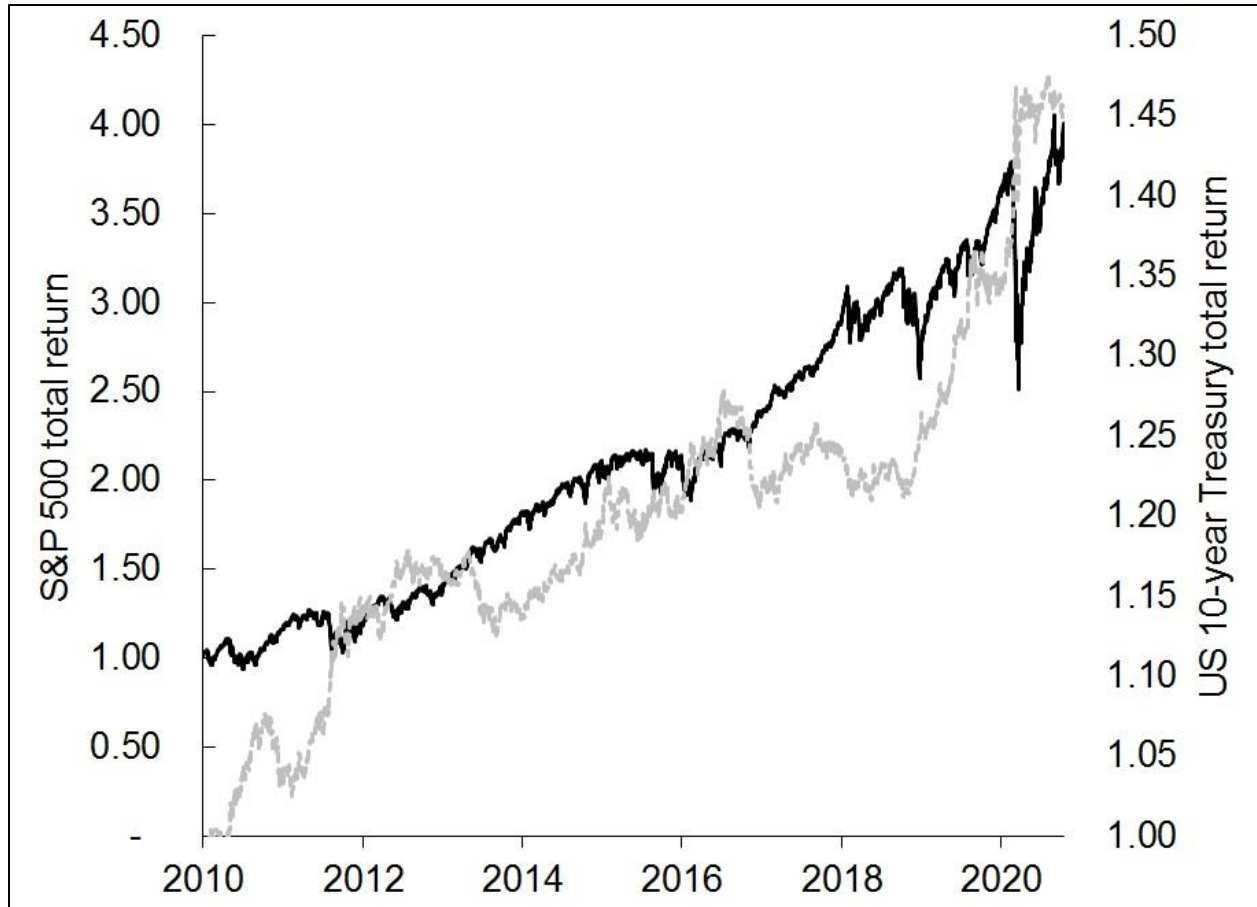
Figure 43

Weekly performance of gold in weeks where S&P 500 dropped 5% or more (since 1990)

Figure 44

S&P 500 since World War II (log chart)

Chart courtesy of Refinitiv

Figure 45

P&L simulation 1 for a day trader who turns over 3,500 shares per day
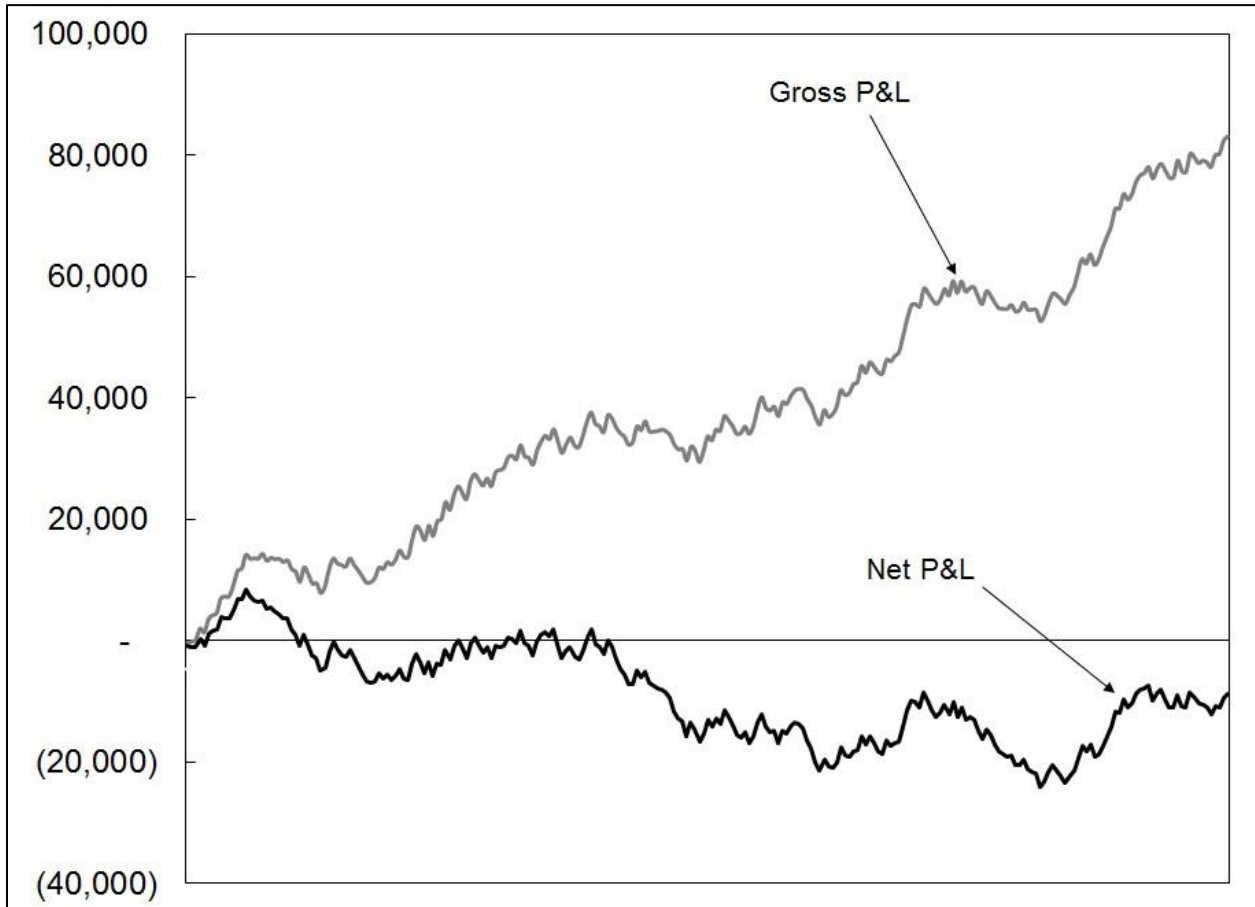
Average bid/offer spread is 10 cents. Zero commission. She trades 252 days per year.

Her average up day is +$3,000, her average down day is -$2,000 and her WIN% is 50%

Figure 46

P&L simulation 2 for a day trader who turns over 3,500 shares per day
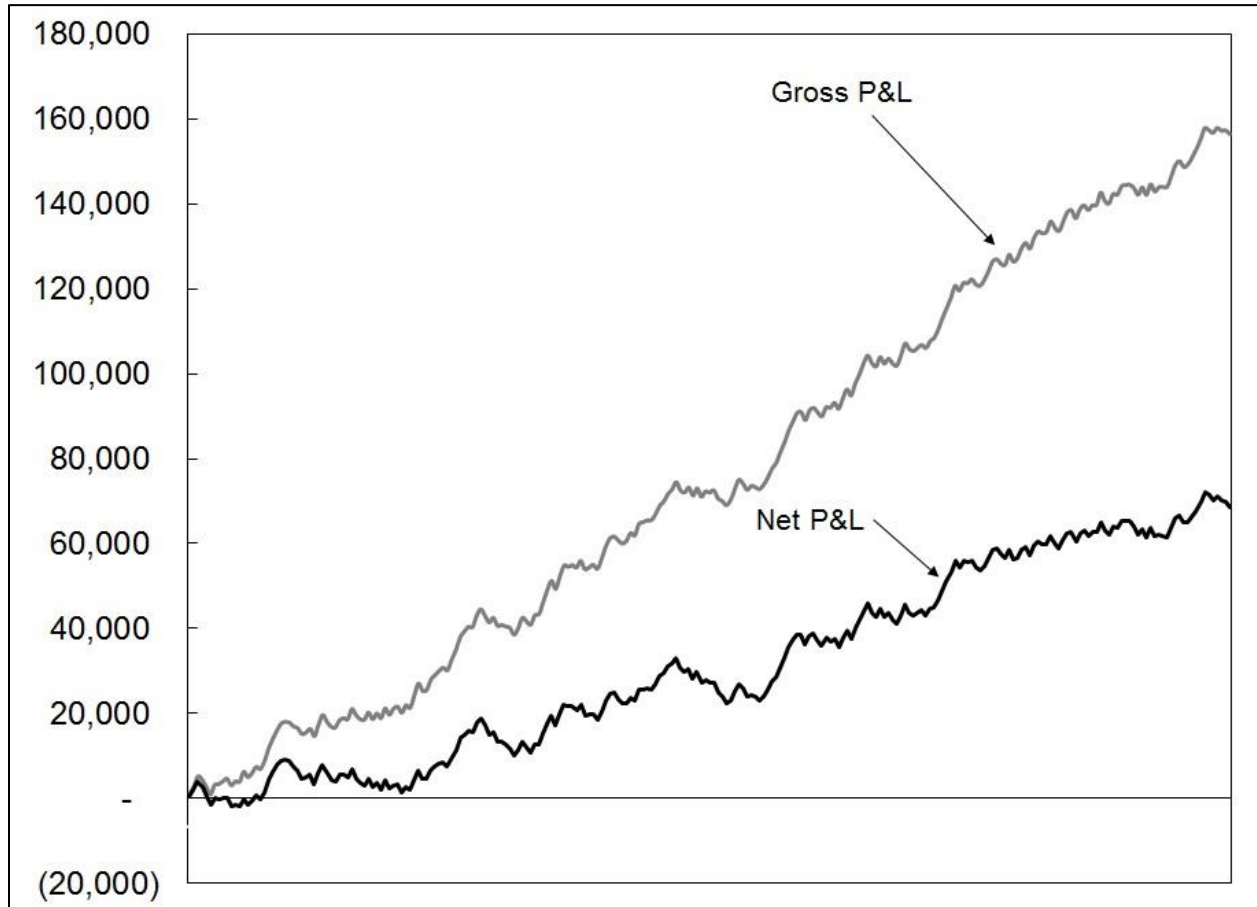
Average bid/offer spread is 10 cents. Zero commission. She trades 252 days per year.

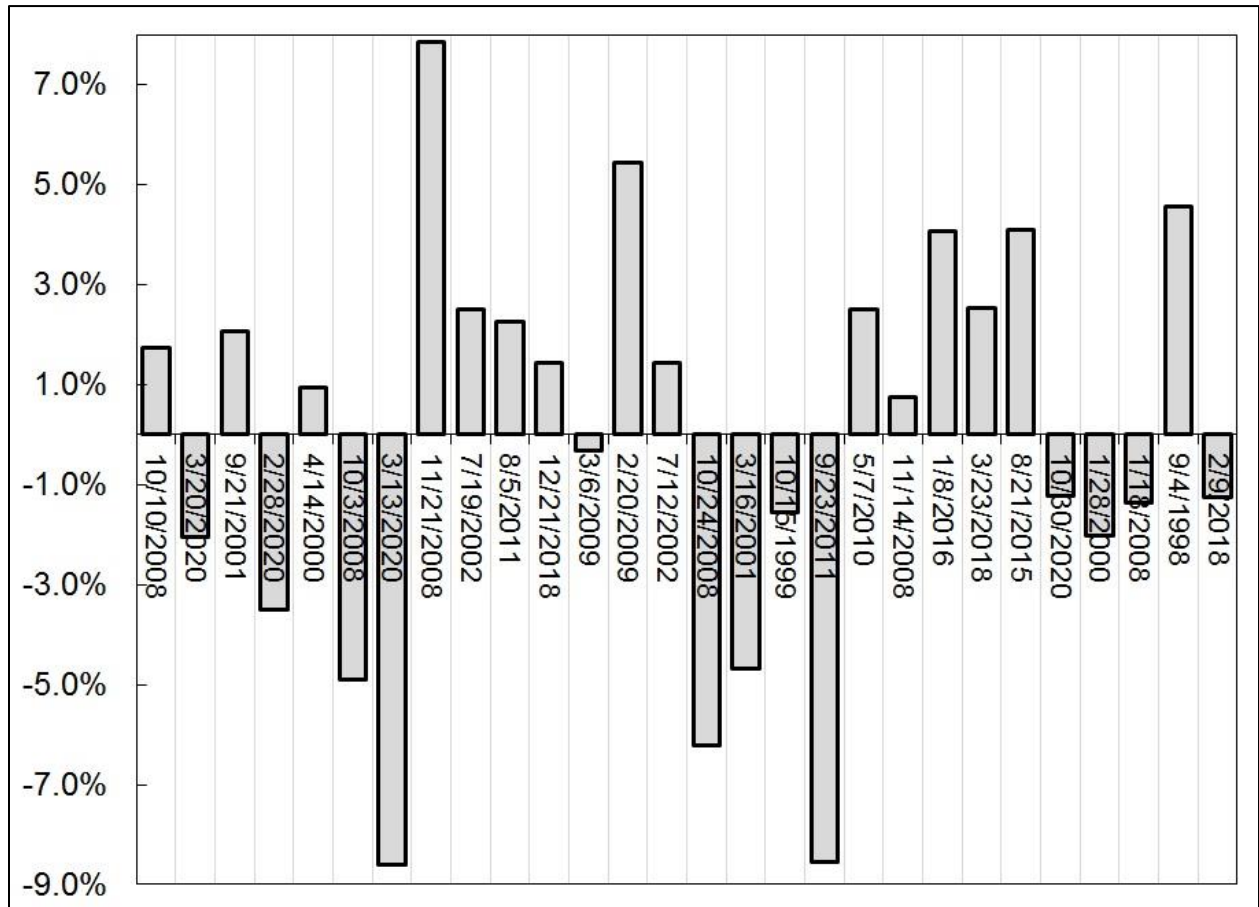Her average up day is +$3,000, her average down day is -$2,000 and her WIN% is 50%

Figure 47

P&L simulation 1 for an FX trader doing 15 trades of $10 million each, per day
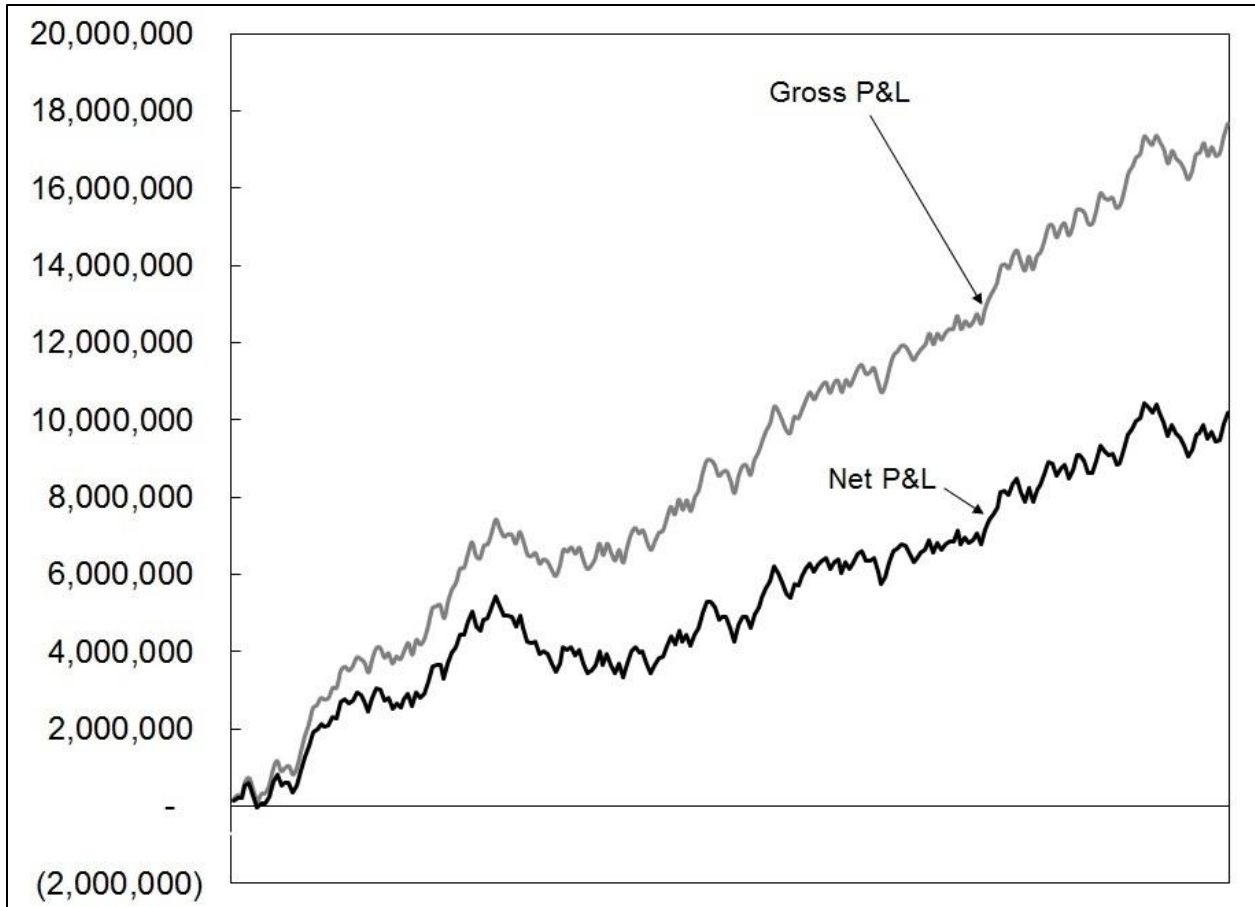
Assumes average bid/ask spread of 2 pips.

His average up day is +$800k, his average down day is -$350k and his WIN% is 50%

Figure 48

P&L simulation 2 for an FX trader doing 15 trades of $10 million each, per day
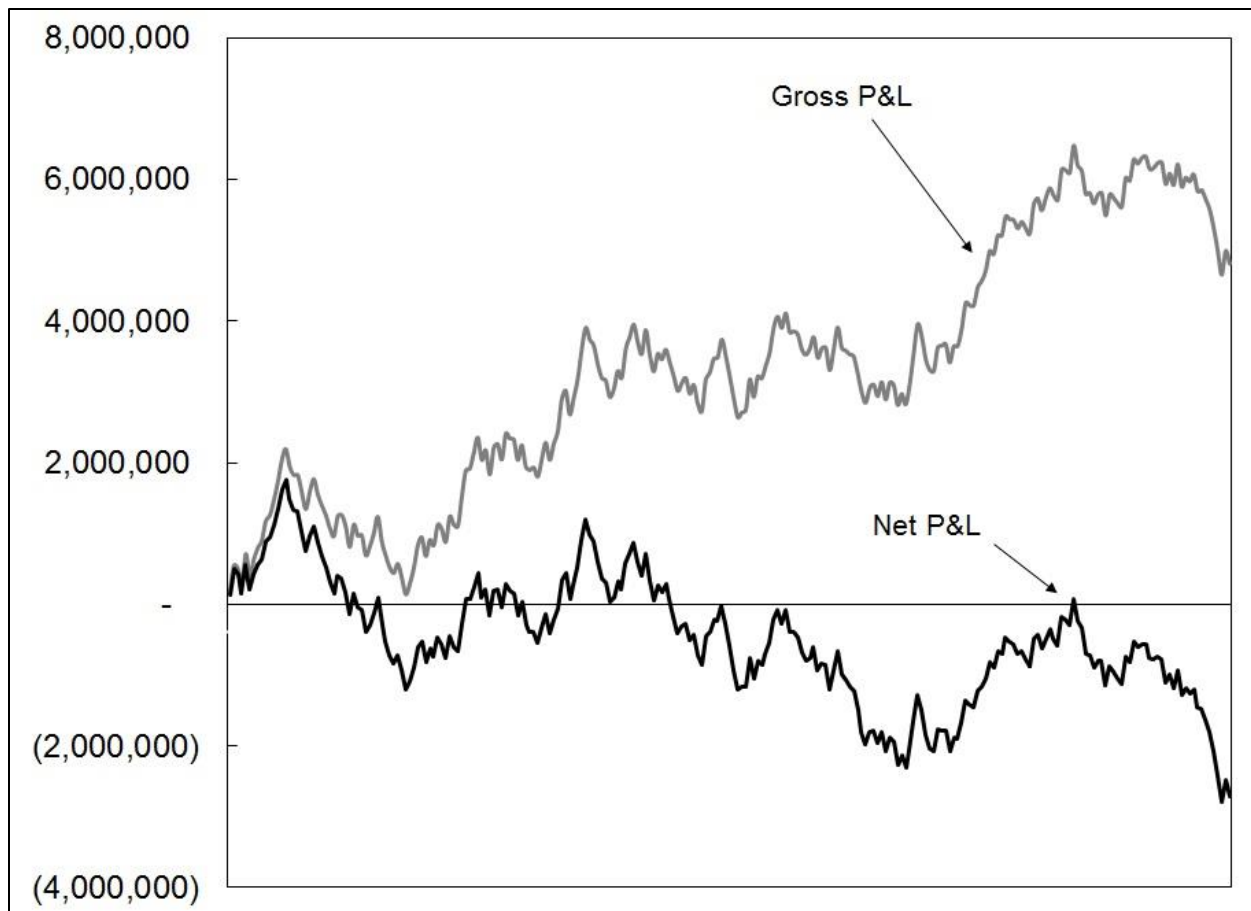
Assumes average bid/ask spread of 2 pips.

His average up day is +$800k, his average down day is -$350k and his WIN% is 50%

Figure 49

Facebook's order book depth and share price on IPO day: May 12, 2012
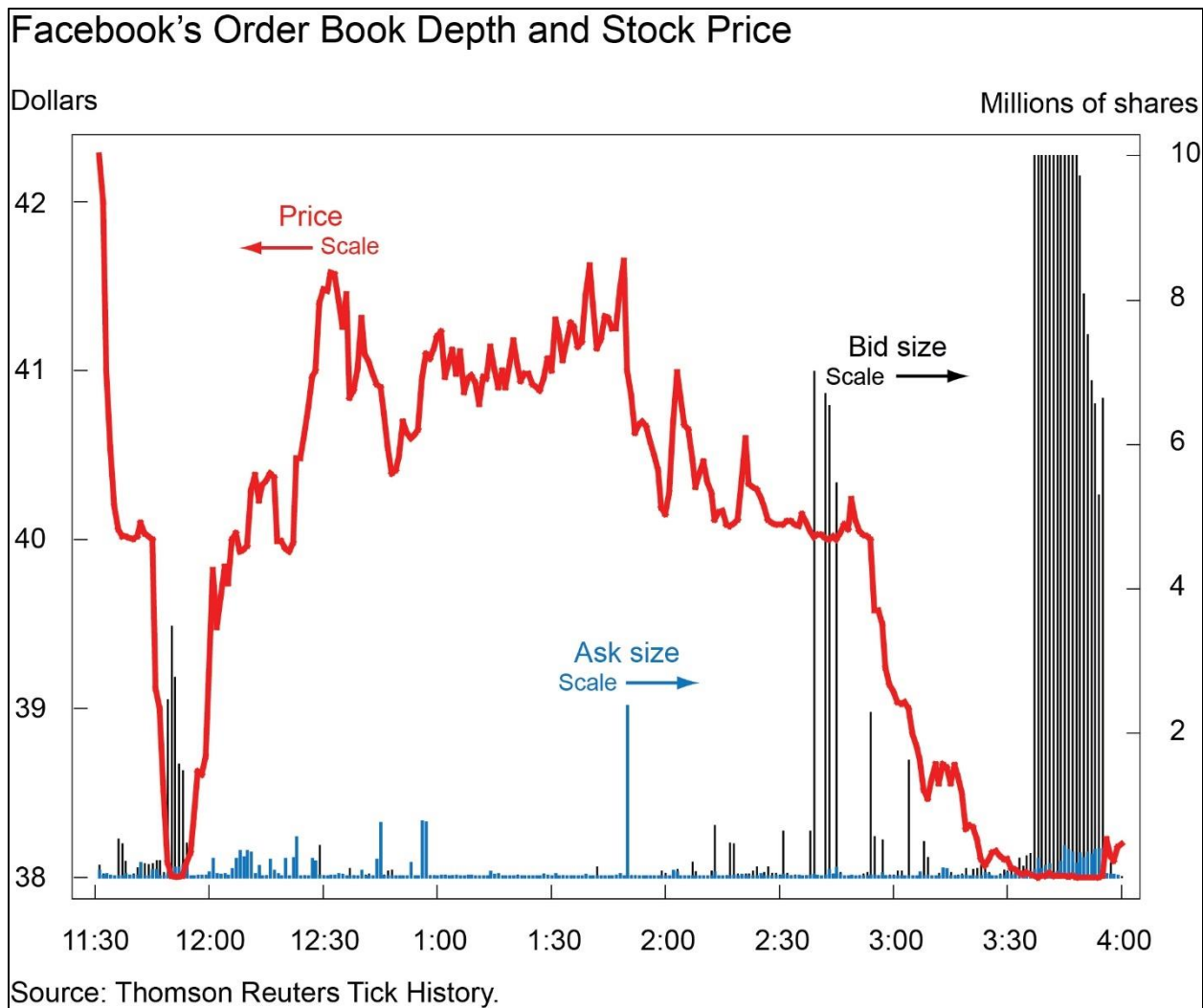
Chart used with permission of Liberty Street Economics (NY Fed)

Figure 50

Facebook stock price: May 12, 2012 and the five days after
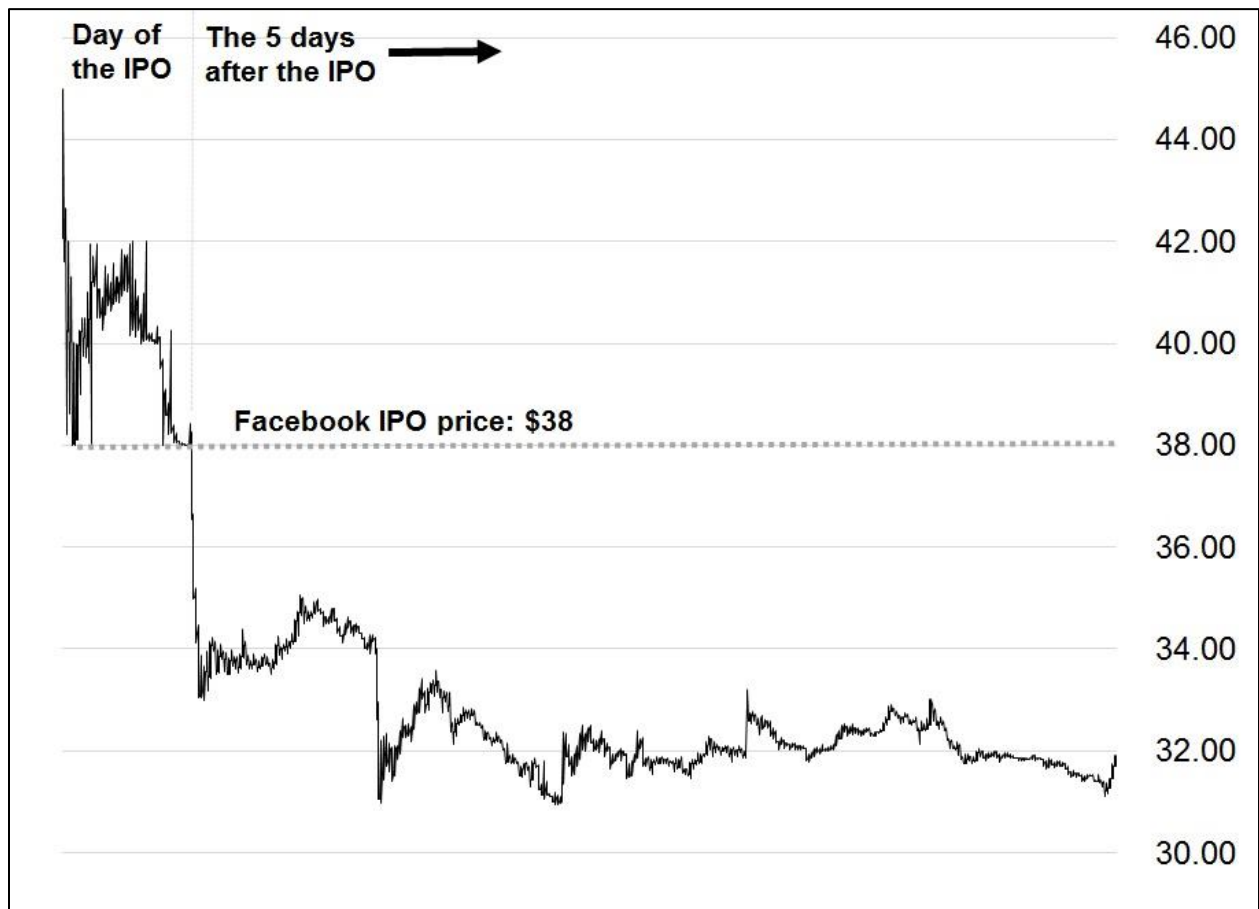
Figure 51

Volume by time of day - S&P 500 futures (ES)
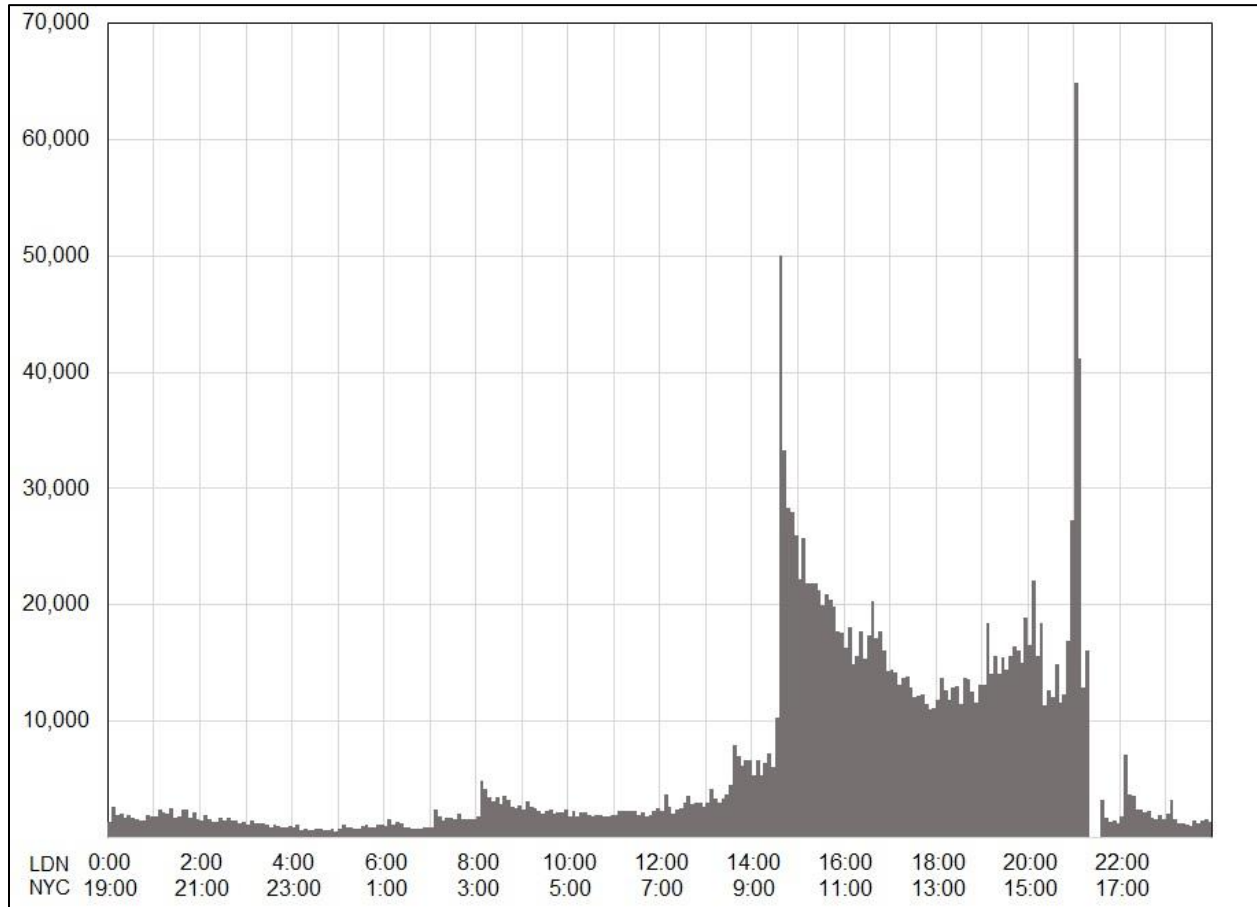
First row of x-axis label is GMT, second row is NYC time

Figure 52

Volume by time of day – 10-year bond futures (TY)
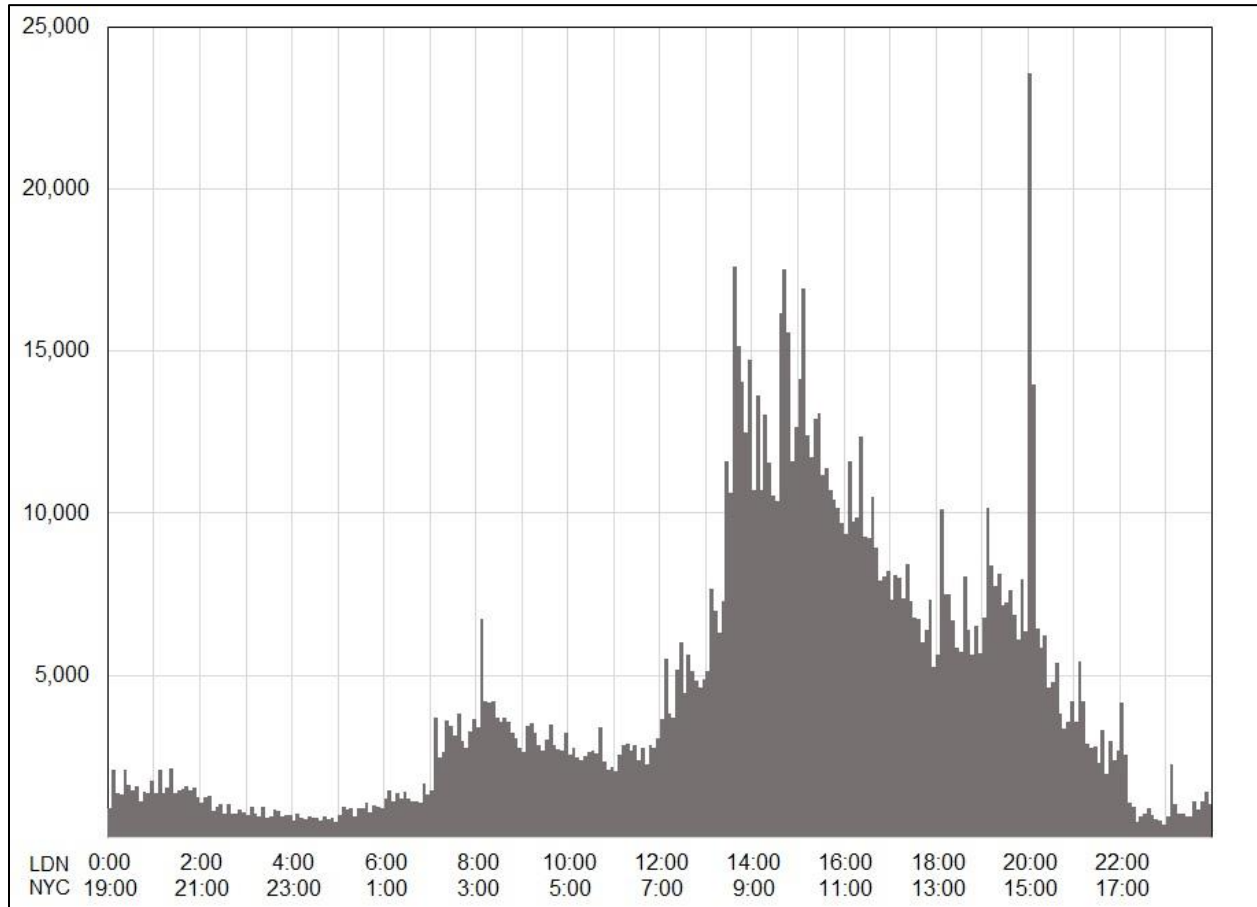
First row of x-axis label is GMT, second row is NYC time

Figure 53

Volume by time of day – Gold futures (GC)
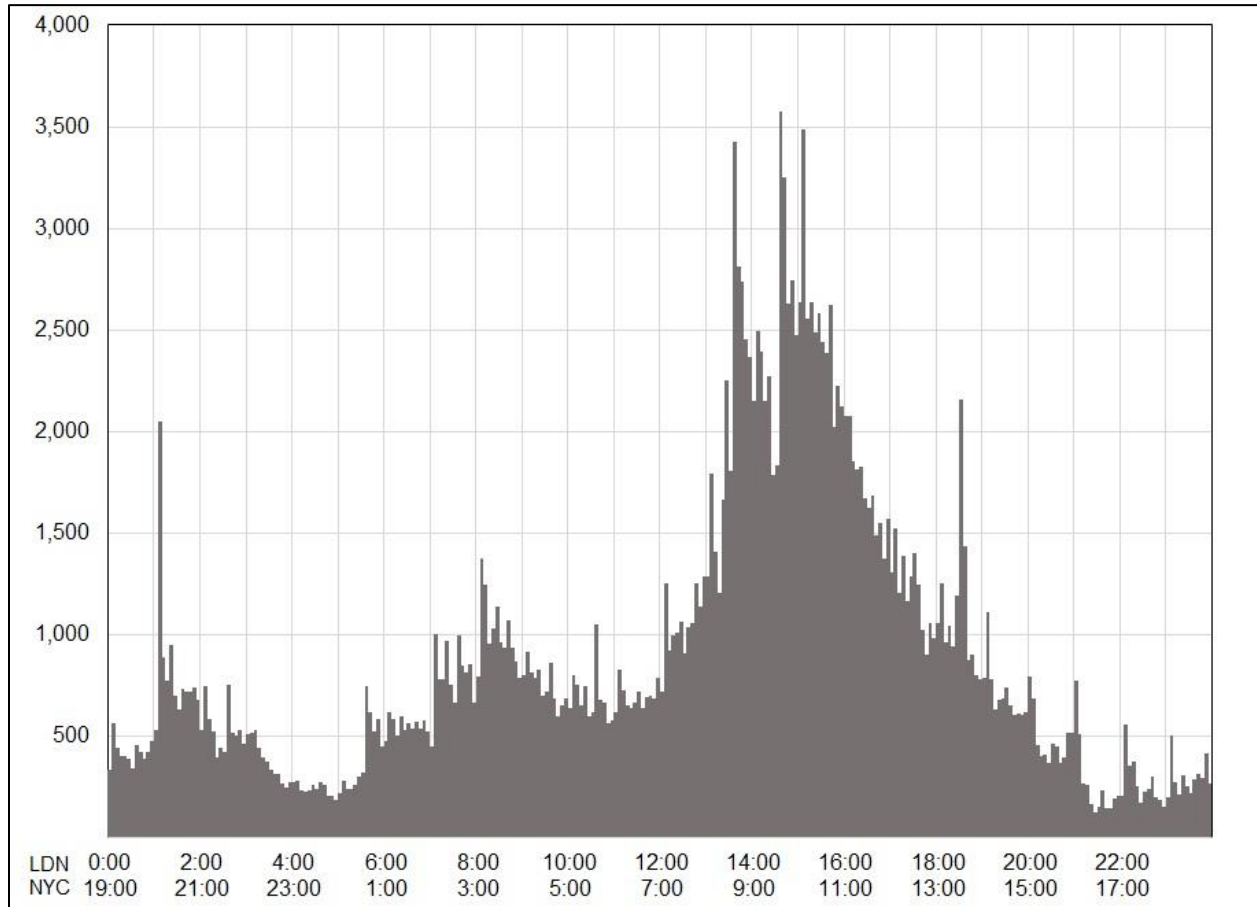
First row of x-axis label is GMT, second row is NYC time

Figure 54

Volume by time of day – EURUSD currency spot
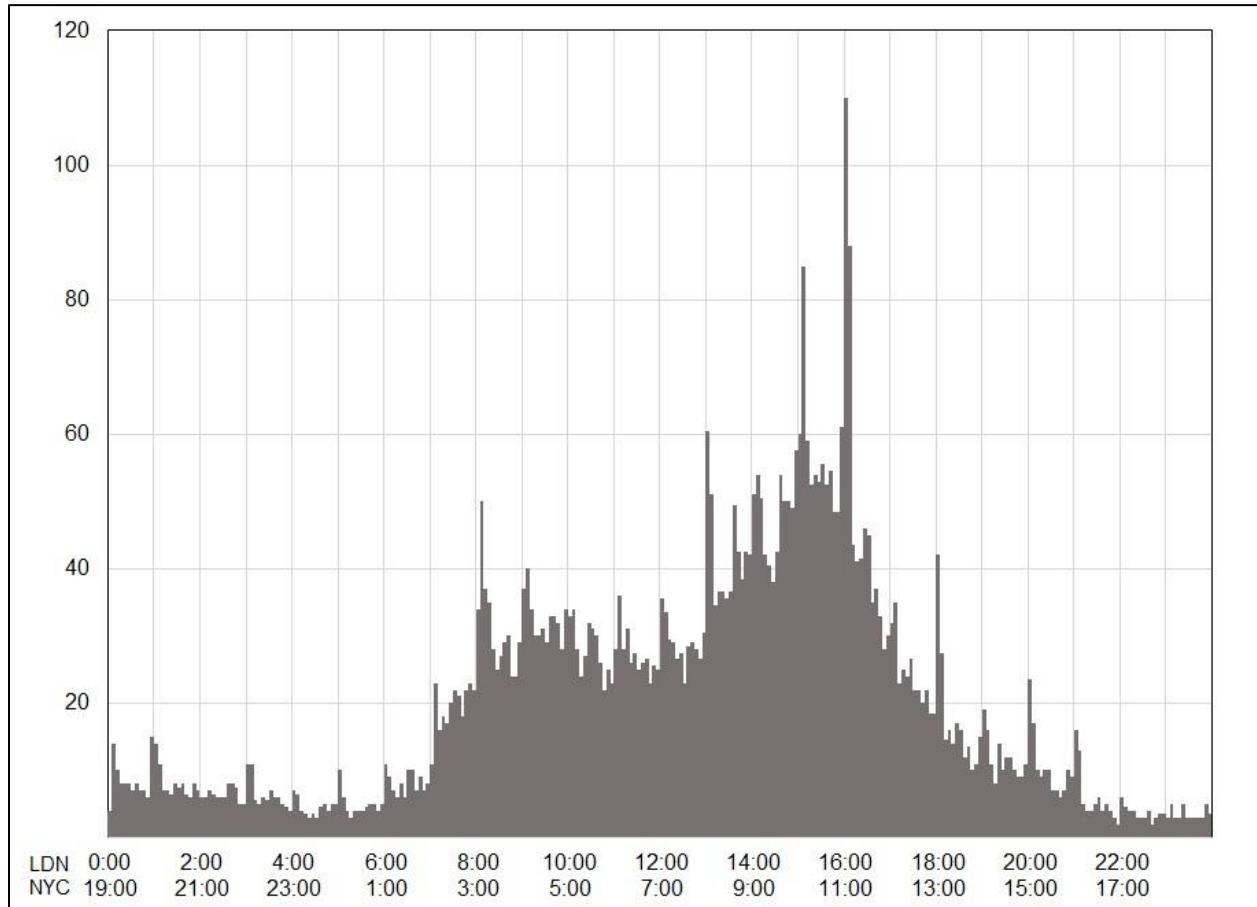
First row of x-axis label is GMT, second row is NYC time

Figure 55

Volatility by time of day – EURUSD currency spot
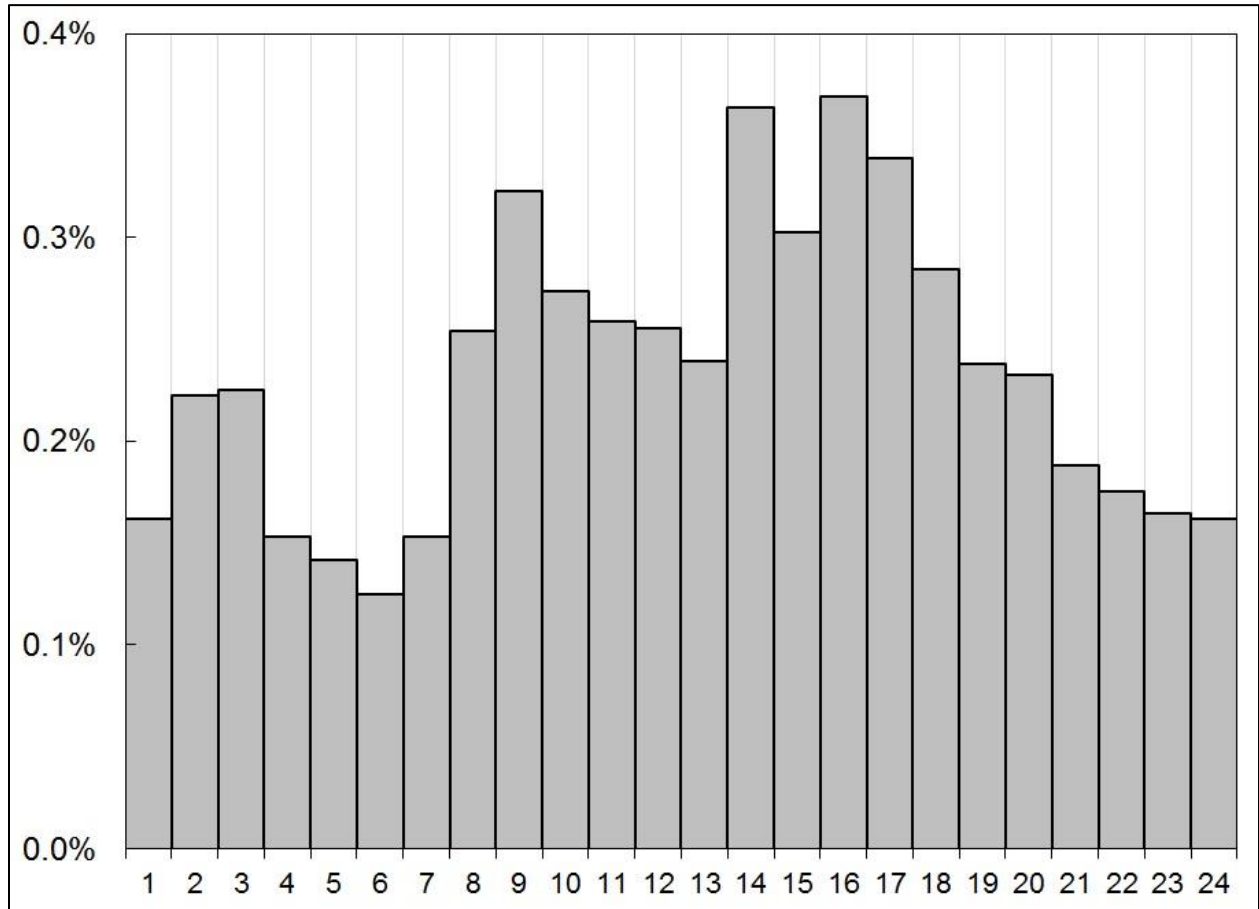
x-axis is GMT

Figure 56

Volume by time of day – Crude oil futures (CL)
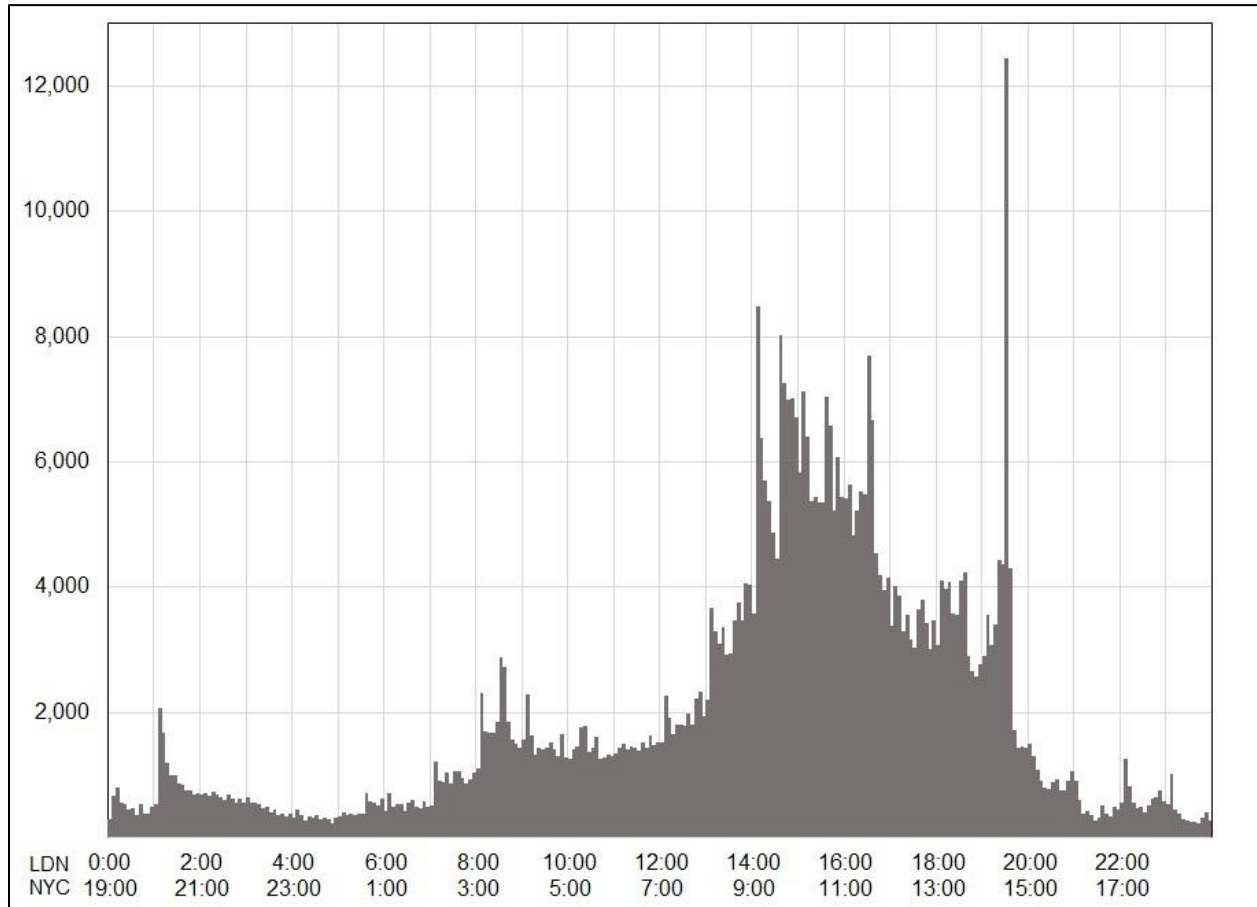
First row of x-axis label is GMT, second row is NYC time

Figure 57

AAPL and SPY, intraday volatility pattern
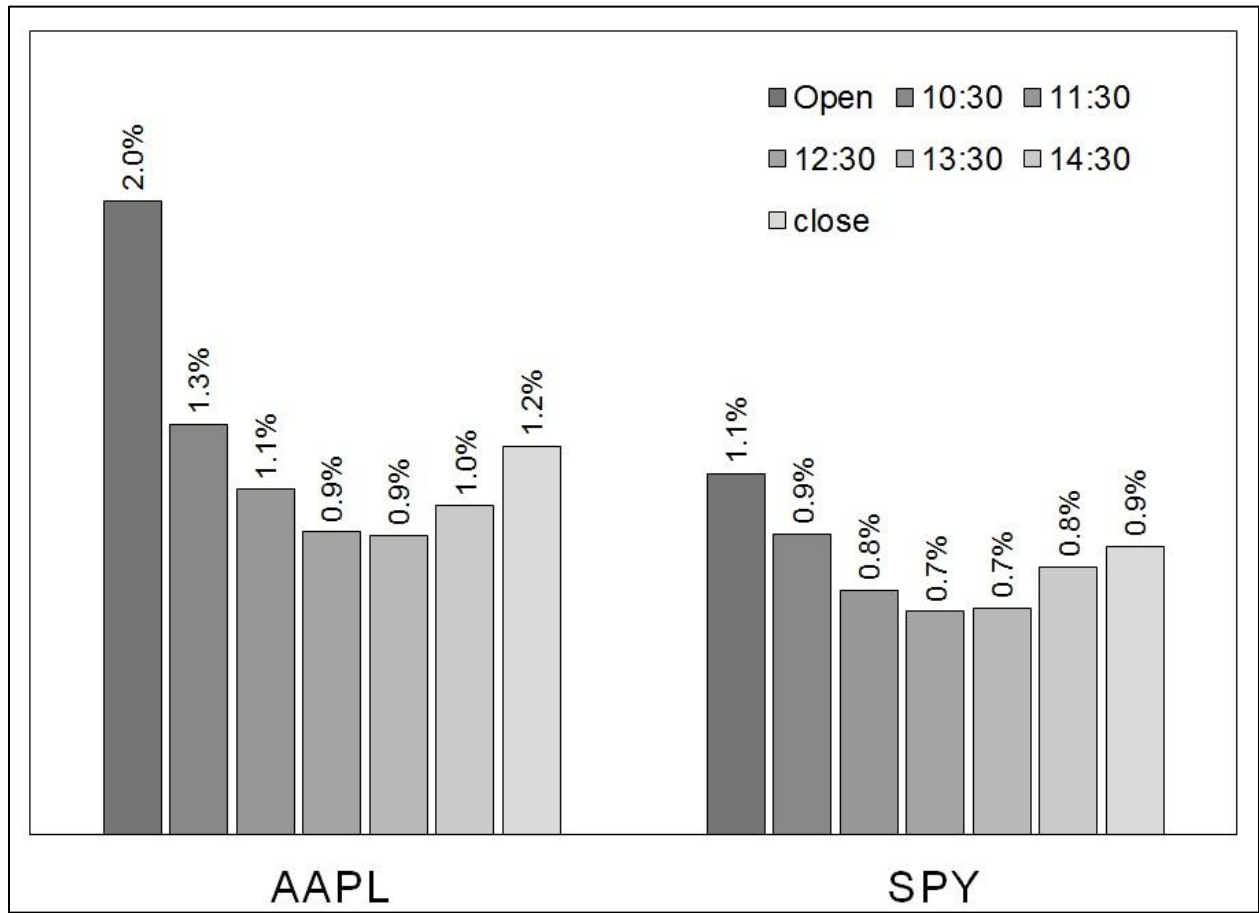
Using data from February, 2020 to August, 2020
First six bars are 60-minute average range. Open (9:30 a.m.) to 10:30 a.m., 10:30 to 11:30, etc.
Final bar is the average range for 3:30 to 4:00 p.m.

Figure 58

AAPL common stock, distribution of 1-day returns, January 2010 to October 2020

Curve shows normal days, bars show earnings days

Figure 59

TSLA point and figure chart for December 18, 2020 (the day it was added to the S&P 500)

Labels within the chart: "3:45PM to 4:00PM" (upper right portion) and "9:30AM to 3:45PM" (lower left portion). A black vertical line separates the two parts of the day.

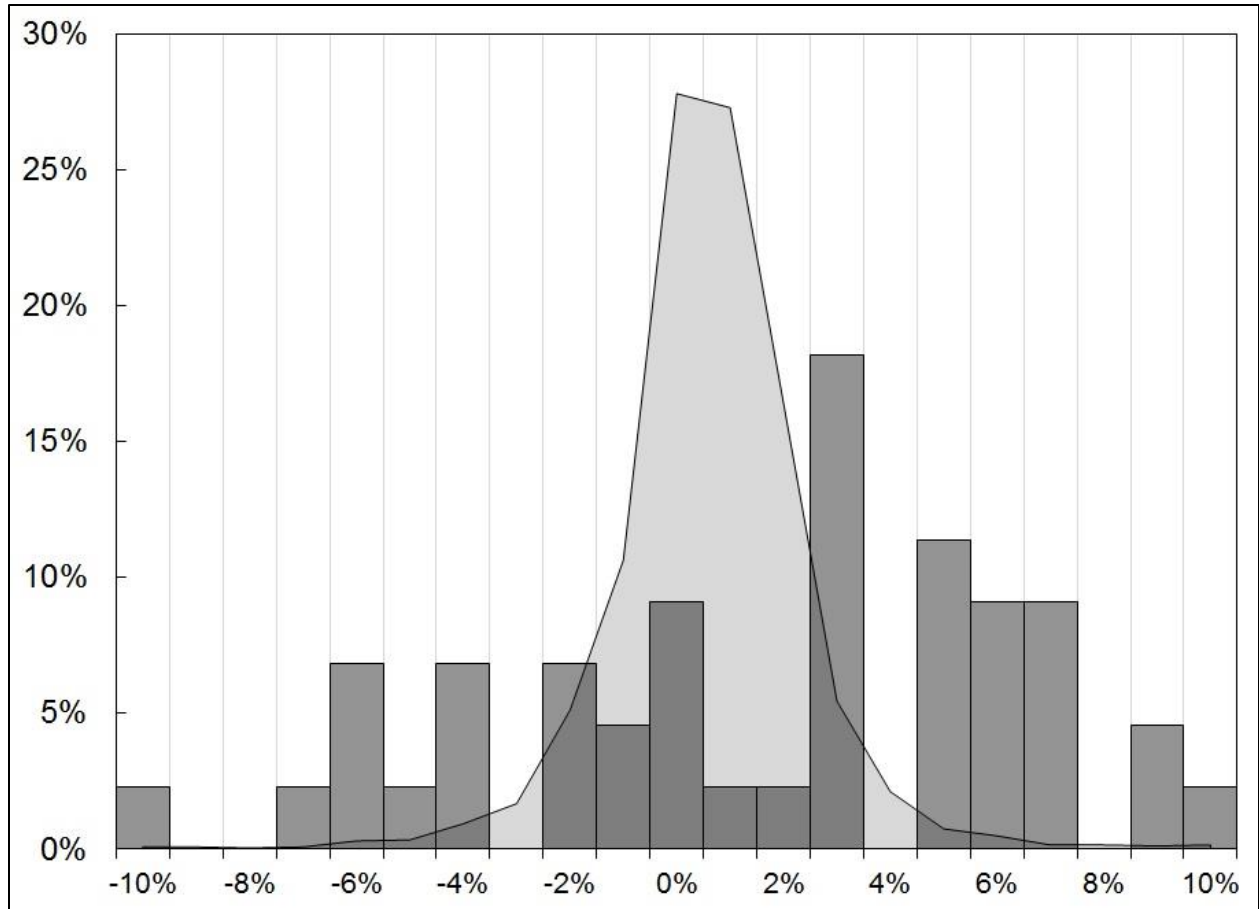| Price	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
698															
695													X		X
692													X	O	X
689													X	O	X
686													X	O	X
683	X												X	O	X
680	X	O											X	O	X
677	X	O		X									X	O	X
674	X	O	X		X	O			X				X	O	X
671	X	O	X	O	X	O			X	O			X	O	X
668	X	O	X	O	X	O			X	O			X	O	X
665	X	O	X	O	X	O			X	O	X		X	O	X
662	X	O	X	O	X	O			X	O	X	O	X	O	X
659	X	O	X	O	X	O	X		X	O	X	O	X	O	
656	X	O		O	X	O	X	O	X	O	X	O	X		
653			O		O	X		O	X	O	X	O			
650					O	X		O	X	O	X				
647						O		O	X	O	X				
644								O	X	O					
641								O	X		X				
638								O	X	O	X				
635								O	X	O	X				
632								O	X	O					
629								O							
626								O							

The black line separating the two parts of the day is just there for display purposes to show you how point and figure charts distort or eliminate the element of time

Figure 60

TSLA bar chart for December 18, 2020 (the day it was added to the S&P 500)

The insane closing rally is the demand from indexers at the close

Figure 61

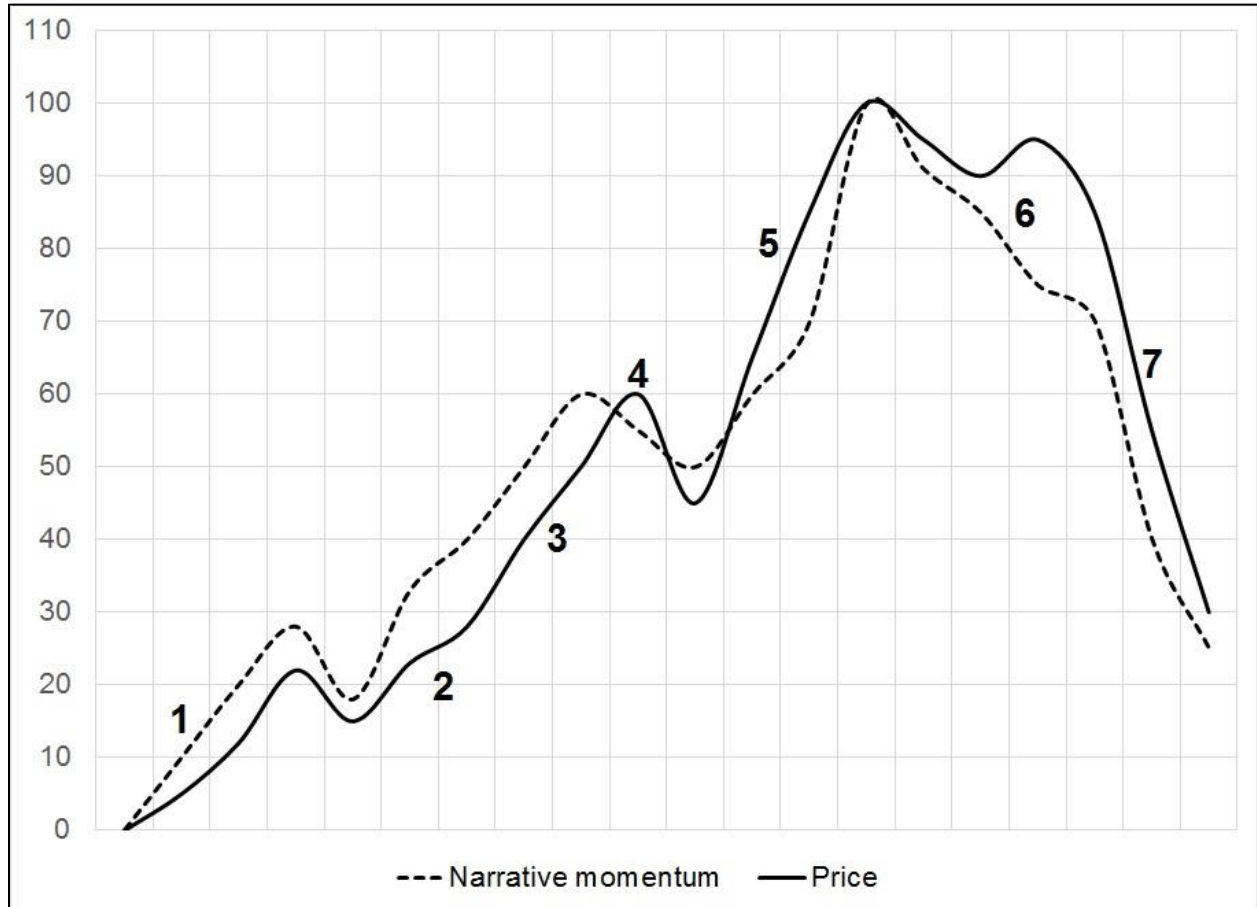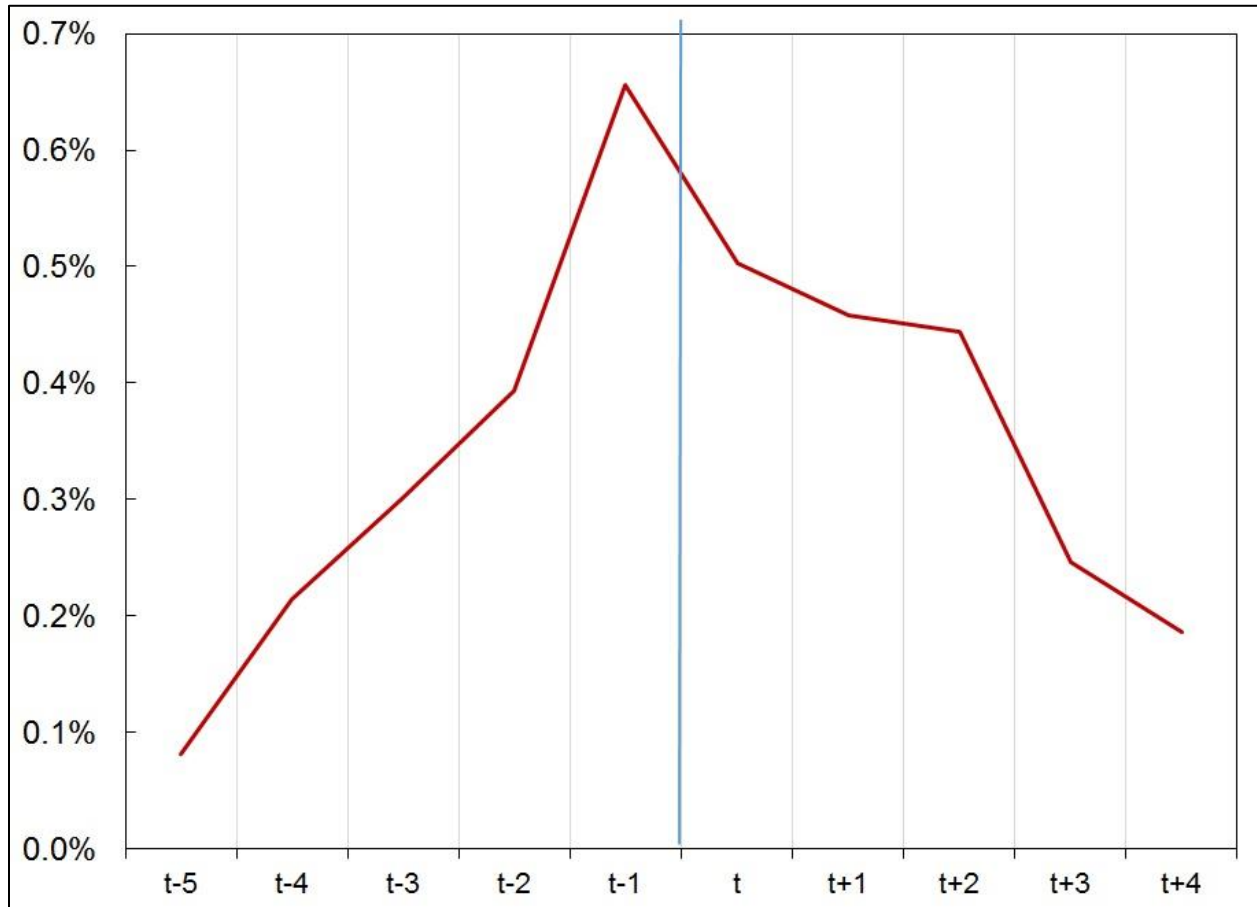## A stylized view of the typical narrative cycle

Figure 62

Average performance of GBPUSD in the 10 days around the turn of the month
Only months where SPX was up 3% or more (2010 to 2020)

t = the first business day of the month. Sample size is 37 months.

GBPUSD on the last five days of the month and first five days of next month

Figure 63

Canadian dollar (candles, right axis) vs. S&P futures (dotted line, left axis)
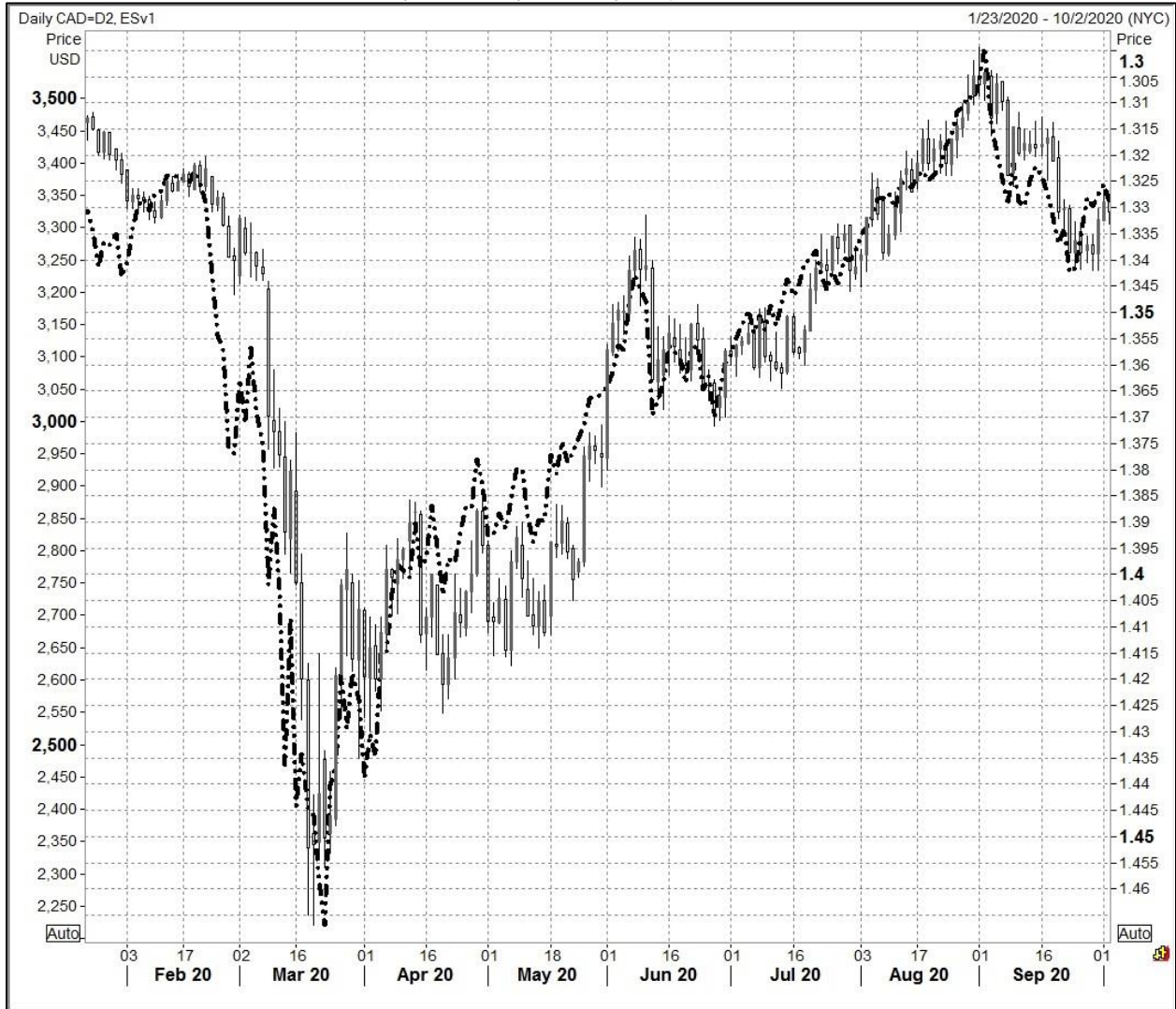Hourly, January to early September 2020

Chart courtesy of Refinitiv

Figure 64

Australian dollar (solid line, right axis) vs. copper futures (dotted line, left axis)
Hourly, June to early September 2020

Chart courtesy of Refinitiv

Figure 65

S&P 500 futures (candles, right axis) vs. VIX inverted (dotted line, left axis)
June 15 to September 1, 2020

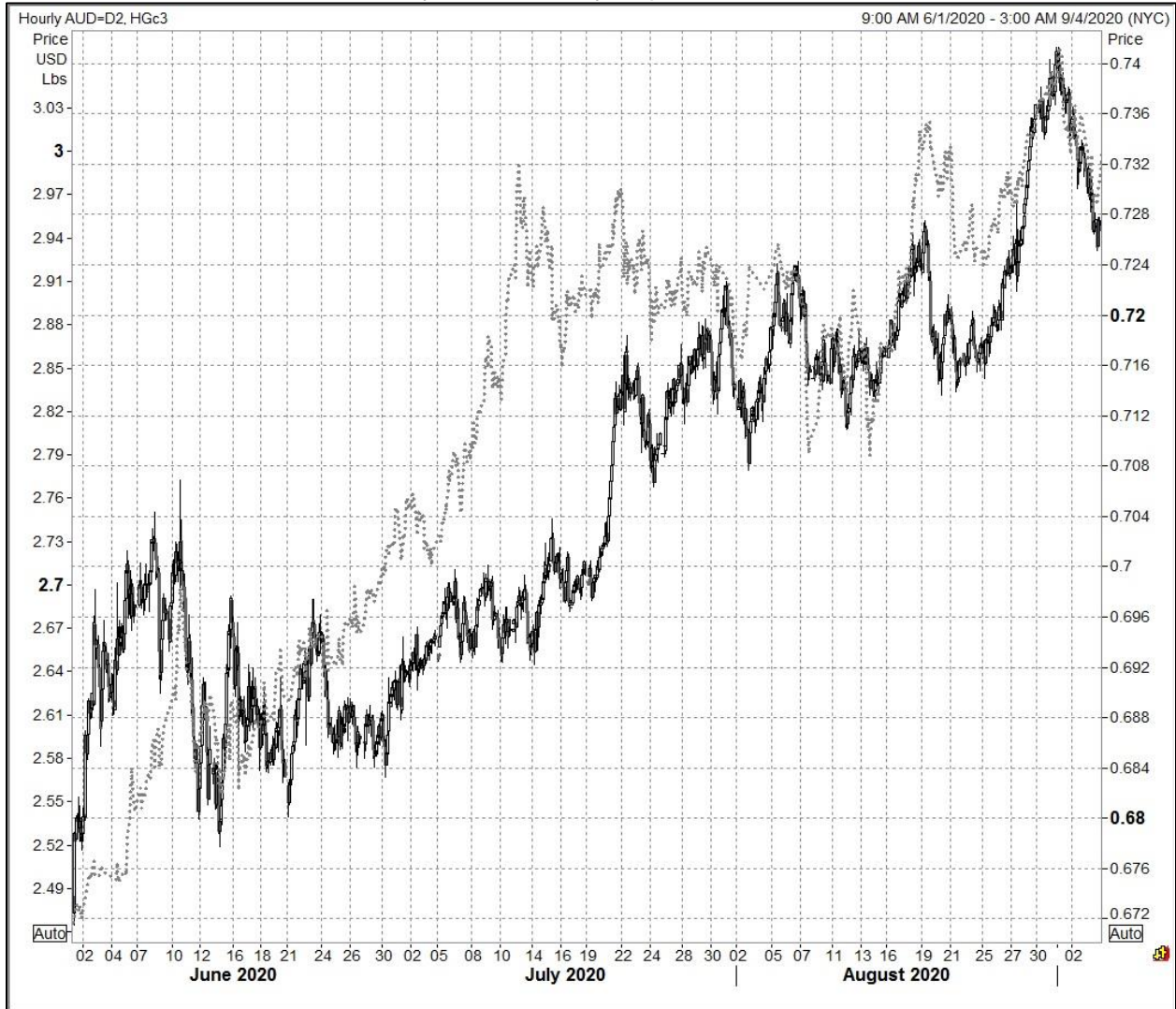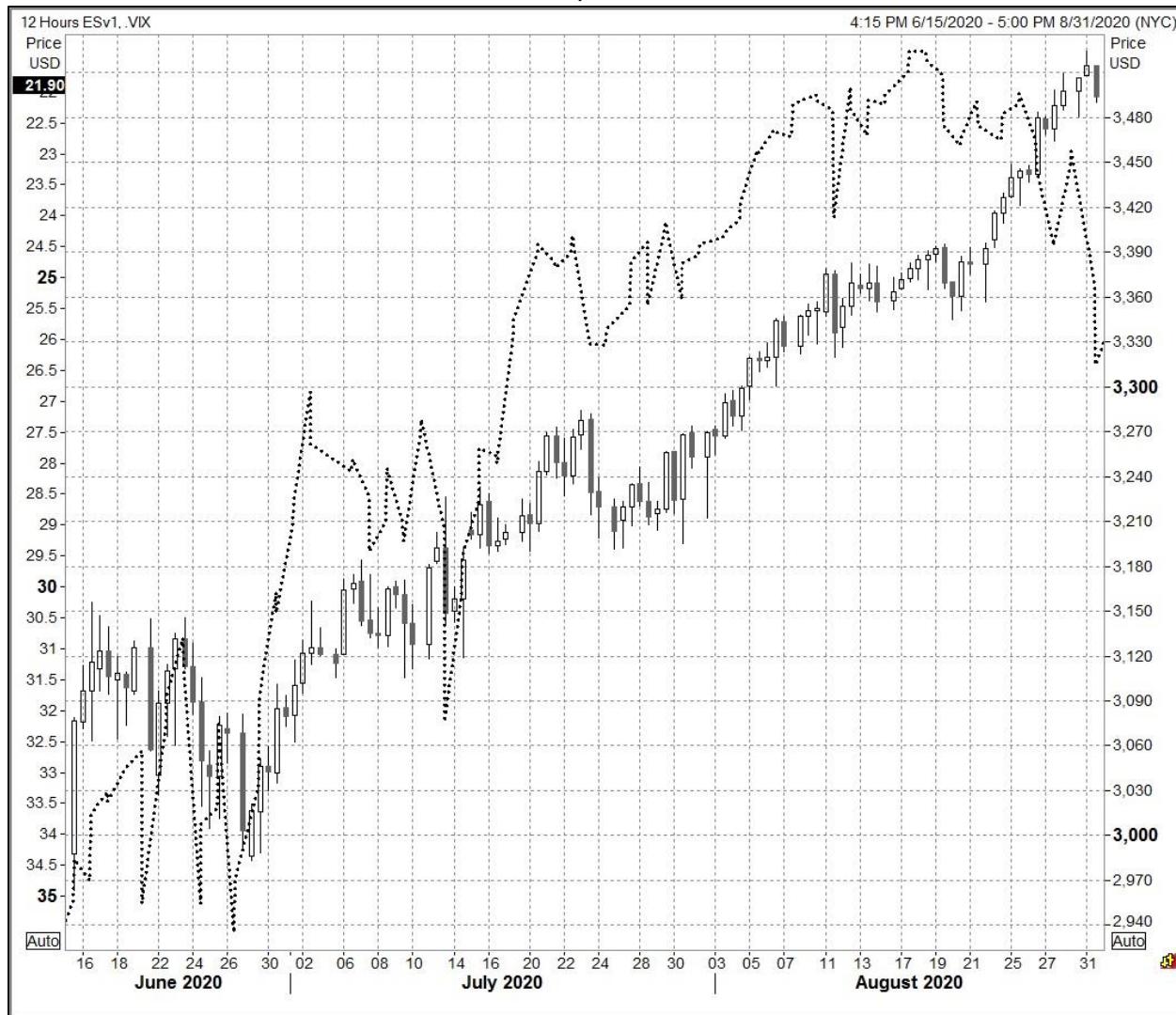
Chart courtesy of Refinitiv

Figure 66

S&P 500 futures (candles, right axis) vs. VIX inverted (dotted line, left axis)
June 15 to September 30, 2020
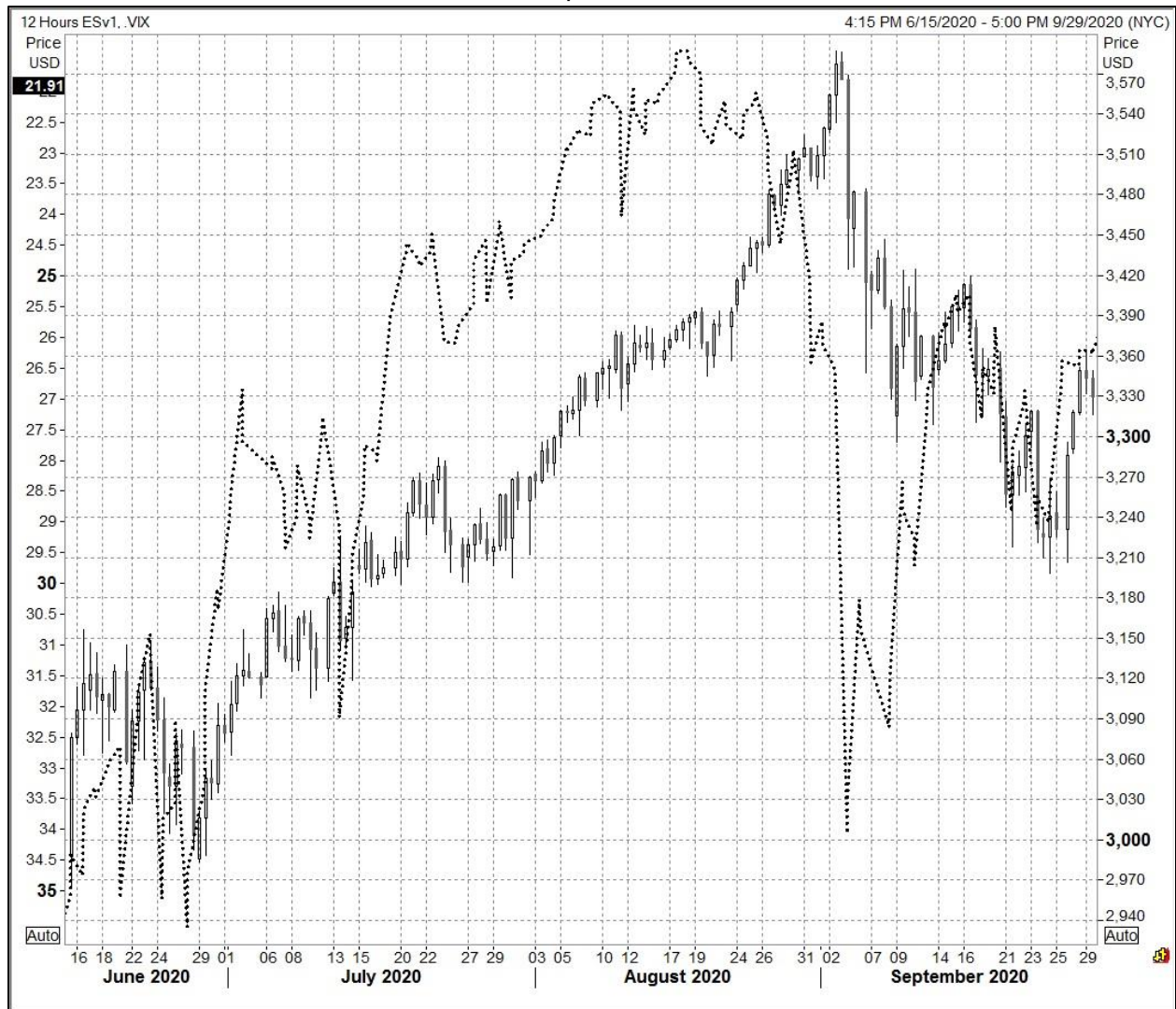
Chart courtesy of Refinitiv

Figure 67

HYG gaps higher on news then successfully tests and holds the NewsPivot

Caption: Giant gap

Caption: Fed announces it will buy riskier corporate debt
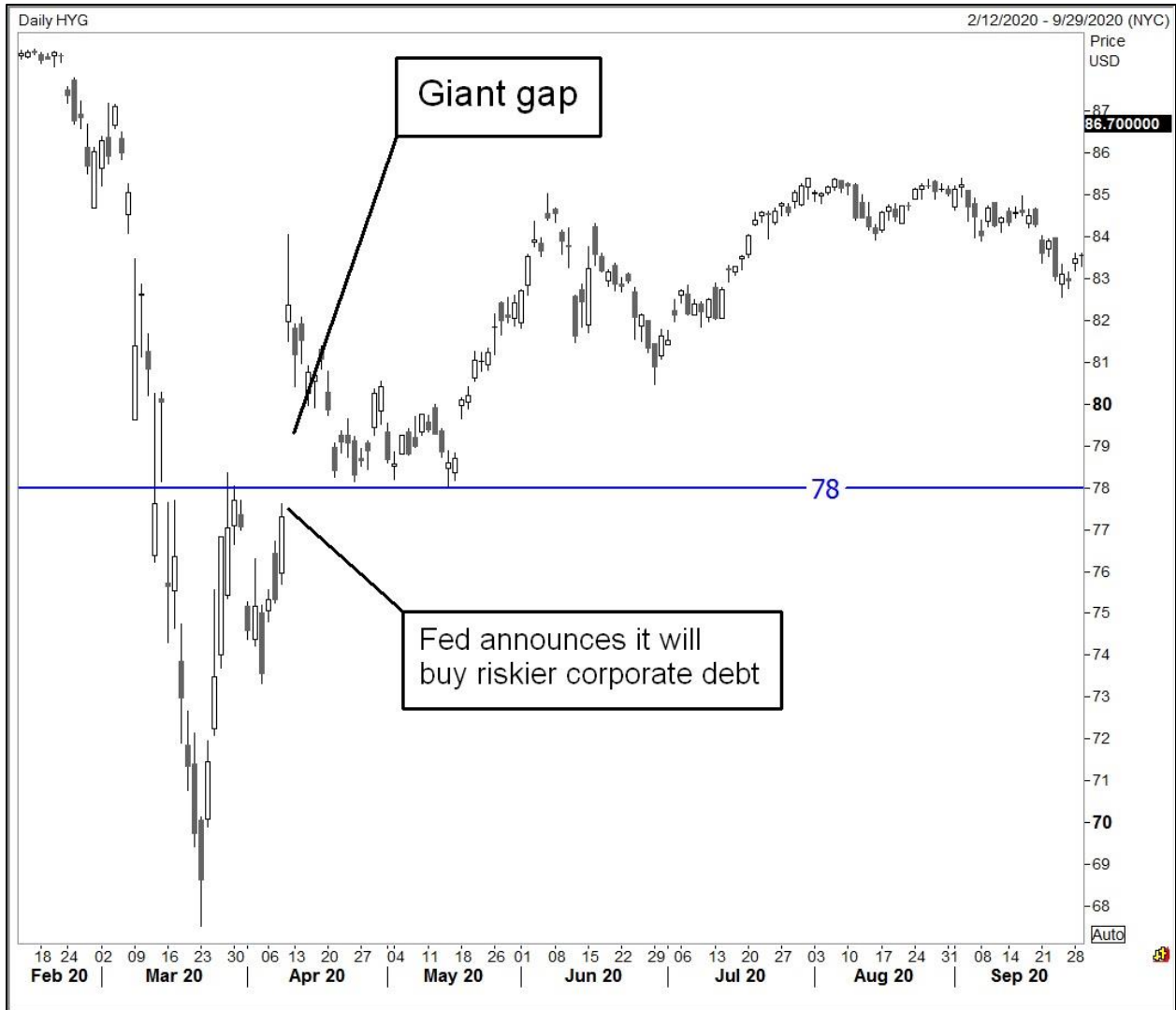
Chart courtesy of Refinitiv

Figure 68

GBPUSD hourly chart July 16 to September 15, 2020
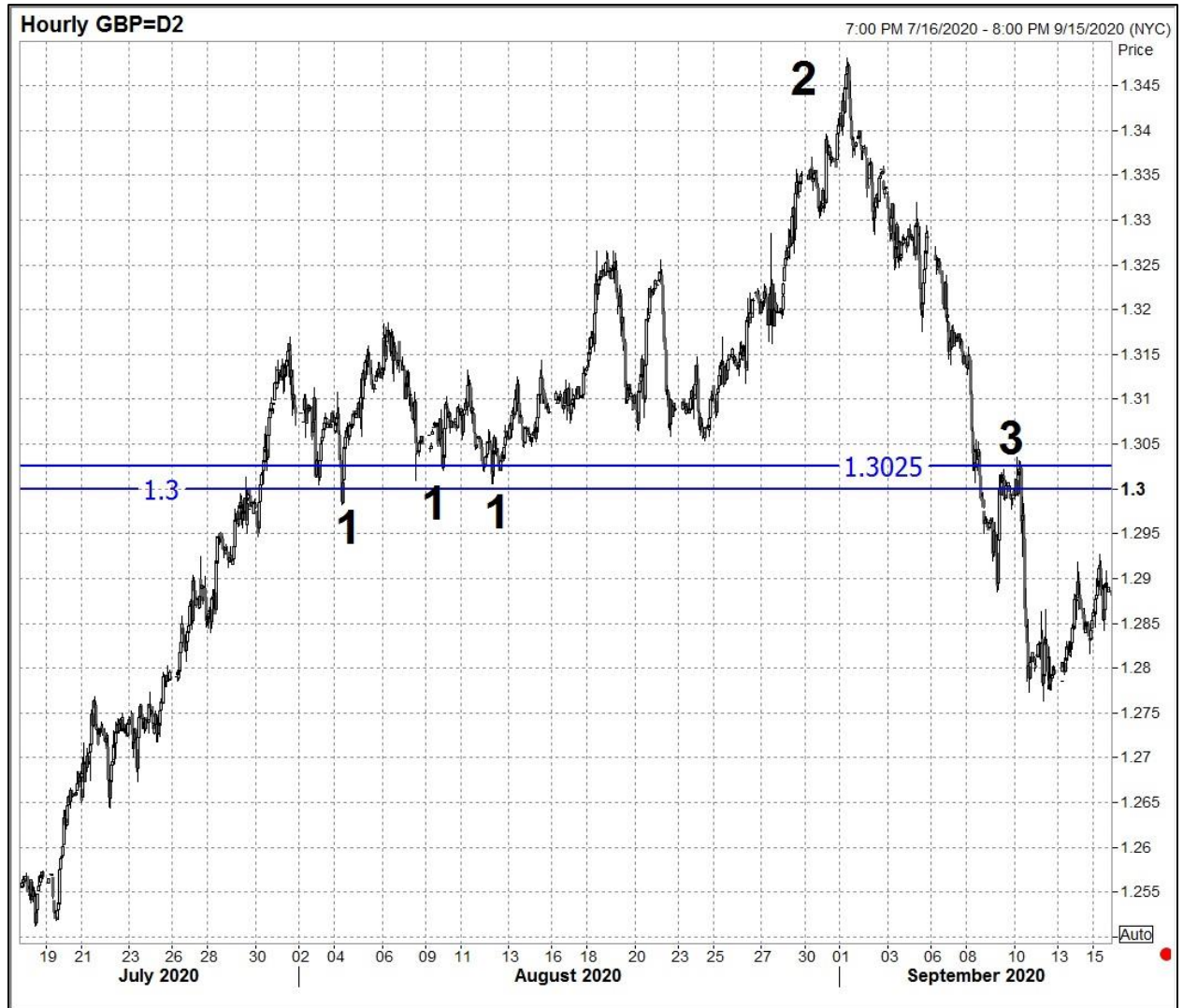
Chart courtesy of Refinitiv

Figure 69

Gold hourly chart July 16 to September 26, 2020

Chart courtesy of Refinitiv

Figure 70

EURNOK hourly, April 2020 to September 2020
Bottom pane shows EURNOK volume

Chart courtesy of Refinitiv

Figure 71

USDCAD Hourly October 2019 to September 2020

Chart courtesy of Refinitiv

Figure 72

Crude oil breaks down out of rising wedge

Chart courtesy of Refinitiv

Figure 73

Two dojis in silver signal a major top

Chart courtesy of Refinitiv

Figure 74

Bull hammer signals the bottom in bitcoin

Chart courtesy of Refinitiv

Figure 75

Results of short NZDUSD after RSI above then below 75

Date	x+1	x+3	x+5	x+10	x+20	x+30	x+60
average	0.0%	-0.4%	-0.8%	-0.7%	-0.7%	-2.0%	-2.7%
median	-0.1%	0.0%	-0.4%	-0.3%	0.1%	-1.1%	-1.2%
% of time it goes up	50%	50%	42%	42%	50%	33%	25%

x+1 means performance one day after the first RSI reading above 75, x+3 means three days later, x+5 means 5-day performance, etc.

Figure 76

TOP: S&P 500 futures with 100-hour MA
MIDDLE: Deviation from the 100-hour MA
BOTTOM: Buy / sell signal triggers if S&P is more than 3.5% above or below 100-hour MA
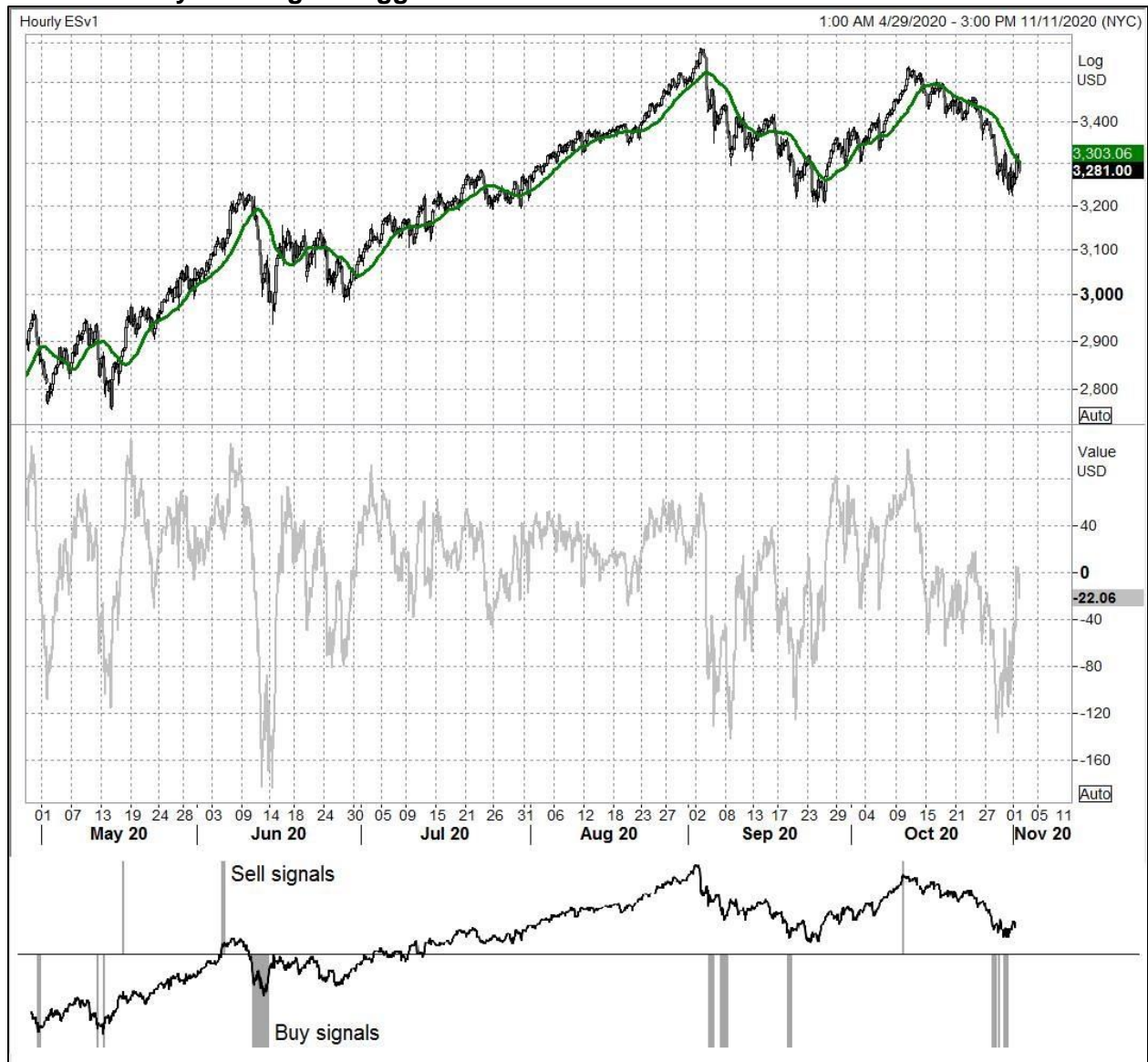
Figure 77

Recipe for a fire
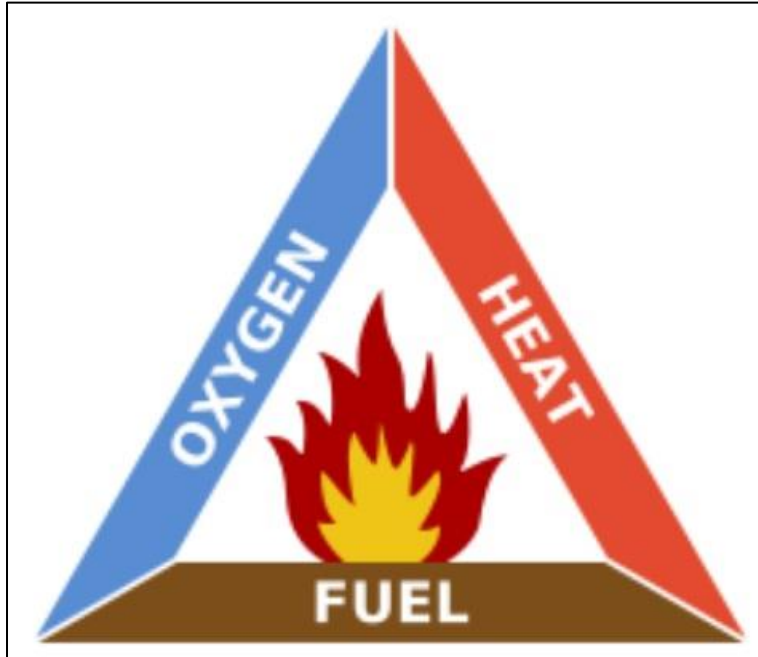
Figure 78

Twenty years of trading for a skilled trader who behaves like a call option
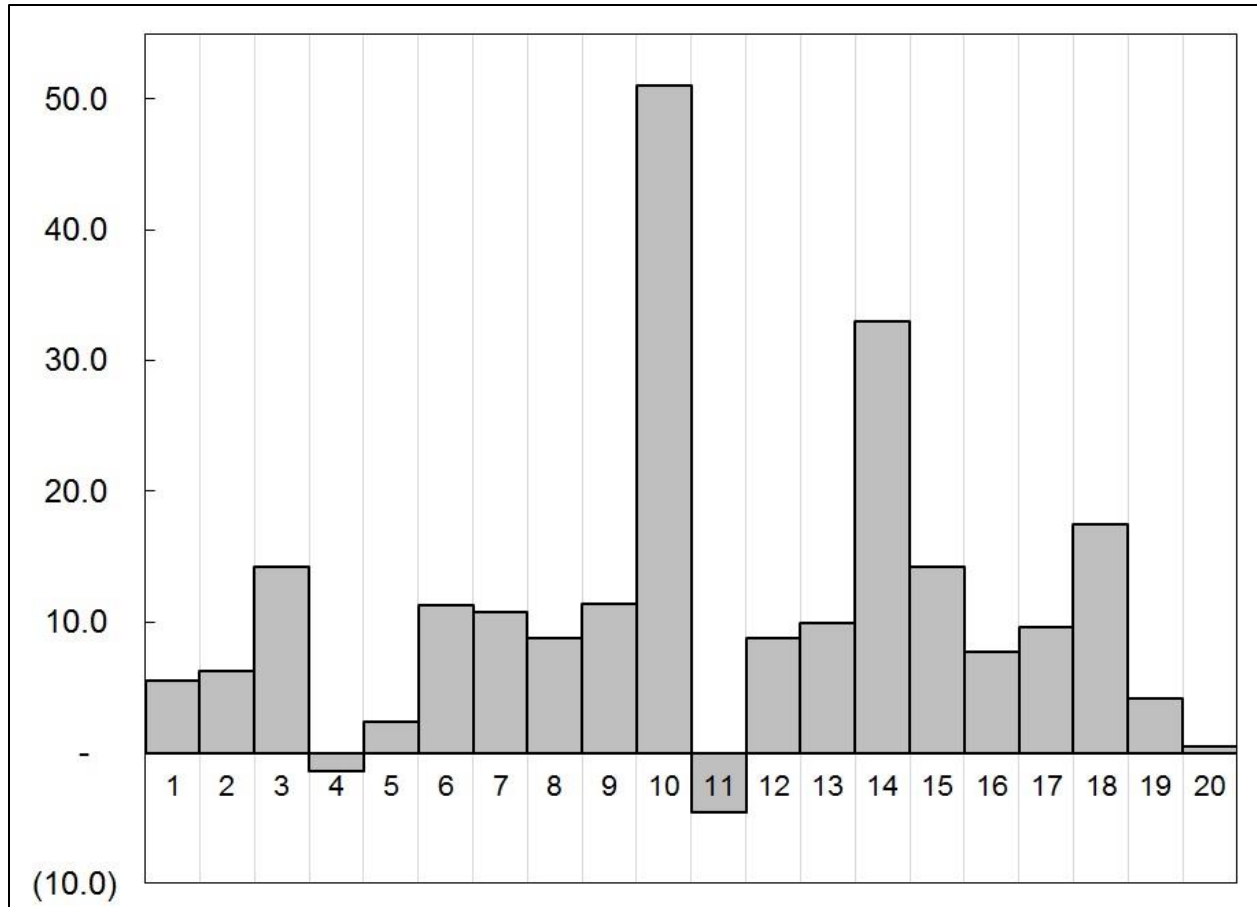
y-axis is $milllions

Figure 79

Variance simulation for a retail trader
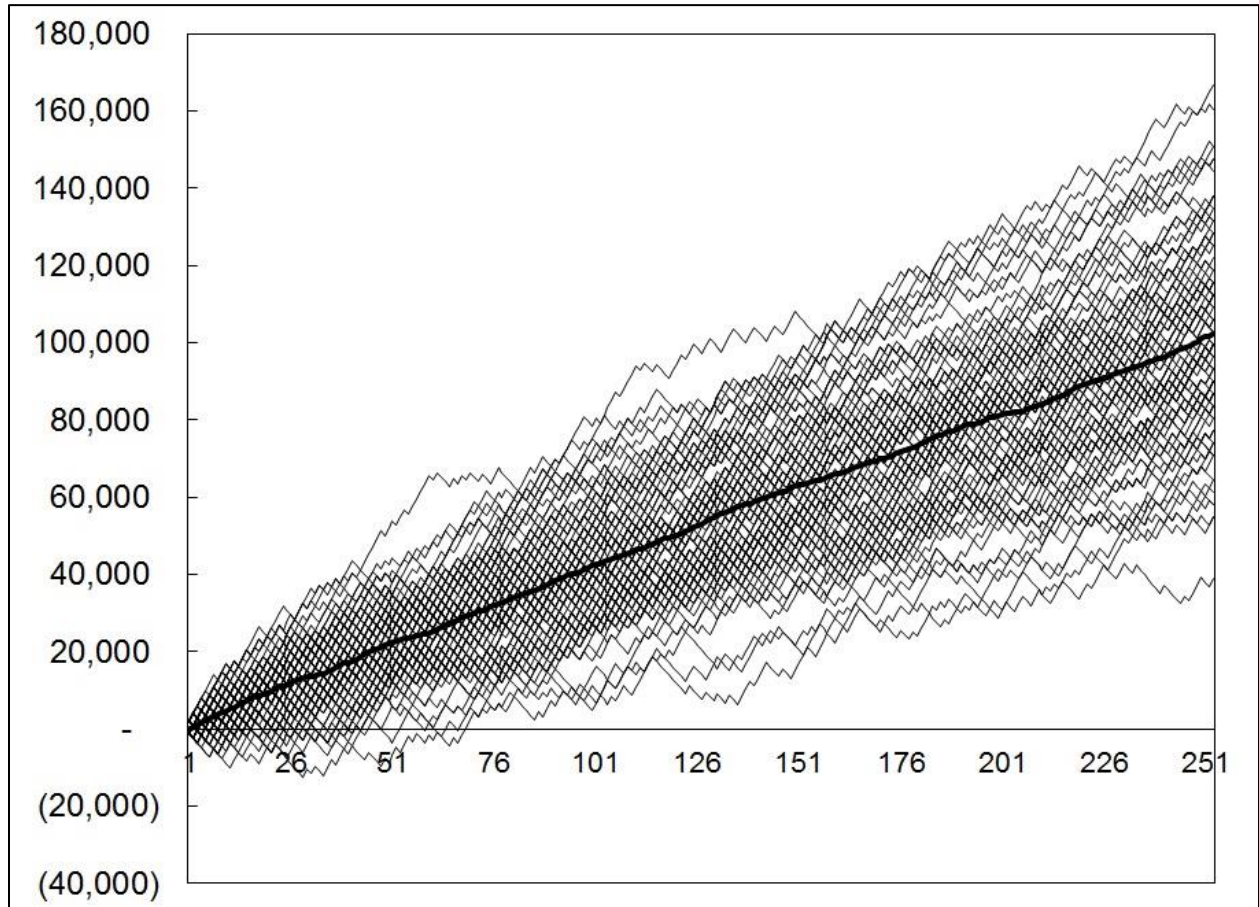
Figure 80

Variance simulation for a bank trader
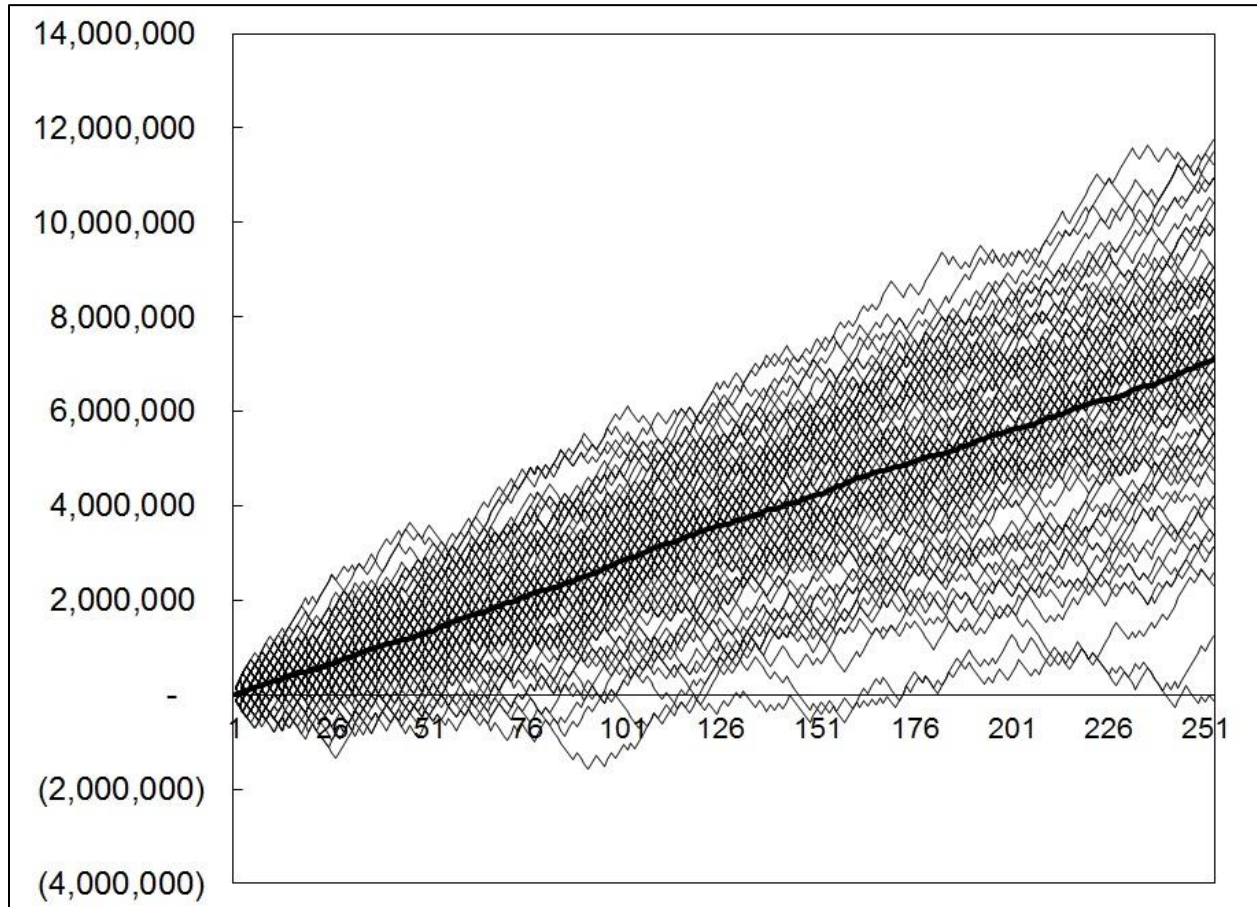
Figure 81

Average annual P&L for three different risk allocation strategies
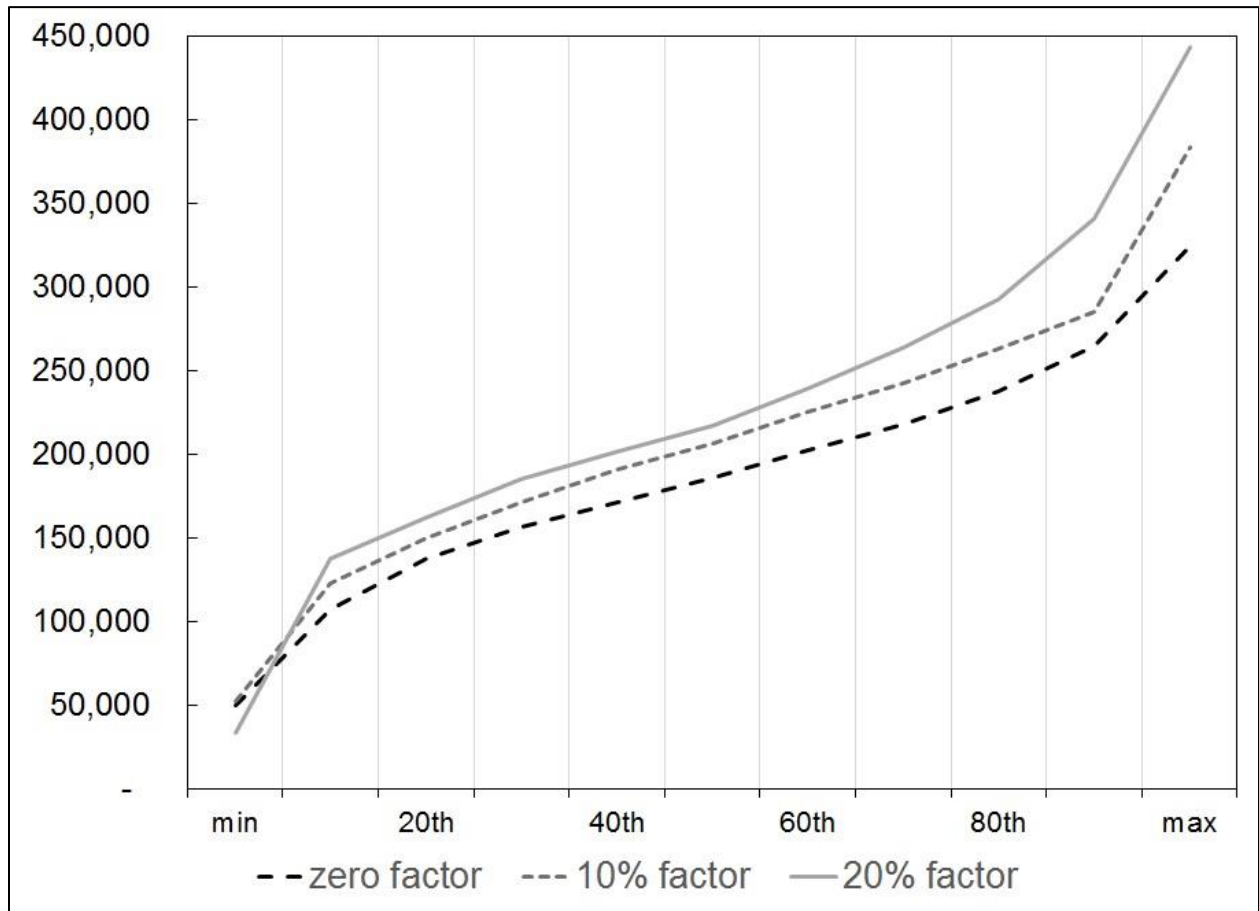
250 trades per year, simulated 1000 times

Figure 82

Rolling 5-day percentage of SPX positive days (1990 to now)
x-axis shows day of year (1 = 01JAN, 2 = 02JAN, etc.)
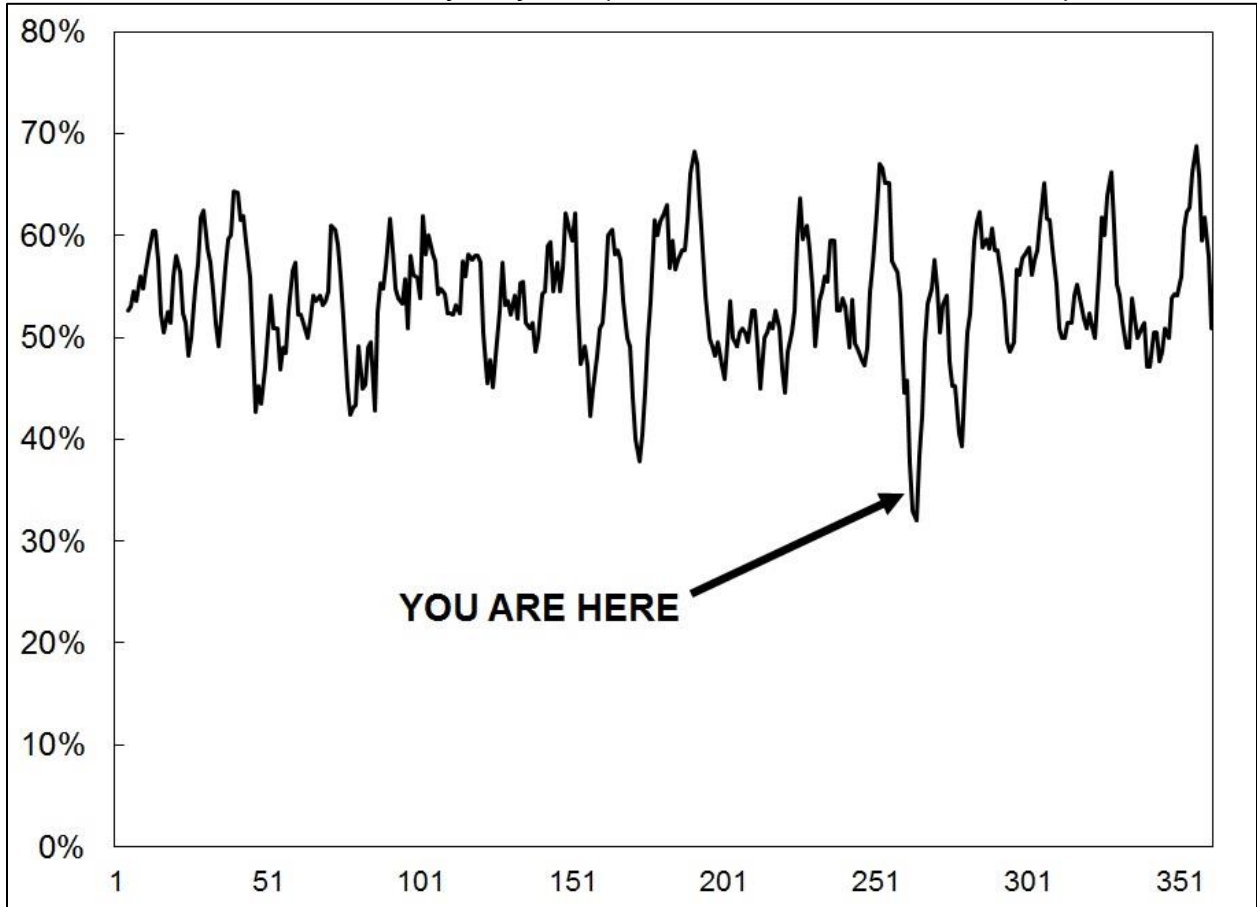
Figure 83

The average path of equities since 1990
x-axis shows January 1 to December 31
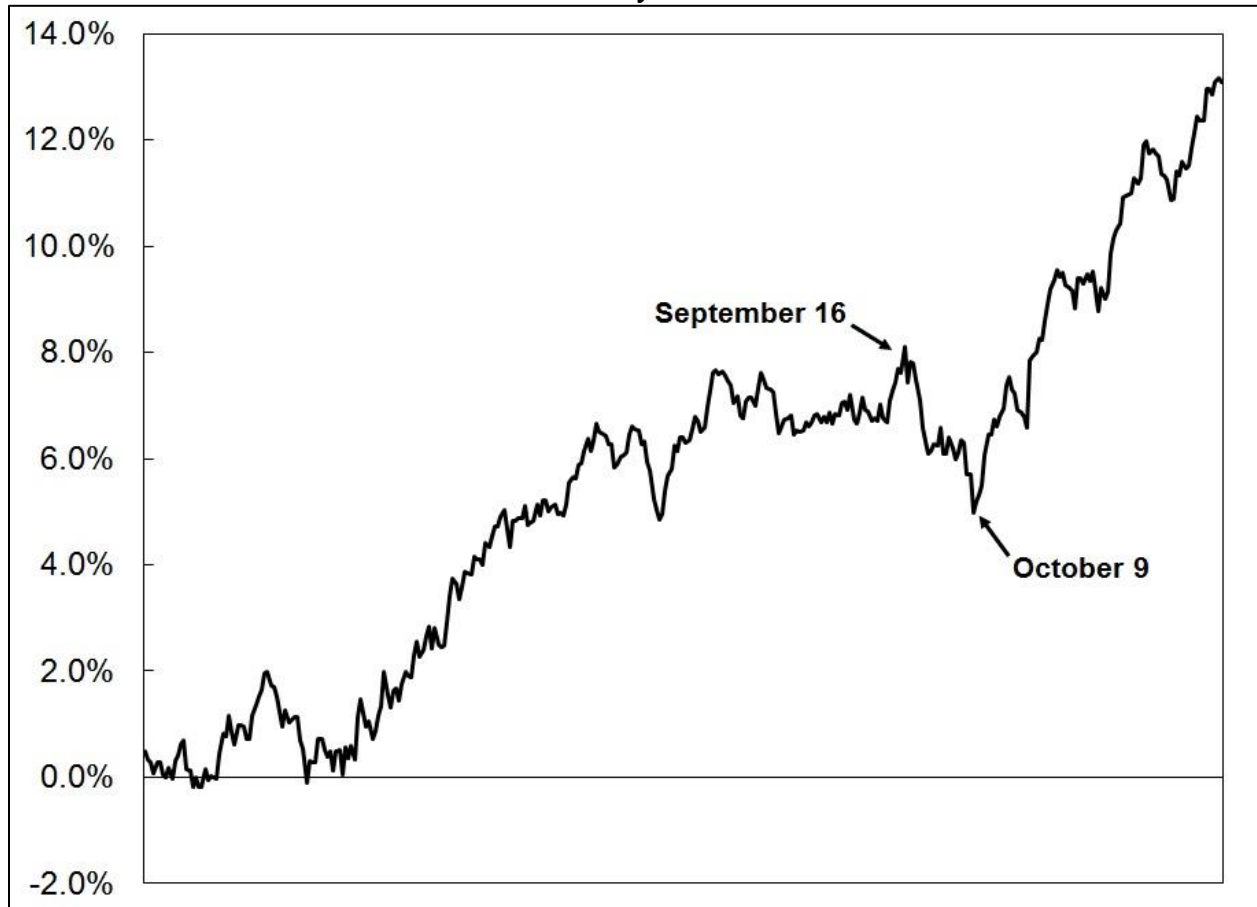
Figure 84

EURUSD after Macron round 1 and EURUSD after Merkel-Macron proposal
Normalized to 60 days before the event date

Vertical line marks event date
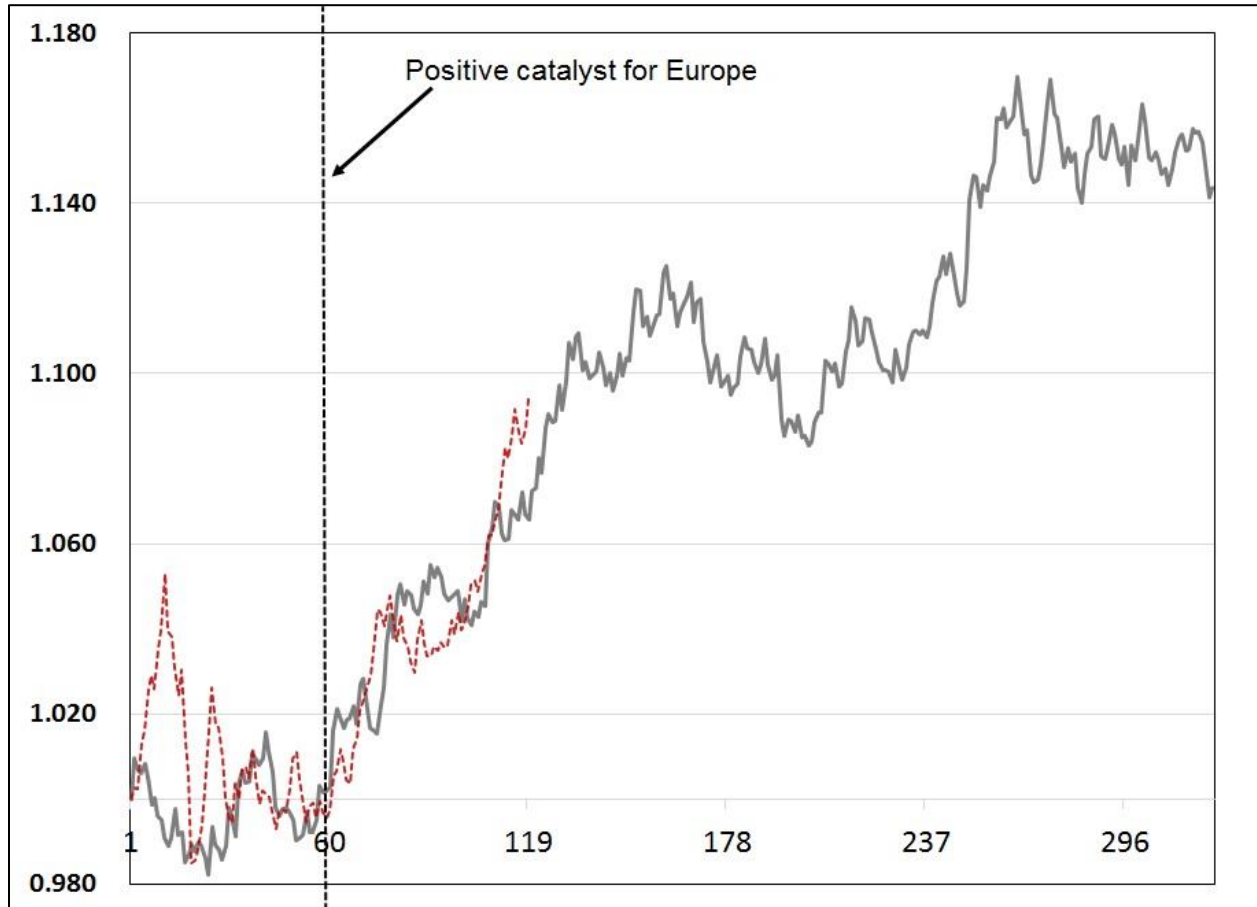
Event dates: April 23, 2017 and May 18, 2020

Figure 85

EURUSD rolling 40-day peak to trough drawdown after Macron won Round One
Vertical line marks April 23, 2017 (Round One)
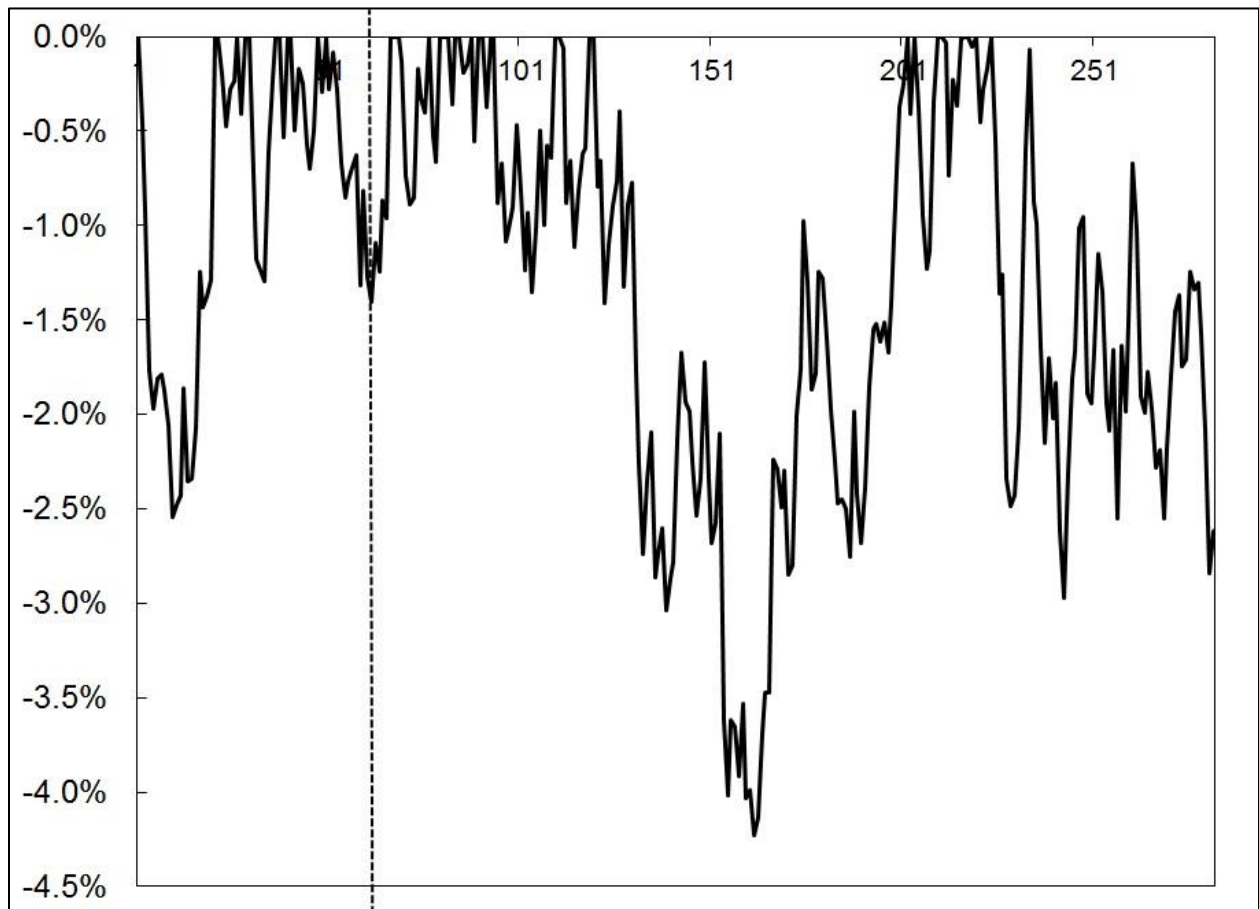
Figure 86

Iterating process for professionals
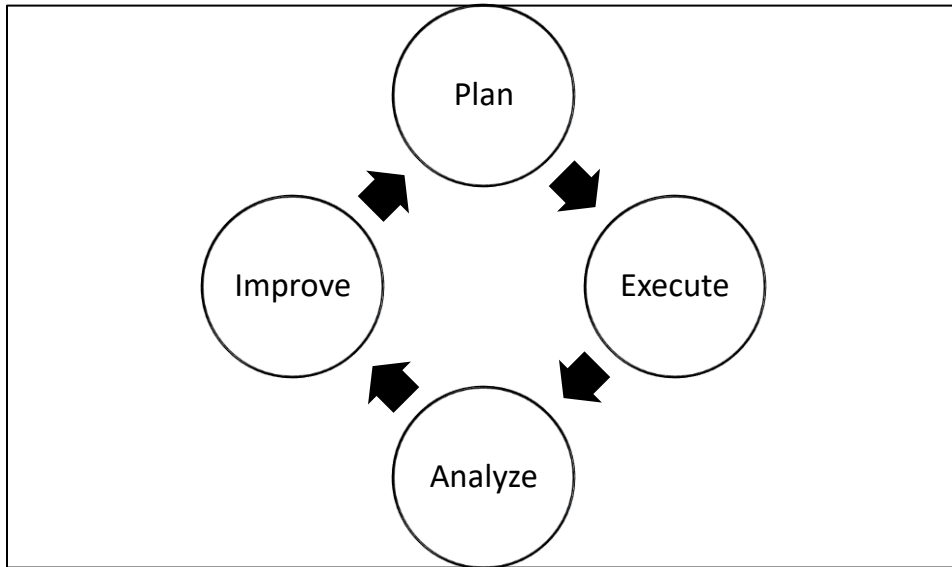
Figure 87

EURUSD rallied hard after the Macron/Merkel handshake in May 2020

Chart courtesy of Refinitiv

Figure 88

What USD position will you hold into FOMC?
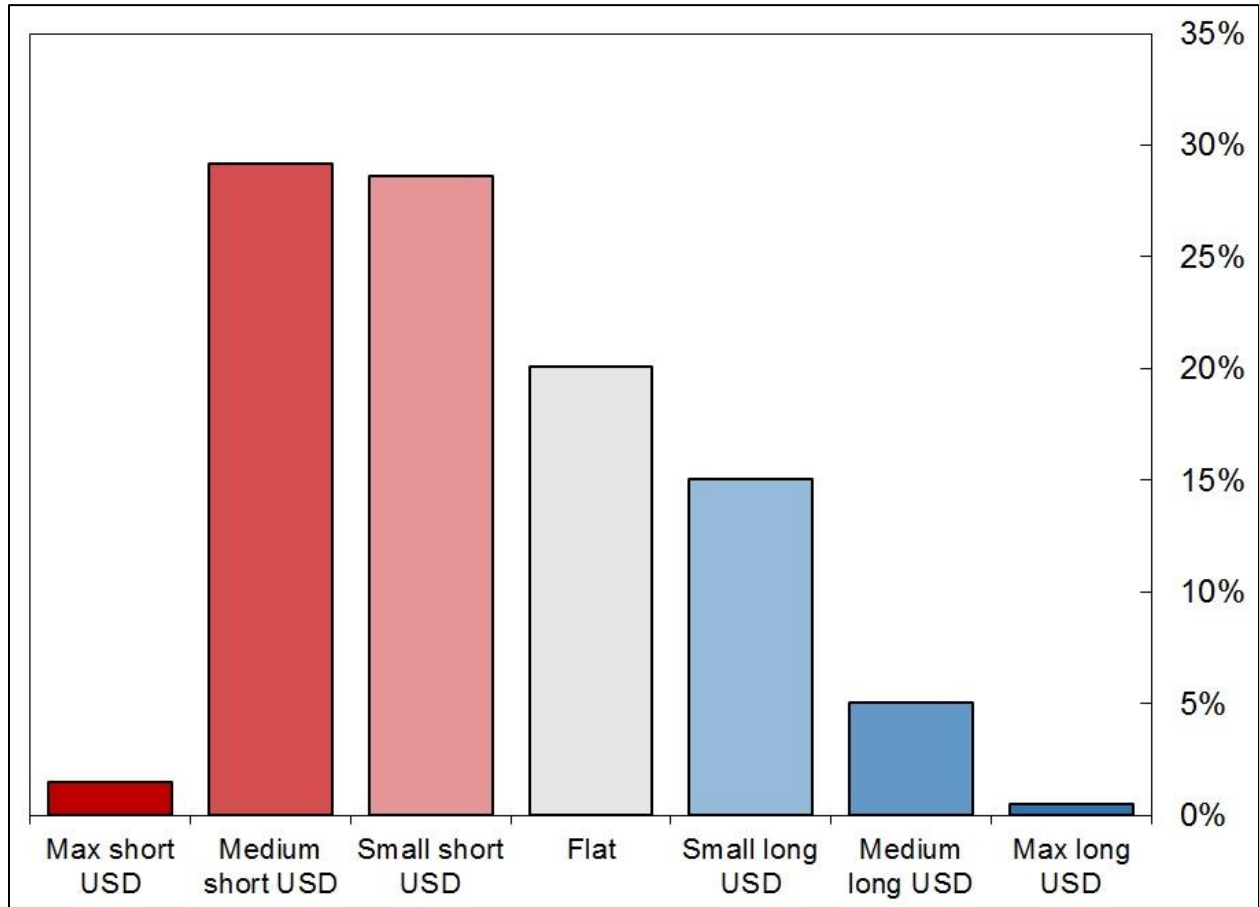
Figure 89

EURUSD hourly chart August and September 2020

Chart courtesy of Refinitiv

Figure 90

VIX marked with vertical bar any time it closed above 40
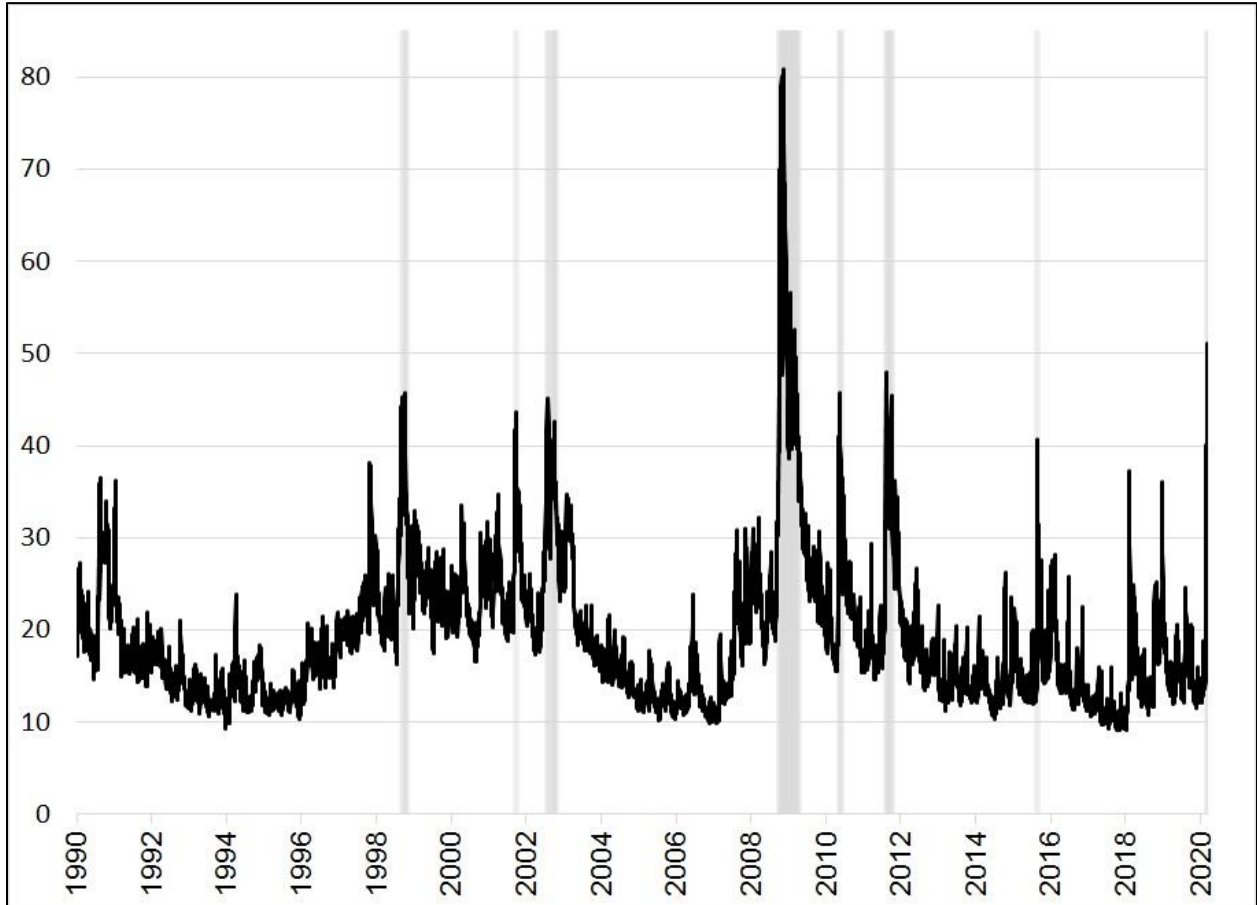
Figure 91

EURUSD (top, black) vs. deviation from the 100-hour MA (gray, bottom)
September 2019 to January 2020

Chart courtesy of Refinitiv

Figure 92

EURUSD (top, black) vs. deviation from the 100-hour MA (gray, bottom)
September 2019 to January 2020

Chart courtesy of Refinitiv

Figure 93

VIX close today vs. S&P futures range tomorrow
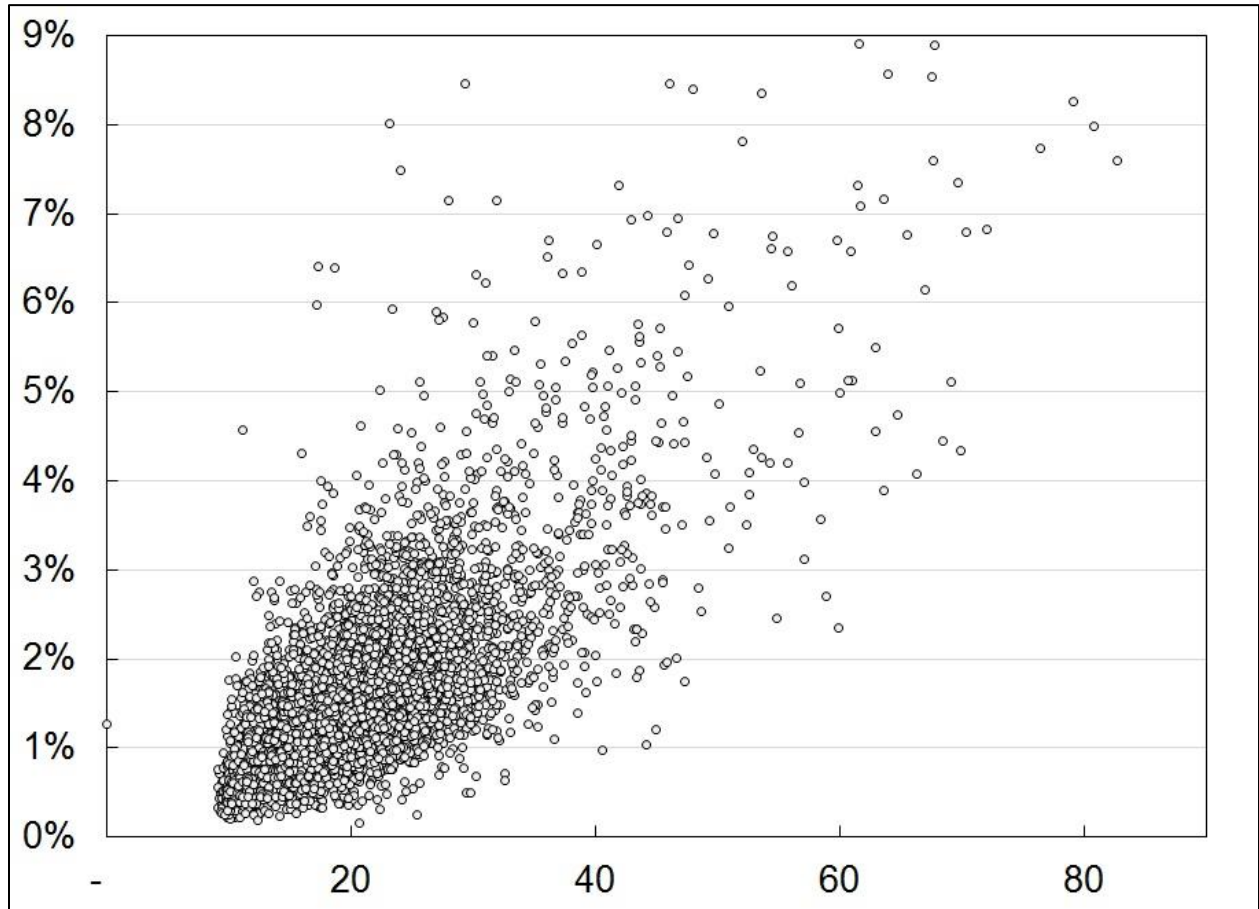
Figure 94

VIX today	Average Range SPX tomorrow	# of contracts where half day range is $20,000
Under 12	0.5%	23
12 to 15	0.7%	16
16 to 20	1.1%	10
21 to 30	1.6%	7
31 to 40	2.3%	5
above 40	3.9%	3

Assume index at 3500 so 1% = 35 points

35 points X $50 = $1,750

Therefore each 1% move costs $1,750 per contract

Figure 95

Where I grew up

Photo circa 1980-something, courtesy of the Donnelly Archives

Quick self-evaluation completed by Brent Donnelly on August 17, 2020

Two strengths in trading	Two weaknesses in trading
1. Understand and love macro. Always have a ton of passion and trade ideas. 2. Unlimited risk appetite.	1. Overtrade (too many positions and/or positions too big). 2. Undisciplined when mental energy is low.
Two strengths in life	**Two weaknesses in life**
1. Rational optimism / sense of humor. 2. Writing / communication.	1. Spread myself too thin. There is not enough time in the day for everything I want to do. Sometimes I choose friends or markets over family. 2. Addicted to change and stimulation. Need to sit still and enjoy the present moment more.
A goal I can accomplish in the next 6 months that will build on one of my strengths Finish this book.	**A goal I can accomplish in the next 6 months that will improve one of my weaknesses** Find a performance coach or psychologist to work on cognitive therapy or behavioral modification to improve discipline and break bad mental habits.

Quick self-evaluation completed by _____ on _____ , 20__

Two strengths in trading	Two weaknesses in trading
Two strengths in life	**Two weaknesses in life**
A goal I can accomplish in the next 6 months that will build on one of my strengths	**A goal I can accomplish in the next 6 months that will improve one of my weaknesses**

Figure 96

By July 2000, it looked like the NASDAQ was gearing up to make new highs again
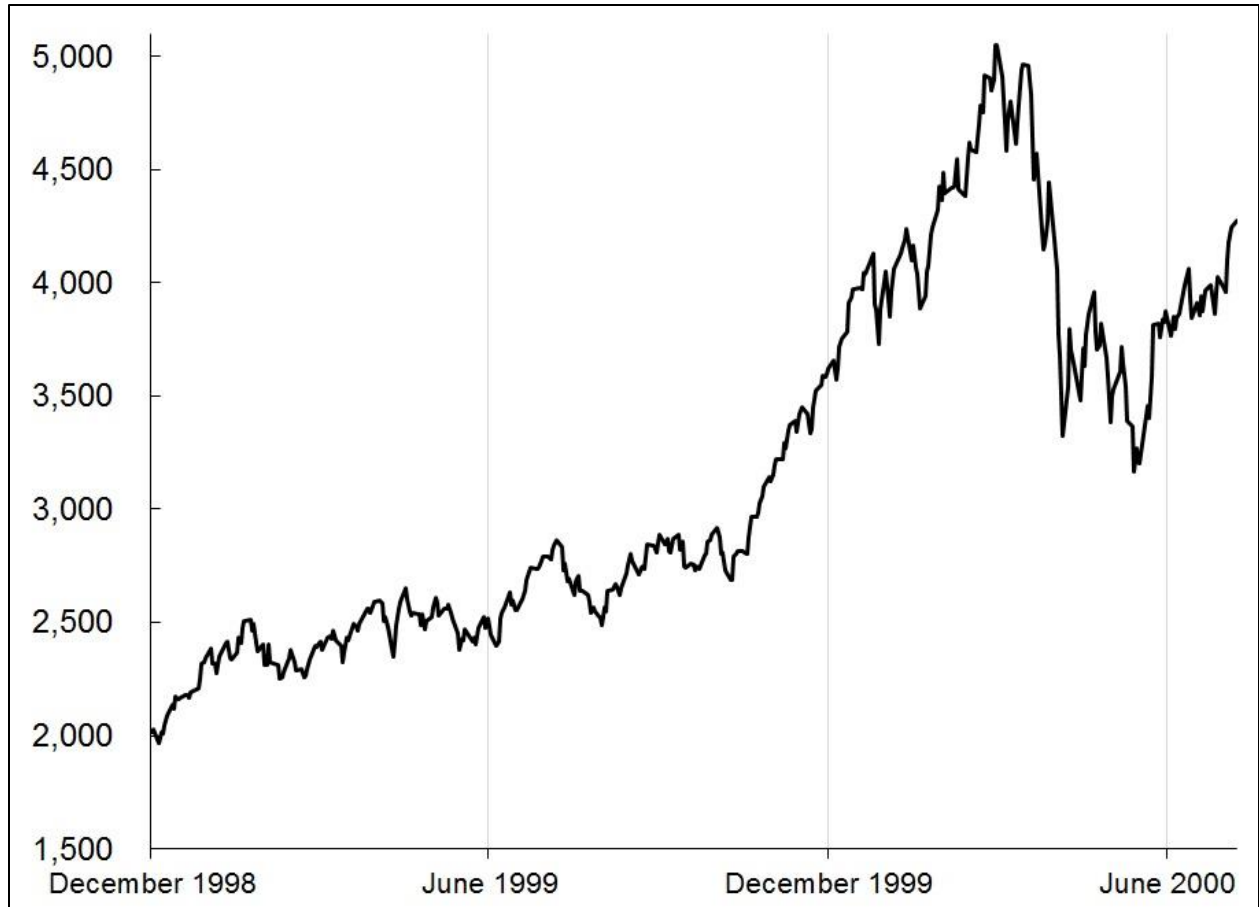
Figure 97

Level 2 screen for Cisco Systems circa late 1990s

Figure 98

JDSU common stock: 1998 to 2019
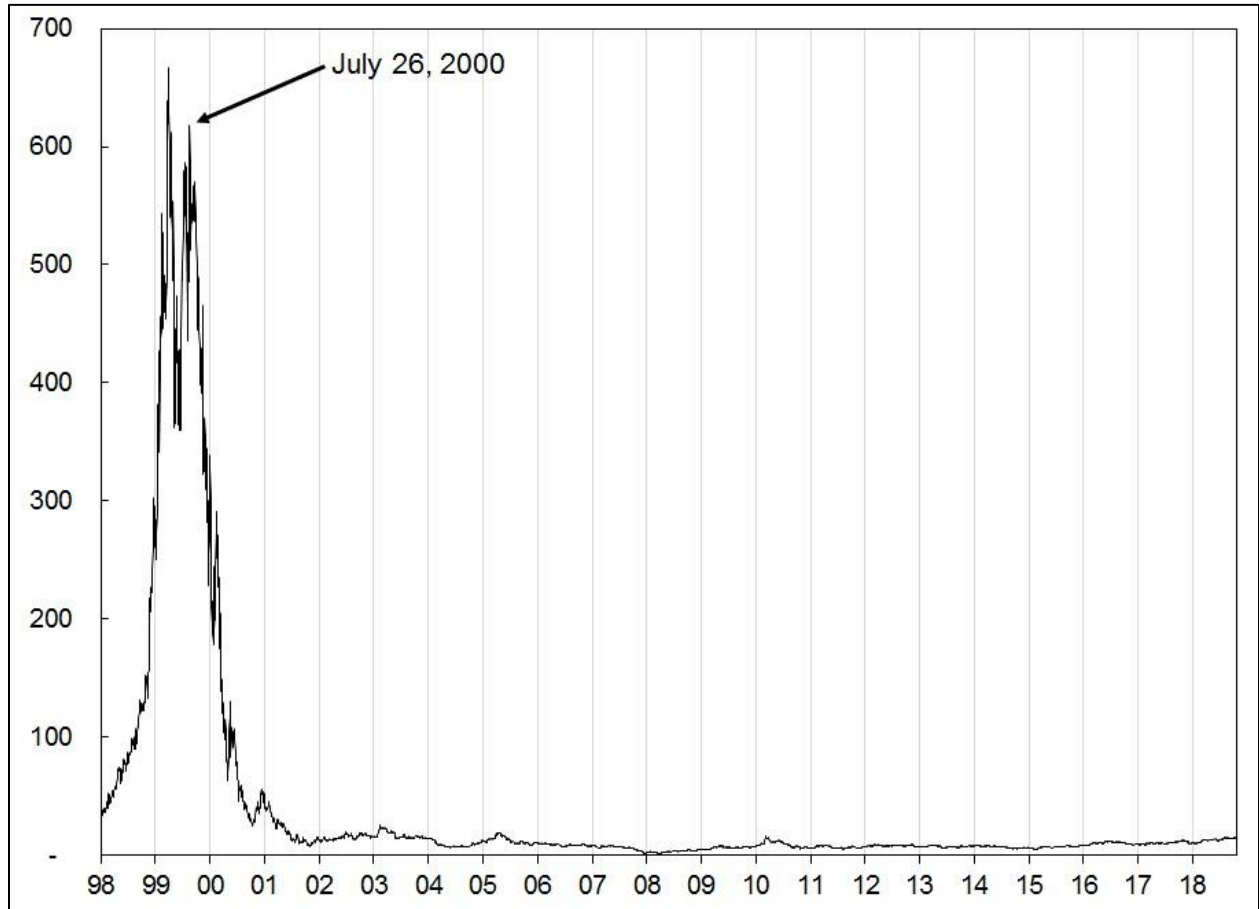
Note that due to reverse stock splits, the prices on this chart don't match the prices in my story.

Figure 99

The NASDAQ eventually came roaring back
Many single stocks never did
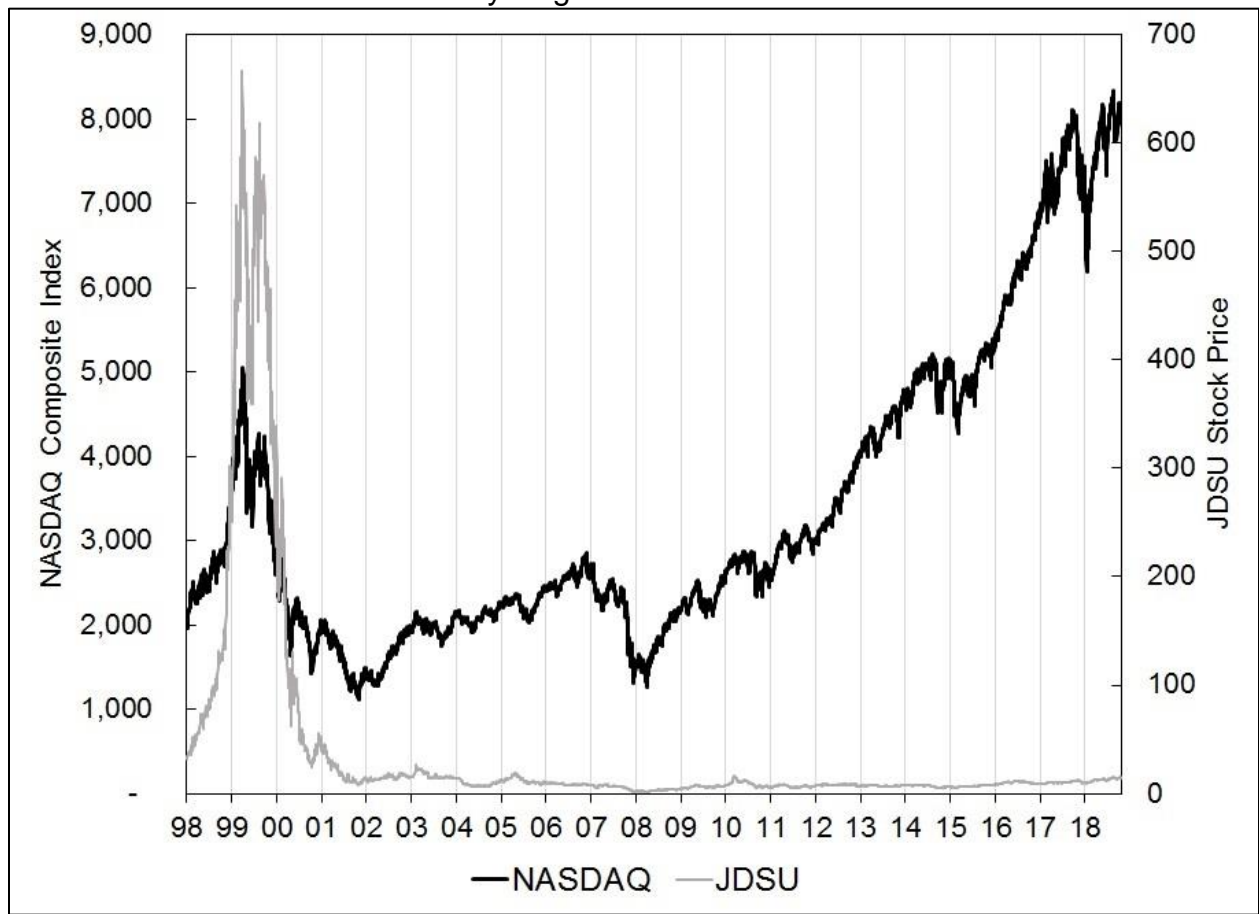
Figure 100

Me

CODA

Remember the flash crash USDJPY story from the start of this book? Now, here's the same story annotated with all the concepts I have outlined throughout. I hope this demonstrates the way good and bad decisions, great calls, dumb mistakes, and heaps of trader bias can all influence a single trading day.

•

FAIRFIELD COUNTY, CONNECTICUT

May 6, 2010

4:55AM

The Connecticut air is cold and damp. The trader moves in silence. He steps quietly through the pitch-black darkness of his Victorian McMansion and toward the door. As he disarms the home security system, the BEEP BEEP BEEP of the keypad code he enters is impossibly loud in the quiet of the pre-dawn morning. He steps out of the house, closes and locks the door, and hops into his car.

As he rolls down the driveway and into the foggy morning, he inserts a Deadmau5 CD and blasts it at high volume in an effort to wake up and get pumped for another day of trading. But this will not just be another day of trading. This will be one of the most insane trading days of his career.

It has been a frustrating year so far. The Eurozone Crisis has been smoldering for months but the trader's attempts to sell the euro have been met with massive countertrend rallies as the Fed embarks on another round of USD-negative QE. They call EURUSD a collision of two garbage trucks. The trader struggles to steer clear of the wreckage.

His strongest view recently has been lower USDJPY. There is risk aversion popping up all over the place as markets worry about a domino effect where Greece crashes out of the Eurozone, followed by Spain, Portugal, Ireland and then finally Italy. Everyone is bearish stocks as the S&P 500 rally from 666 in March 2009 to 1050 now is seen as a mirage; the side effect of a money printing magic trick performed by central bankers. Totally unsustainable. **[grizzly bias]**

EURUSD opened the year at 1.4500 and now trades sub-1.25 so the short trade is now hard to stomach. Even when you know it's the right thing to do, it takes a lot of courage to sell something down >15%. **[anchoring bias]** So the trader has shifted his attention to USDJPY and he expects it to go substantially lower as global risk aversion remains elevated and safe haven currencies like the yen should find demand.

USDJPY has been inexplicably well-bid given recent risk aversion and the Fed "money printing". It just rallied from 90 to 94 on air over the last two weeks. Meanwhile, the best leading indicator for USDJPY is always US bond yields and they have been plummeting for a month. USDJPY looks completely wrong.

The trader stares at the following chart, which shows US 10-year bond yields and USDJPY. The black bars are USDJPY and the dotted line shows US bond yields. Note they usually follow in lockstep. The divergence is a strong signal to the trader that he should be short USDJPY. **[relative value, lead/lag trading]**

USDJPY vs. US 10-year rates November 2009 to May 5, 2010
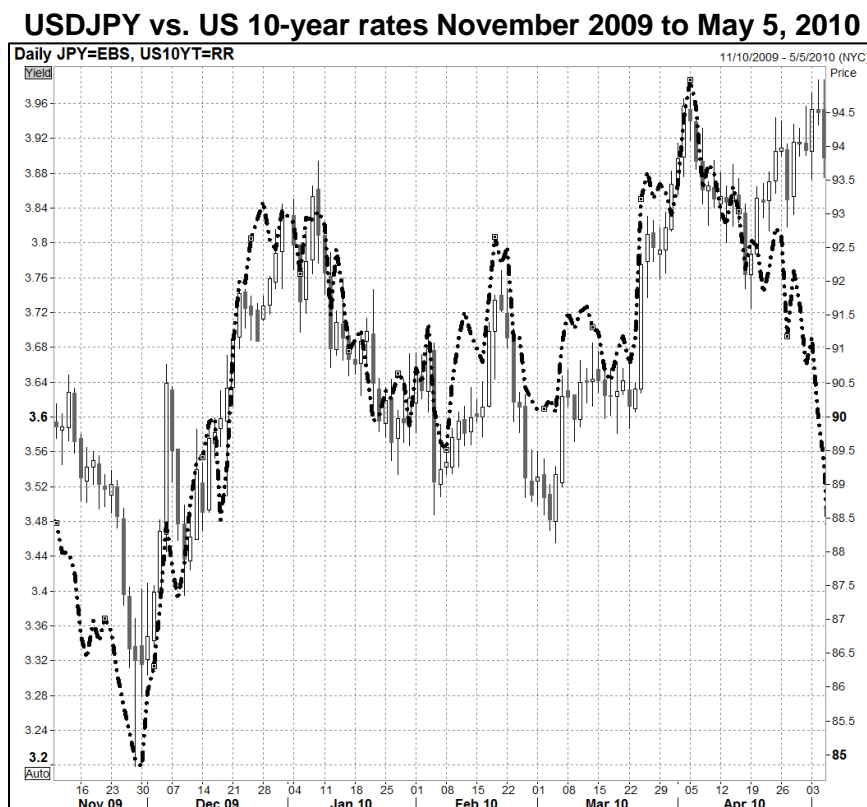
The chart covers the period up to May 5. This story takes place May 6.
Chart courtesy of Refinitiv

If you look in the top right corner, you can see that USDJPY is a bit off the highs, but not much. Two days in a row, the high has been 94.99 **[round number bias]** and USDJPY is now bouncing aimlessly around 93.80 as he rolls into the hedge fund's parking lot. It is still early so there are only three Porsche 911s in the lot right now. More will arrive later. **[money does not buy happiness but it does buy nice cars]**

This USDJPY trade has been tiring and painful as the trader got short at 94.00 with a stop loss at 95.05 and those two daily highs mean he has come within a hair (6 pips, or 0.064%) of getting stopped out, two days in a row. **[endurance]** Holding on to a trade like this is exhausting as the trader's fight-or-flight stress system remains activated for long stretches. *Cortisol overload*. **[ability to handle stress]**

Now, he can relax a bit and let things play out. His target is 91.00. Average daily range has been about 100 points lately so he figures we might get there in the next week or so.

10:45 AM

It has been a boring morning with USDJPY in a tight range. **[hours of boredom, moments of terror]** The sun comes out and it's almost shorts weather outside so the trader decides to go for a run before lunch. **[healthy body, healthy mindset]** Less than a mile into his run, he gets his first indication that this is not a random, ordinary day. His Blackberry rings. Bank sales on the line to tell him that USDJPY has just dumped 100 points in 15 minutes. Trading 92.80 now... Odd. He turns around and sprints back to the office, Spidey-sense tingling. **[intuition is useful, though often overrated]**

By the time he grabs a quick shower and returns to the desk, USDJPY is 91.50. He is short $100 million USDJPY so that puts his profit (aka P&L or profit and loss) around +$2.8 million on the day. That's more P&L than this trader typically makes in an excellent month. A huge haul. **[fat tails and variance]** He scans the headlines and Bloomberg chats and finds no good explanation for what is going on. The stock market is down, but not enough to explain 100 points in USDJPY. This makes no sense. **[it doesn't always have to make sense]** When a trade shows a big profit that makes no sense, he likes to cover it and move on.

The trader buys 100 million USDJPY at 91.50. He is back to flat with no position and nearly 3 bucks of P&L in the bank. **[flat is the strongest position]**

He sits there calmly and processes what has happened. He allows himself to feel happy, just for a second. He stuck to his plan and had the patience to sit with a decent-sized position for three days. **[it's OK to be happy]** He relaxes and basks in the satisfaction of a job well done. **[overconfidence]**

Then... Some dumb voice in his brain says:

2.8 million dollars is an amazing day. But... Maybe I can make 5 million today?

And his hands, as if possessed by some mischievous or evil force, move slowly toward the BUY and SELL buttons. For no reason. And like a moron... He goes long USDJPY. **[don't bleed out on dumb trades with no rationale]**

First, he buys $50 million at 91.50 and then another $50 million at 91.25. It's an impulsive trade with no rationale. **[lizard brain]** His planned stop loss is 90.85 but before he has time to input a stop loss order, he notices S&Ps lurch lower on a huge volume surge. **[automate your risk management process]** He puts on his headset and fires up the S&P squawk to see what's going on.

[If you want to hear the soundtrack to what happens next, Google "Flash Crash squawk" and click on one of the replay videos]

The announcer's voice is strained as he narrates an unexplained fall in stocks from 1150 to 1120. USDJPY skips through 91.00 and the trader's P&L shrinks to $2.0 million. He tries to sell at 90.80 and whiffs. USDJPY is suddenly in freefall. 90.10 trades. 90.00 breaks. USDJPY has just dropped more than four percent in a few hours. A monster move. **[fast markets]** The trader's eyes flick over to his P&L which has now shrunk back to six digits. Two-thirds of three days' work, gone in 60 seconds. **[time dilation]**

And then… Stocks sell off hard out of nowhere. Like… REALLY HARD. The S&P squawk guy is losing it. Screaming. 1100 breaks in the S&P. 1080, 1070, 1060. USDJPY is a waterfall. The squawk loses his mind as he yells:

"We have some BIG paper sellers here… 7 evens are trading. 6 evens are trading! 5 EVENS ARE TRADING!!!. New lows here…" **[herding]**

USDJPY breaks 89.00 and the trader has still sold only 23 million USD, leaving him stuck with a position of 77 million USD. It is a fast market, nearly impossible to transact. He picks up a phone to two different banks and neither one answers. He tries to hit the 88.60 and gets a reject notice from the aggregator. The price feed is stale and crossed now; it shows 89.00 / 88.10, which is not possible. The trader is now down on the day. In the red. His face is hot and feels red like his P&L. Urge to slam fist on desk is rising. **[do not let emotions control you]** The trader feels like he is falling, falling::::::::::::::::::in cinematic slow-mo.

USDJPY stabilizes a bit even as the S&P squawk continues to go nuts.

"65 even offered! 60 trades… 60 even bid, this is the widest we have seen in years," his voice cracks, he's yelling like the announcer at Churchill Downs as the horses turn for the stretch.

"60s trading! 50s trading! 50 at 70 now! We are twenty wide!"

1060 trades in S&Ps now, just about 10% down today, on zero news. **[it doesn't always have to make sense]** Nobody knows what the hell is going on and there is panic in the air. The squawk dude continues to scream. He is pouring gasoline on the trader's agitation.

The trader's P&L is now six figures in the red. Sadness. Anger. He is furious with himself **[forgive yourself]** because he had the right trade, waited patiently for almost three days for it to work, caught the move perfectly according to plan **[stick to the plan, you win]** … And then flipped the other way on a whim, for no reason and gave everything and more back in half an hour. **[when you don't stick to the plan, you lose]** $2.8 million is a good month for this trader. He just made and lost that much in less than two hours. **[time dilation]**

I am an idiot. How did I get into this mess?

He needs to make a decision here and quick but he realizes that he is flooded. **[Alpha Traders are self-aware]** It is impossible to make a good trading decision when you're flooded. **[Alpha Traders make rational, quality decisions]** He needs a second to clear his mind. He tears off the headphones, drops them on his desk, and stands up.

He walks over to the window and tries to find a moment of lucid calm. He has been through these emotional storms before and knows how to get back to shore. **[experience is an asset]** He stares over the waters of the Long Island Sound. Gradually, his heart rate lowers. Clarity slowly, slowwwwly returns. His lizard brain retreats and his rational mind takes over. **[System 1 vs. System 2]** He talks to himself, out loud:

It doesn't matter how you got here. What are you going to do about it? 88.00 was the low in March. It's a massive level. The panic is fading. USDJPY is down 700 points in two days and now bonds are reversing lower. **This is the place to buy USDJPY, not sell.**

He returns to his keyboard, puts his headphones back on. The squawk guy has stopped screaming. He is noticeably more composed. S&P futures have bottomed within a whisker of limit down. They are stable but have not rebounded significantly. The bid/offer is super wide so it is hard to tell whether they are moving higher or just bouncing along the bottom. **[how to trade fast markets]**
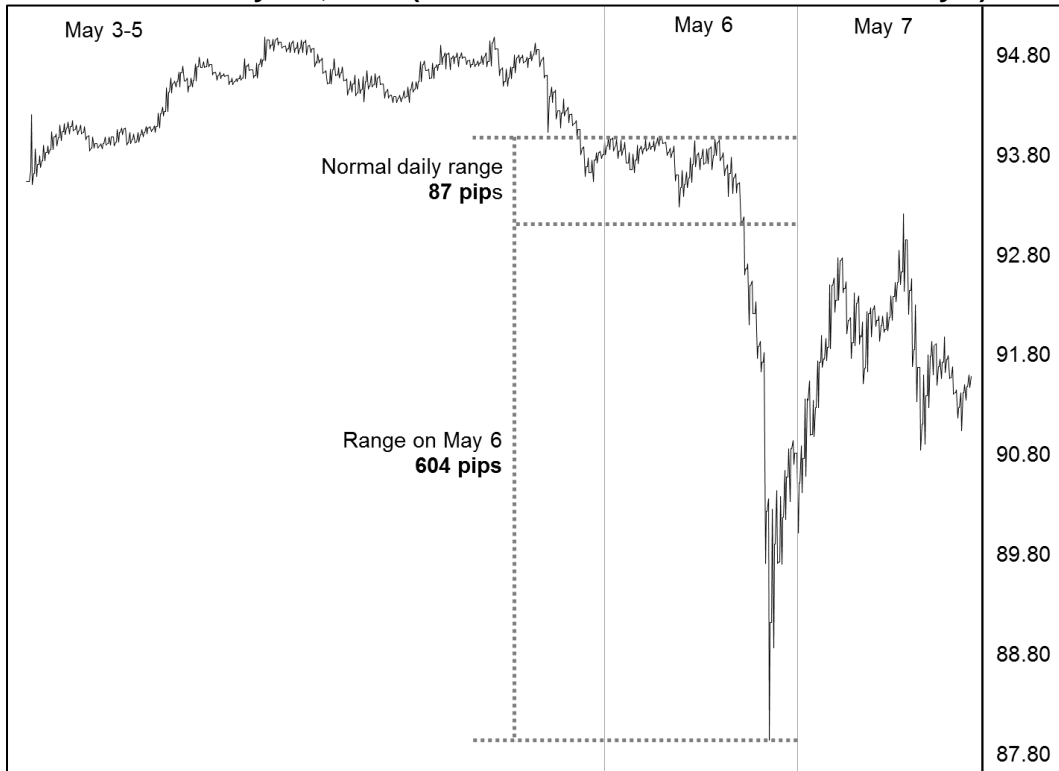
The trader looks around the room and sees the panic and electricity levels have dropped. Not as many phones are ringing. Voices in the room are no longer frantic. **[trading requires focused, decisive action]** He buys 50 million USDJPY at 88.85. And another 73 million at 88.95. Max long now, long $200 million USDJPY. But this time it's thought out, not random and he feels good about what he is doing. He feels confident but fully in control. **[there is a time and place to be a pig]** He calmly thinks forward: *USDJPY could easily rally to 92.50 from here. When you catch a turn like this, you can be greedy.*

He leaves a stop loss for half his position (sell 100 million USDJPY at 87.94) **[automate your risk management]** and then sits back to let the thing play out. He has his plan and now he knows all he can do is watch and see if it works. There is one more frenetic whipsaw and USDJPY briefly prints to a low of 87.95. One pip from his 100 million USD stop loss. Amazing luck. **[quality decisions sometimes look like luck]** Seconds later, stocks stabilize, and then it's like everyone realizes all at once that whatever the heck just happened... It's over. **[markets are efficient most of the time, but not always]**

USDJPY is paid at 88.70, then up through 89.50. It breaks 90.00 and as it hits 90.40, the trader flicks his eyes to the P&L. It is almost exactly back to the level where it peaked earlier: $2.8 million. He praises the trading gods and squares up. NICE! **[anchoring bias]**

Here's the chart of that day in USDJPY:

USDJPY May 3-7, 2010 (US stock market Flash Crash was May 6)

May 3-5

May 6

May 7

94.80

93.80

Normal daily range
87 pips

92.80

91.80

Range on May 6
604 pips

90.80

89.80

88.80

87.80

The trader made a multitude of both good and bad decisions in the three hours around the 2010 Flash Crash. The trading I describe in this story is a microcosm of everything that can go right and wrong in trading. Traders make good, careful decisions and get rewarded, they make bad decisions and get punished … but sometimes a good decision leads to a bad outcome … or a bad decision is rescued by good luck.

That's it. We're officially done. Thanks again for reading!

THE END

APPENDIX A: FURTHER READING

TRADING CLASSICS

Market Wizards (series), Jack Schwager (1989)
Reminiscences of a Stock Operator, Jesse Lefèvre (1923)

LUCK VS. SKILL, PROCESS VS. OUTCOME

The Success Equation, Michael Mauboussin (2012)
Thinking in Bets, Annie Duke (2018)

BE DISCIPLINED

Willpower: Rediscovering the Greatest Human Strength, Baumeister and Tierney (2012)
The Science of Self-Discipline, Peter Hollins (2017)
The Disciplined Trader, Mark Douglas (1990)

BEHAVIORAL FINANCE BIBLES

Thinking Fast and Slow, Daniel Kahneman (2011)
Irrational Exuberance, Robert Shiller (2000)

GET ORGANIZED

The Seven Habits of Highly Effective People, Stephen Covey (1988)
The Checklist Manifesto, Atul Gawande (2009)
The Power of Habit, Charles Duhigg (2012)

BE SELF-AWARE

The Power of Now, Eckhart Tolle (1997)
Breath, James Nestor (2020)
The Hour Between Dog and Wolf, John Coates (2012)

GET QUANTITATIVE

Fortune's Formula, William Poundstone (2005)
Superforecasting, Dan Gardner and Philip Tetlock (2015)
Fooled by Randomness, Nassim Taleb (2001)
Fooled by Technical Analysis, Michael Harris (2015)
A Man for All Markets, Edward Thorp (2017)
Risk, Dan Gardner (2008)
How to Lie with Statistics, Darrell Huff (1954)

APPENDIX B: 21 WAYS TO SUCCEED AT TRADING AND 13 WAYS TO FAIL

Excellent traders:

1.   Adapt.
2.   Are rational.
3.   Are self-aware.
4.   Do not blow up.
5.   Study metacognition.
6.   Don't mind being wrong.
7.   Can clearly describe their edge.
8.   Understand process vs. outcome.
9.   Use the tight/aggressive approach.
10.   Are experts in the markets they trade.
11.   Are creative and independent thinkers.
12.   Understand variance and the metagame.
13.   Love trading more than they love money.
14.   Fall down, get back up, and keep running.
15.   Work hard, even when they don't feel like it.
16.   Have the discipline to both make a plan *and stick to it.*
17.   Recognize biased thinking (in themselves and others).
18.   Employ a rigorous and systematic risk management process.
19.   Have an unshakable belief in themselves, but are not overconfident.
20.   Are intelligent problem solvers with above-average quantitative skill.
21.   Have the courage to put on high conviction trades in maximum appropriate size.

Losing traders:

1.   Overtrade.
2.   Have no edge.
3.   Hate to be wrong.
4.   Are overconfident.
5.   Can't pull the trigger.
6.   Rely too much on simple indicators.
7.   Think much more about trade ideas than risk management.
8.   Always trade the same position size.
9.   Are impulsive and undisciplined.
10.   Rely on System 1 thinking.
11.   Don't read much.
12.   Lie to themselves.
13.   Gamble.

Come in to trade each day with a positive attitude. Do the work. Focus. Behave rationally. Go home. Do it again tomorrow.

That is the 22-word recipe for trading success.