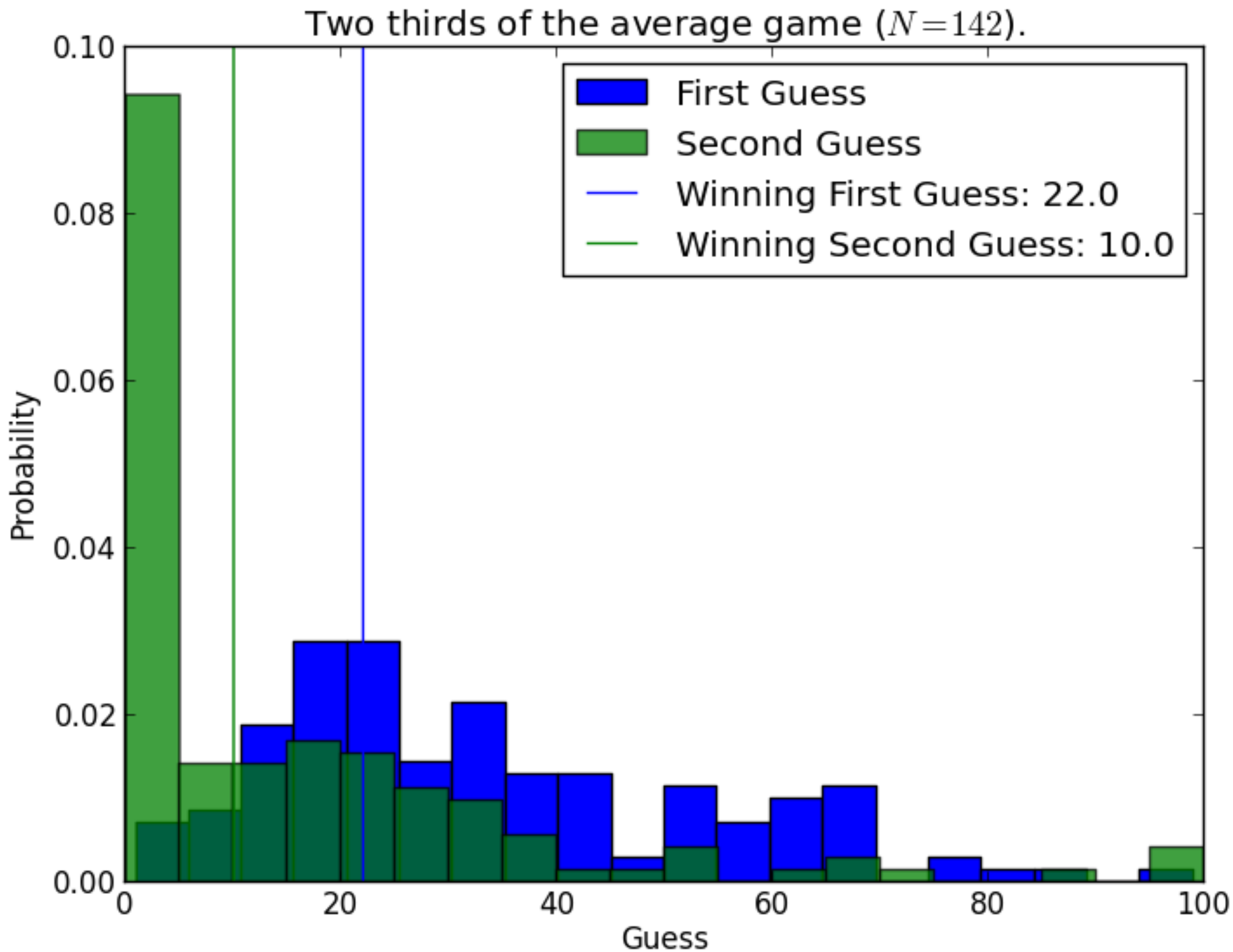
A set of practical observations about investing, speculation and how financial markets work

Grzegorz Link
Opoka TFI S.A.
Faculty of Physics, University of Warsaw

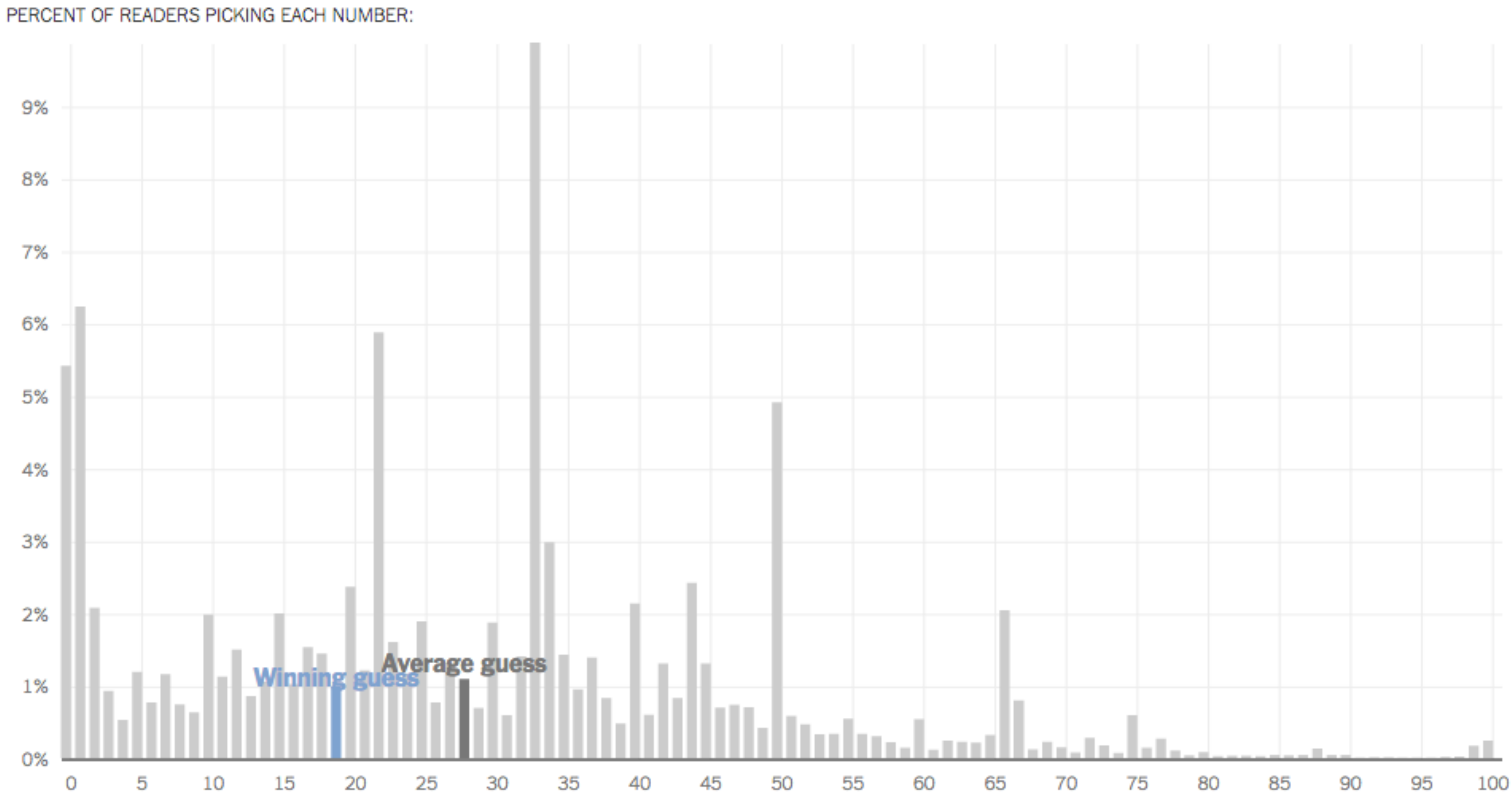
Guess 2/3 of the average

Guess 2/3 of the average



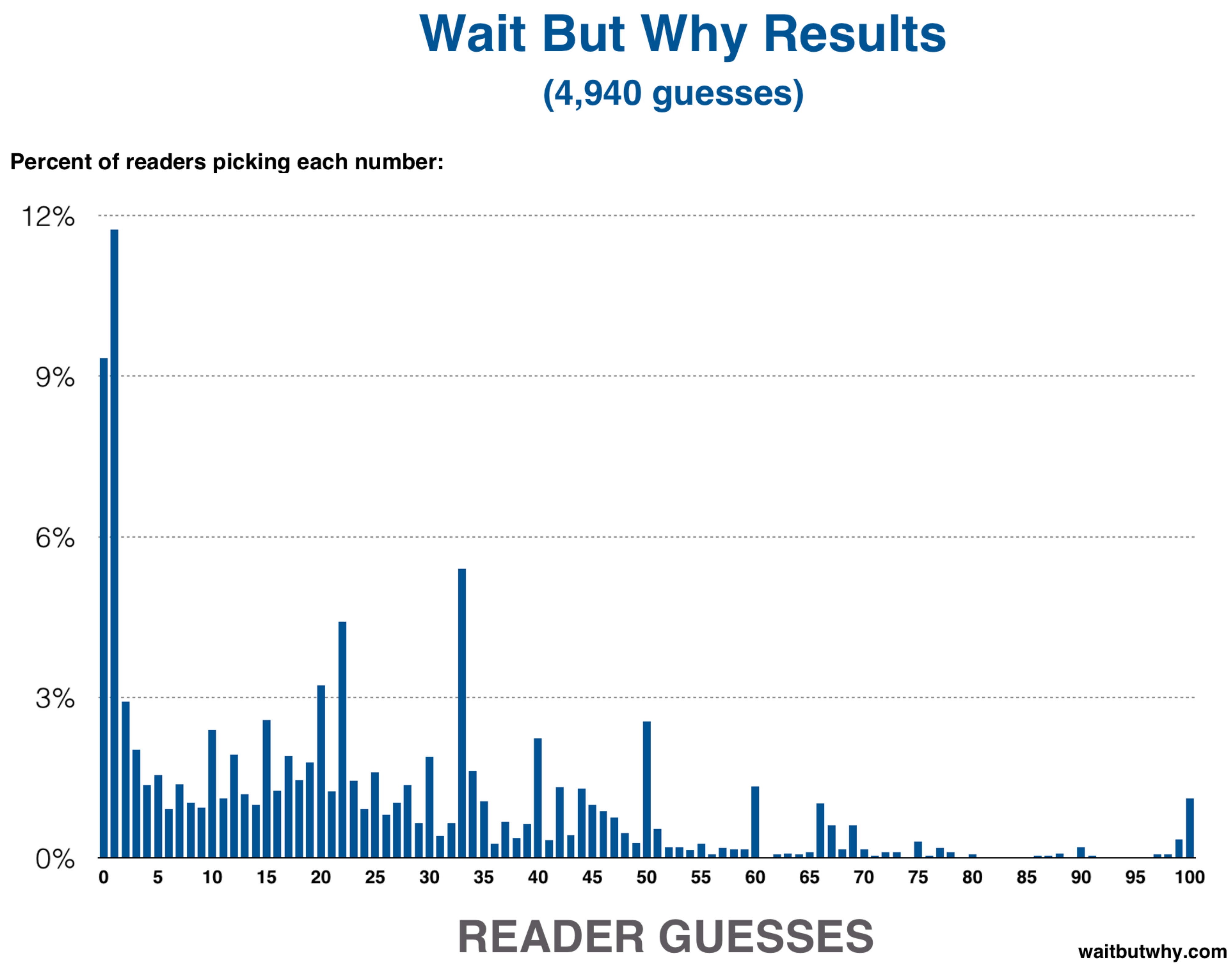
source: http://drvinceknight.blogspot.com/2013/04/two-thirds-of-average-game.html

Guess 2/3 of the average



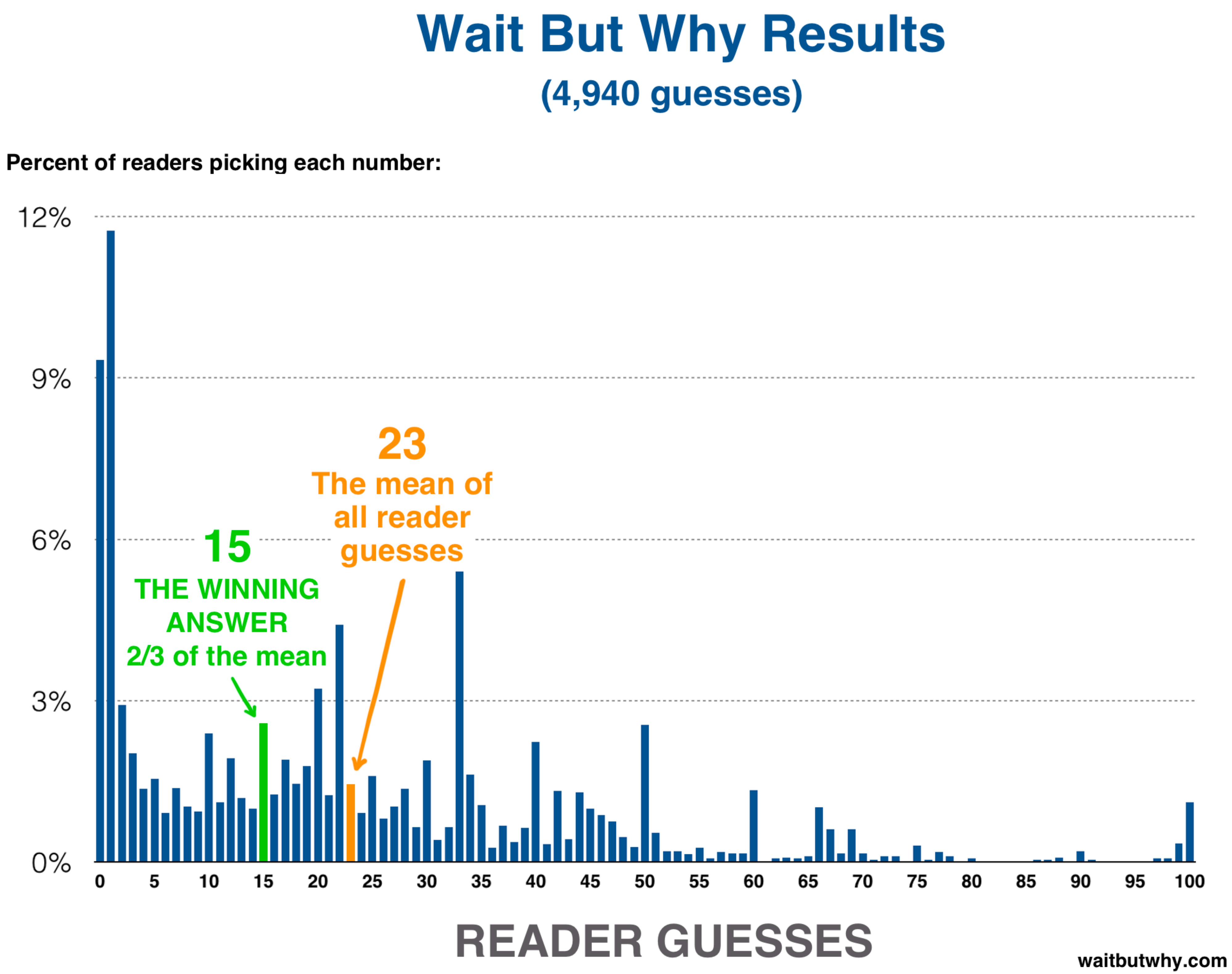
source: https://www.nytimes.com/2015/08/21/upshot/how-readers-fared-in-upshots-number-puzzle.html

Guess 2/3 of the average



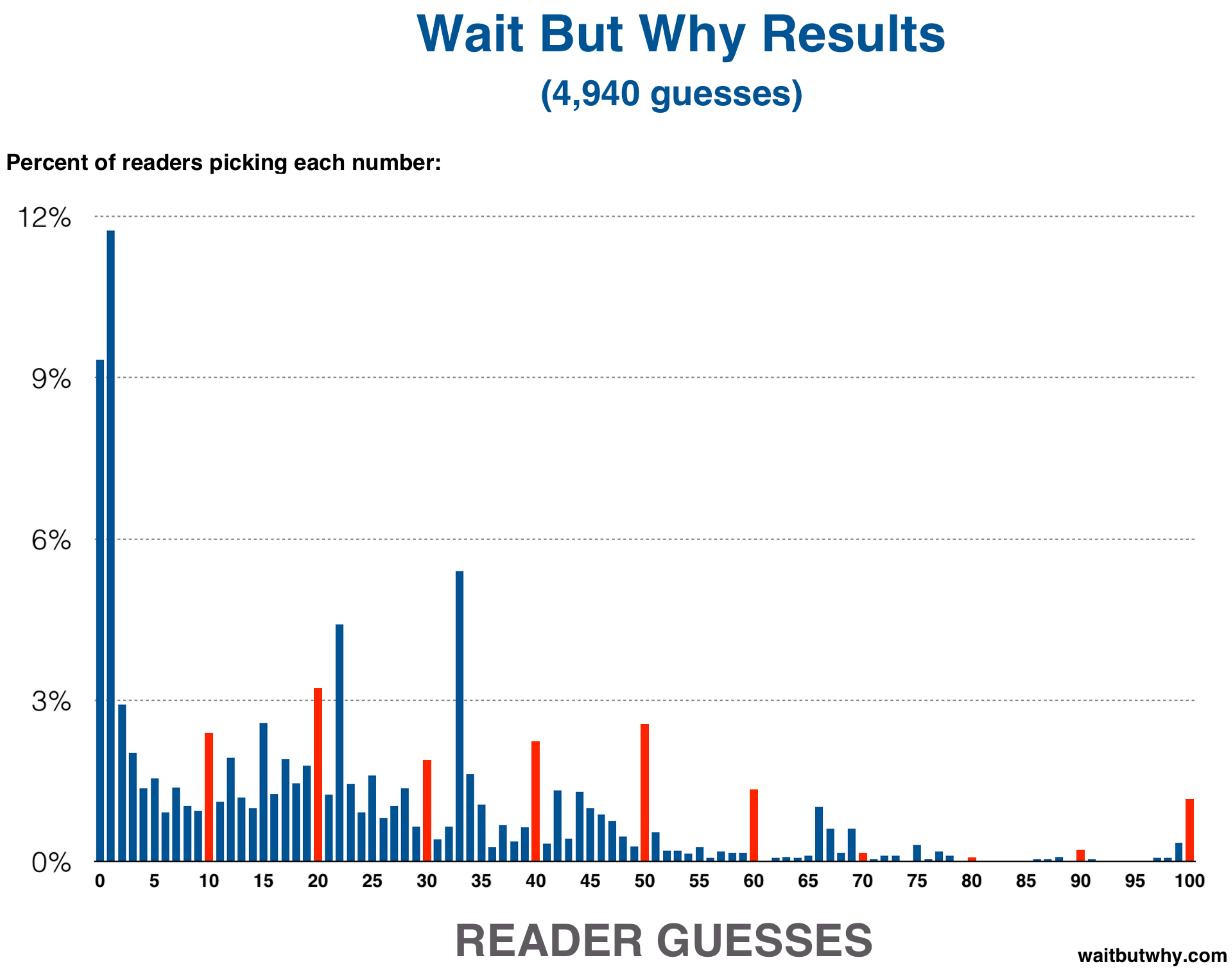
https://waitbutwhy.com/table/can-you-guess-what-other-readers-are-guessing-results

Guess 2/3 of the average



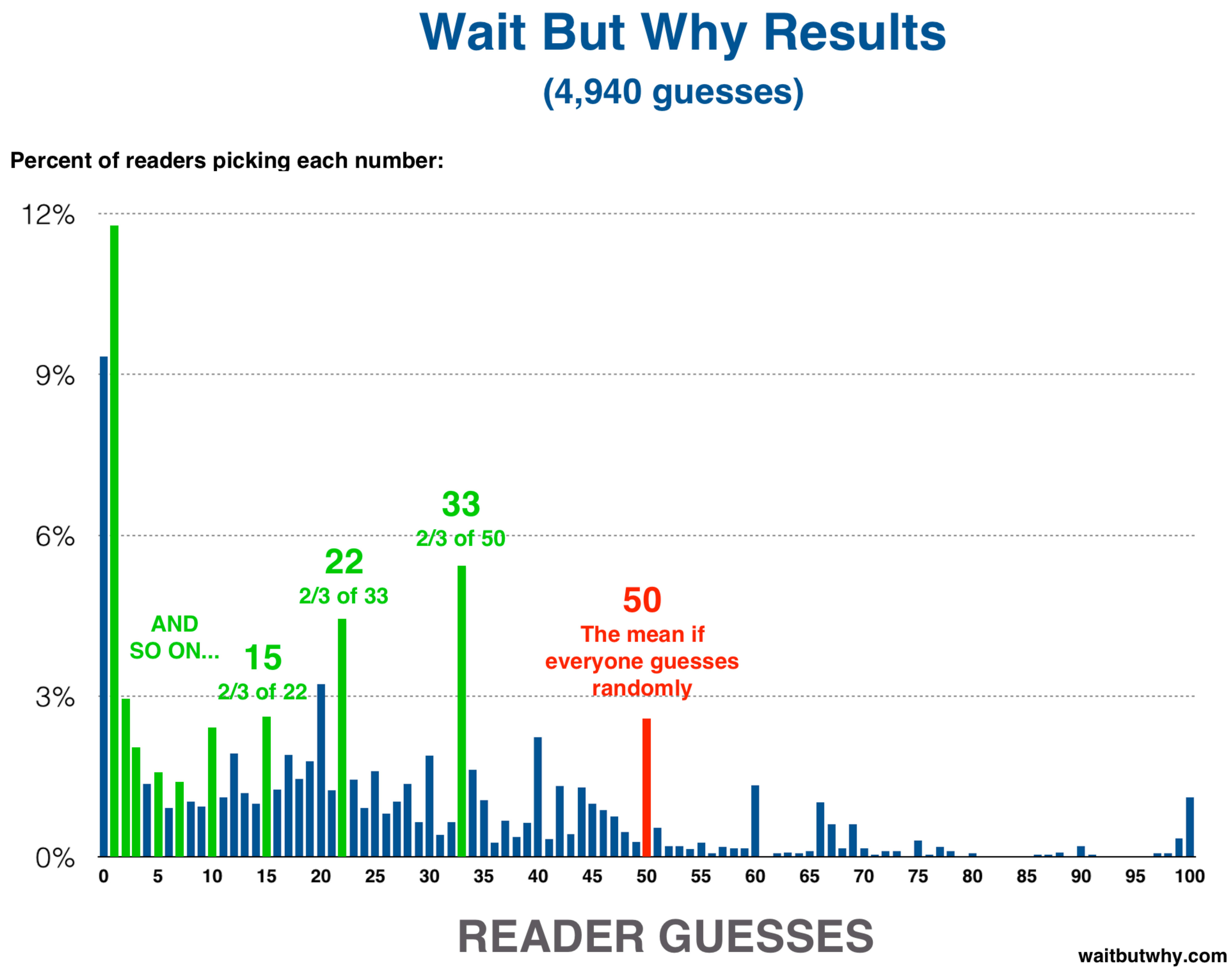
https://waitbutwhy.com/table/can-you-guess-what-other-readers-are-guessing-results

Guess 2/3 of the average



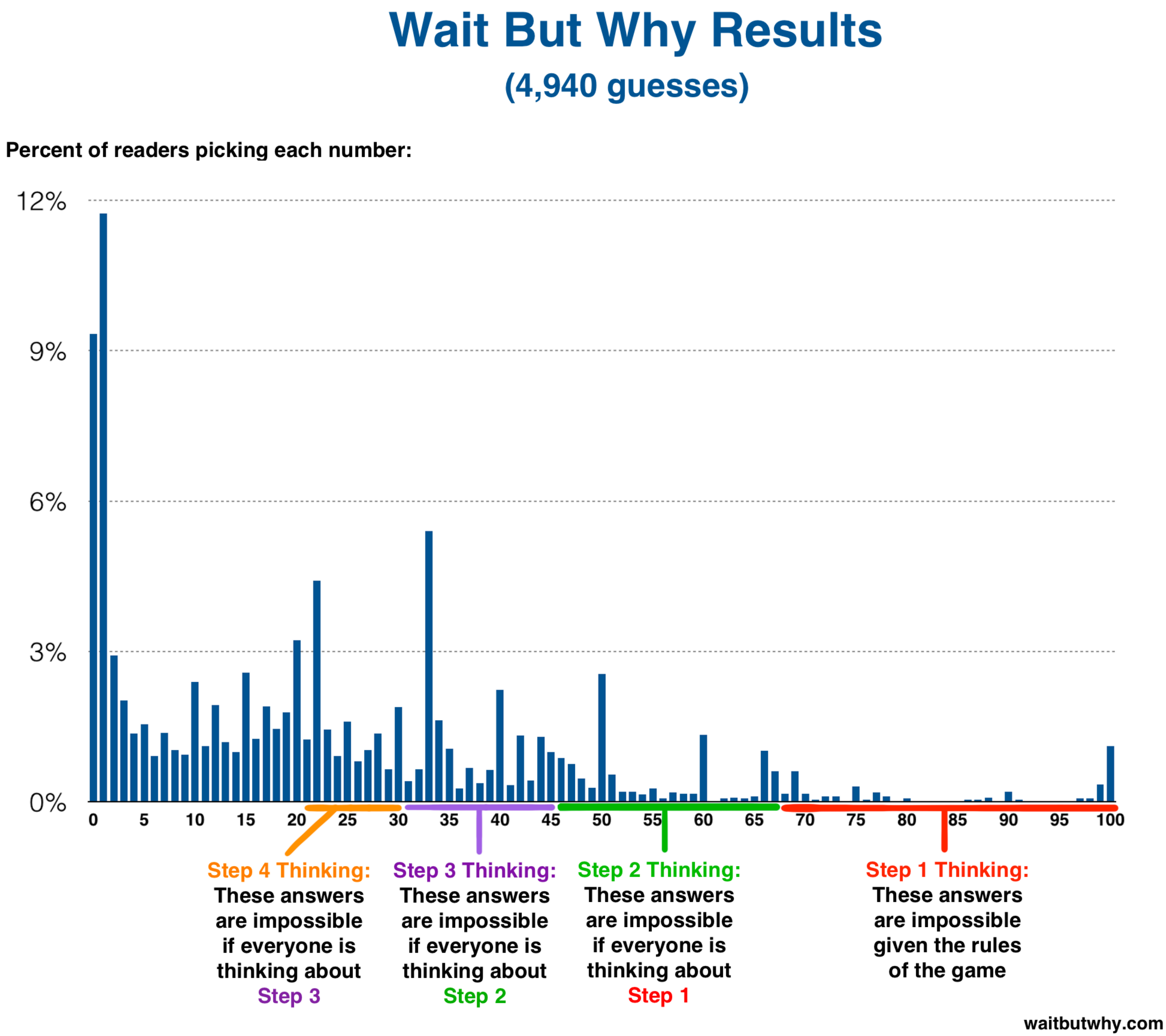
https://waitbutwhy.com/table/can-you-guess-what-other-readers-are-guessing-results

Guess 2/3 of the average



https://waitbutwhy.com/table/can-you-guess-what-other-readers-are-guessing-results

Guess 2/3 of the average



Guess 2/3 of the average

Steps of thinking in the game are similar to steps of thinking about the market

Guess 2/3 of the average

Steps of thinking in the game are similar to steps of thinking about the market

An inexperienced investor is akin to **step 1** from the previous graph

Guess 2/3 of the average

Steps of thinking in the game are similar to steps of thinking about the market

An inexperienced investor is akin to **step 1** from the previous graph

At the beginning two often choices for stock picking are:

- buy something with very reliable fundamentals (a good company)
- buy something that fell very much (assuming it will rebound)

This is akin to **step 2** thinking

Guess 2/3 of the average

Steps of thinking in the game are similar to steps of thinking about the market

An inexperienced investor is akin to **step 1** from the previous graph

At the beginning two often choices for stock picking are:
- buy something with very reliable fundamentals (a good company)
- buy something that fell very much (assuming it will rebound)

This is akin to **step 2** thinking

As one progresses, one learns to filter out information:
- for a fundamental investor some stocks may appear a lot less liquid and may be subject to price manipulation, one starts paying attention to data publication calendars
- for a statistical investor one starts paying attention to oversold and overbought levels, market cycles and trends, this can be called **step 3** thinking… and so on.

Guess 2/3 of the average

Steps of thinking in the game are similar to steps of thinking about the market

An inexperienced investor is akin to **step 1** from the previous graph

At the beginning two often choices for stock picking are:
- buy something with very reliable fundamentals (a good company)
- buy something that fell very much (assuming it will rebound)

This is akin to **step 2** thinking

As one progresses, one learns to filter out information:
- for a fundamental investor some stocks may appear a lot less liquid and may be subject to price manipulation, one starts paying attention to data publication calendars
- for a statistical investor one starts paying attention to oversold and overbought levels, market cycles and trends, this can be called **step 3** thinking… and so on.

Agent models simulating the market should incorporate this information asymmetry

Guess 2/3 of the average

A perfectly analytical investor should bet **0** or **1** — but this is not what usually wins the game. Usually, with a sufficiently large population of participants the winning guess is between **10** and **20**.

”
”

Guess 2/3 of the average

A perfectly analytical investor should bet **0** or **1** — but this is not what usually wins the game. Usually, with a sufficiently large population of participants the winning guess is between **10** and **20**.

Similarly the stock market is **not perfectly rational** (nor efficient):

Guess 2/3 of the average

A perfectly analytical investor should bet **0** or **1** — but this is not what usually wins the game. Usually, with a sufficiently large population of participants the winning guess is between **10** and **20**.

Similarly the stock market is **not perfectly rational** (nor efficient):

- there is an effect of information asymmetry,
- human emotions and biases associated with experiencing heavy losses,
- there are players with different levels of experience,
- and there are investors operating in different time scales.

Guess 2/3 of the average

A perfectly analytical investor should bet **0** or **1** — but this is not what usually wins the game. Usually, with a sufficiently large population of participants the winning guess is between **10** and **20**.

Similarly the stock market is **not perfectly rational** (nor efficient):

- there is an effect of information asymmetry,
- human emotions and biases associated with experiencing heavy losses,
- there are players with different levels of experience,
- and there are investors operating in different time scales.

As a result assets are often mispriced, giving rise to investment (or speculation) opportunity. This mispricing is a source of interesting effects available for study.

Guess 2/3 of the average

A perfectly analytical investor should bet **0** or **1** — but this is not what usually wins the game. Usually, with a sufficiently large population of participants the winning guess is between **10** and **20**.

Similarly the stock market is **not perfectly rational** (nor efficient):

- there is an effect of information asymmetry,
- human emotions and biases associated with experiencing heavy losses,
- there are players with different levels of experience,
- and there are investors operating in different time scales.

As a result assets are often mispriced, giving rise to investment (or speculation) opportunity. This mispricing is a source of interesting effects available for study.

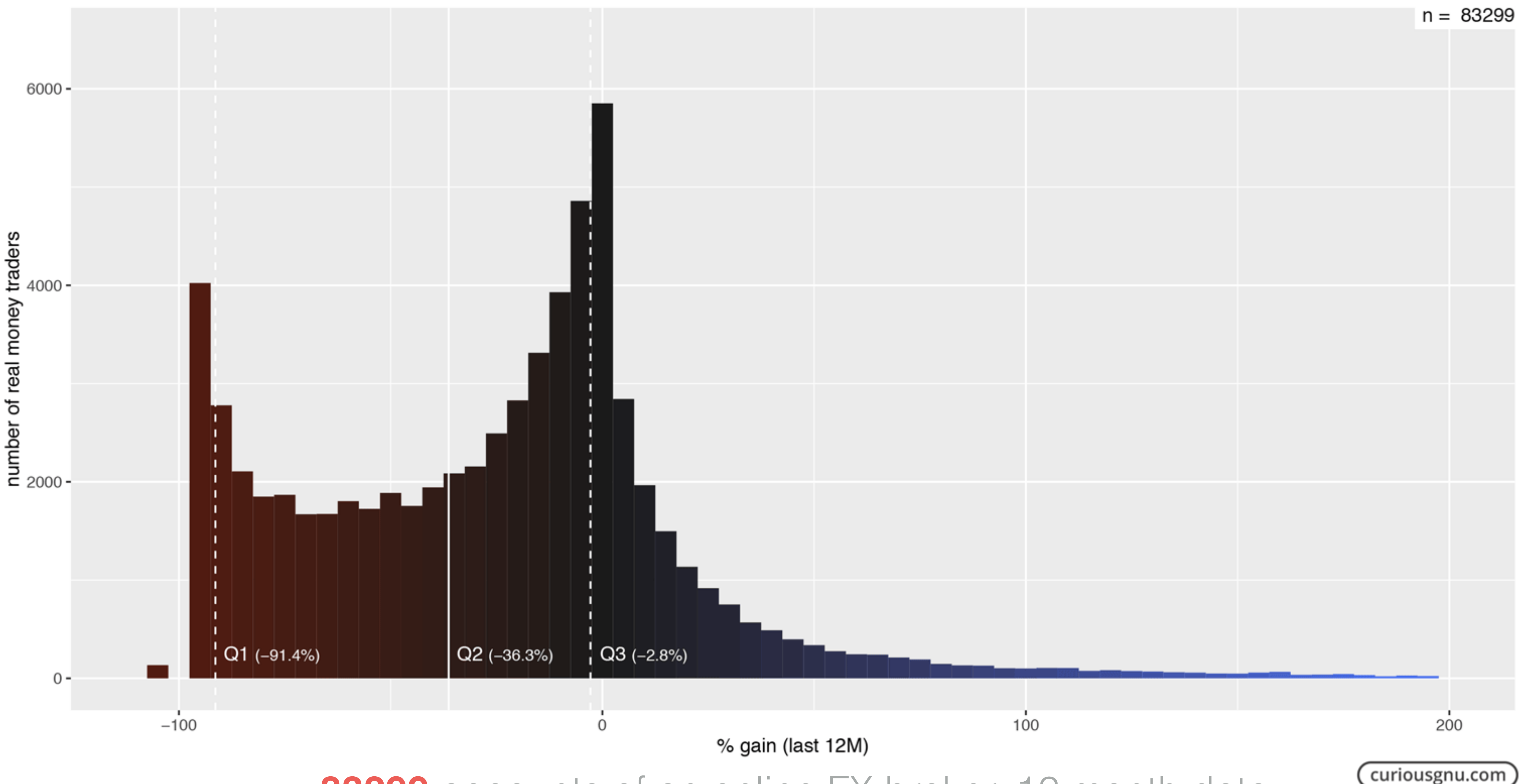
In the words of **Benjamin Graham** (author of the book „The Intelligent Investor"):

„In the short term the market is a voting machine.
In the long term it's a weighing machine."

Speculating

Returns on the FX market

Returns on the FX market



83299 accounts of an online FX broker, 12 month data

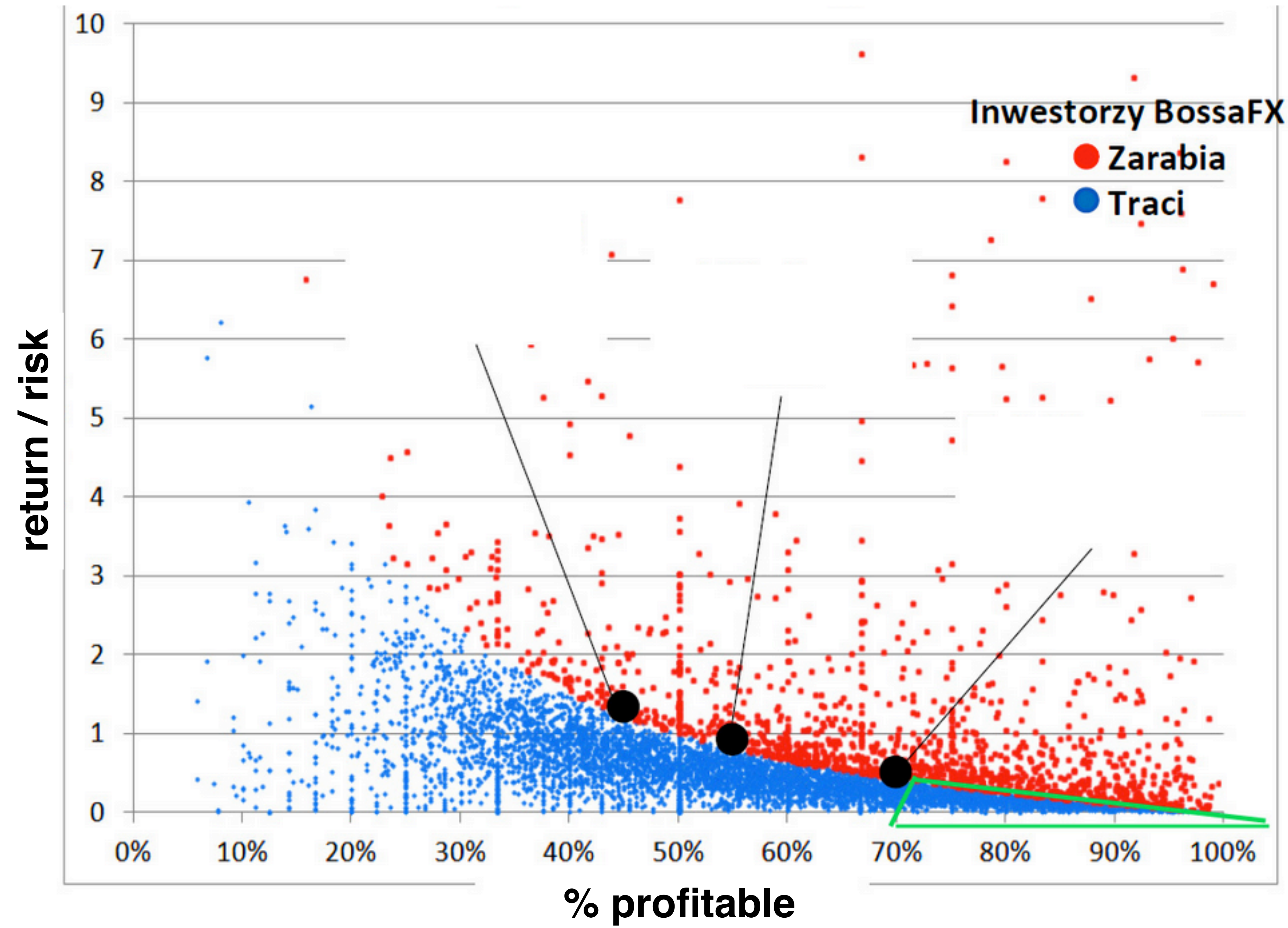
79.5% clients losing money. Over **5**% clients lost all or more than all of their equity.

FX is a near-zero sum game, so the gains of the remaining **20**% are relatively high

source: http://www.couriousgnu.com

Investment styles

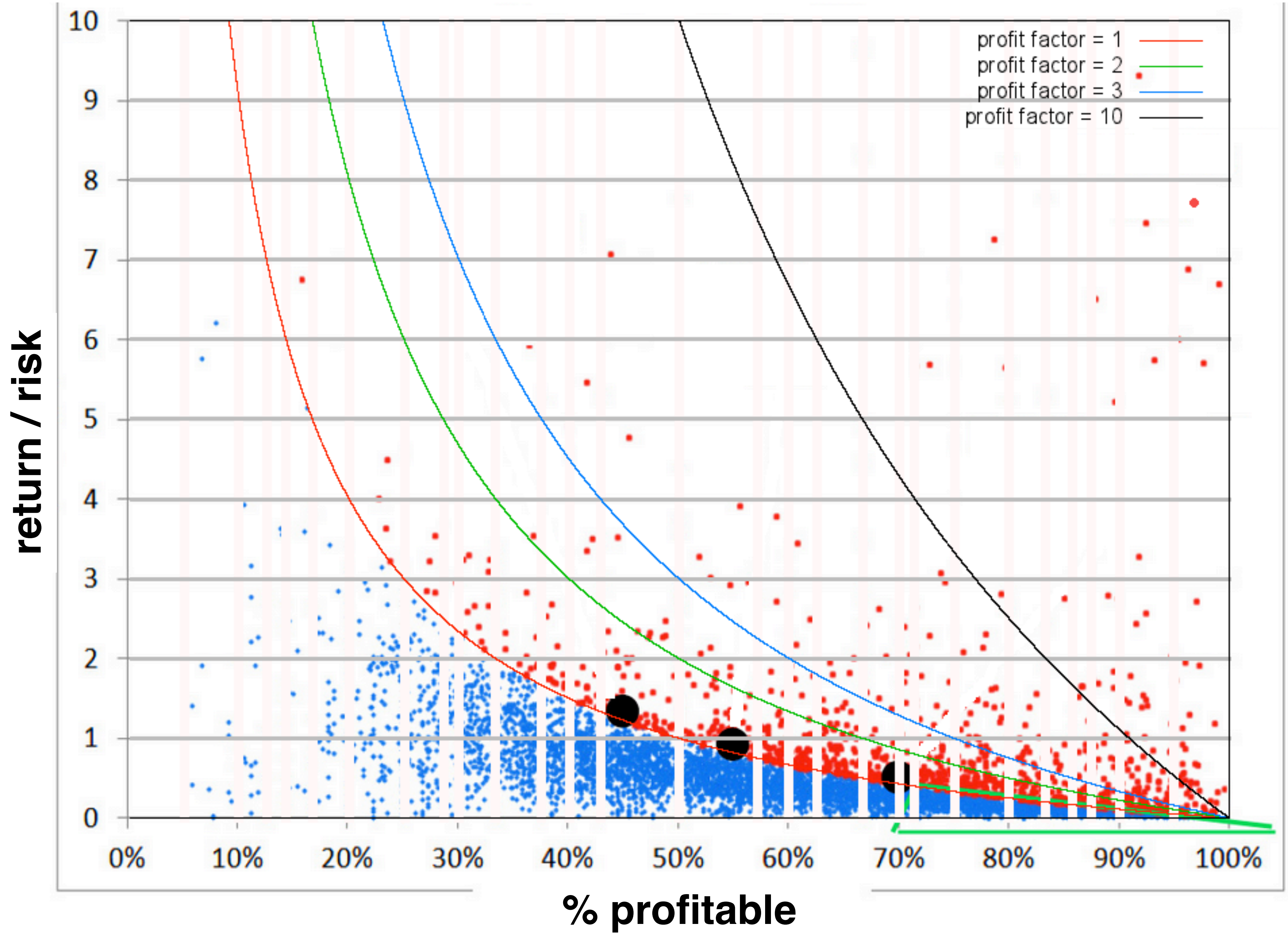
Investment styles



edited; original source:

https://blogi.bossa.pl/2015/02/20/forexowi-milionerzy-mroczny-zakatek/

Investment styles



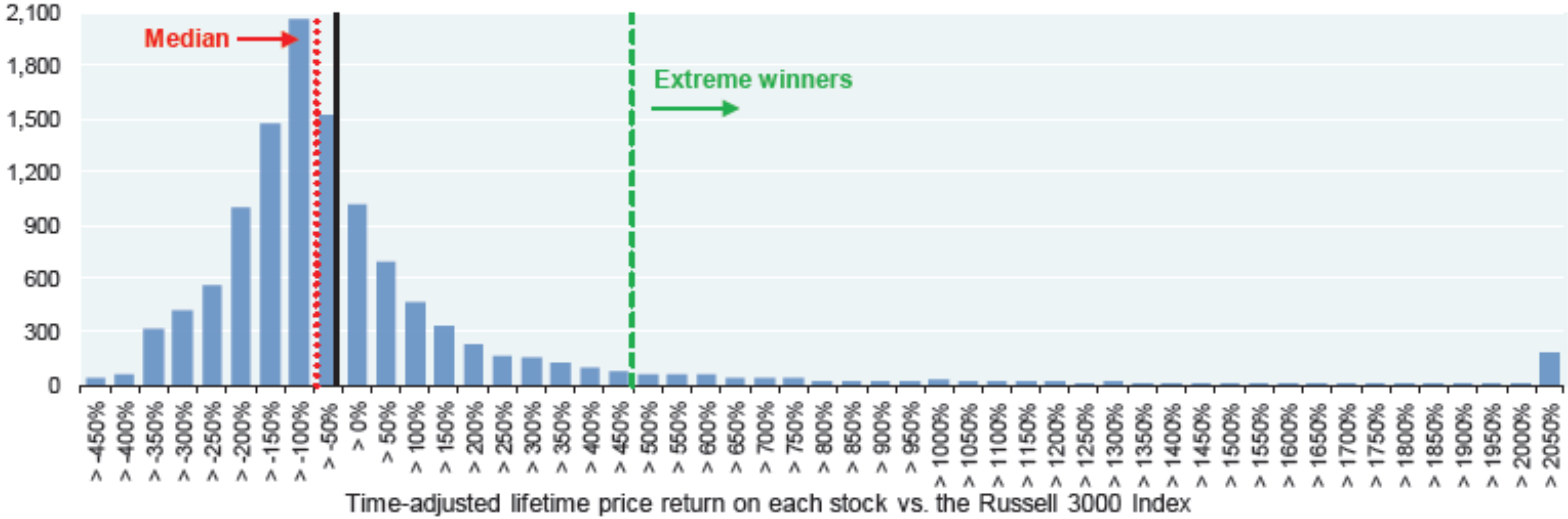
edited; original source:

https://blogi.bossa.pl/2015/02/20/forexowi-milionerzy-mroczny-zakatek/

Investing

Spotting the winners

Spotting the winners



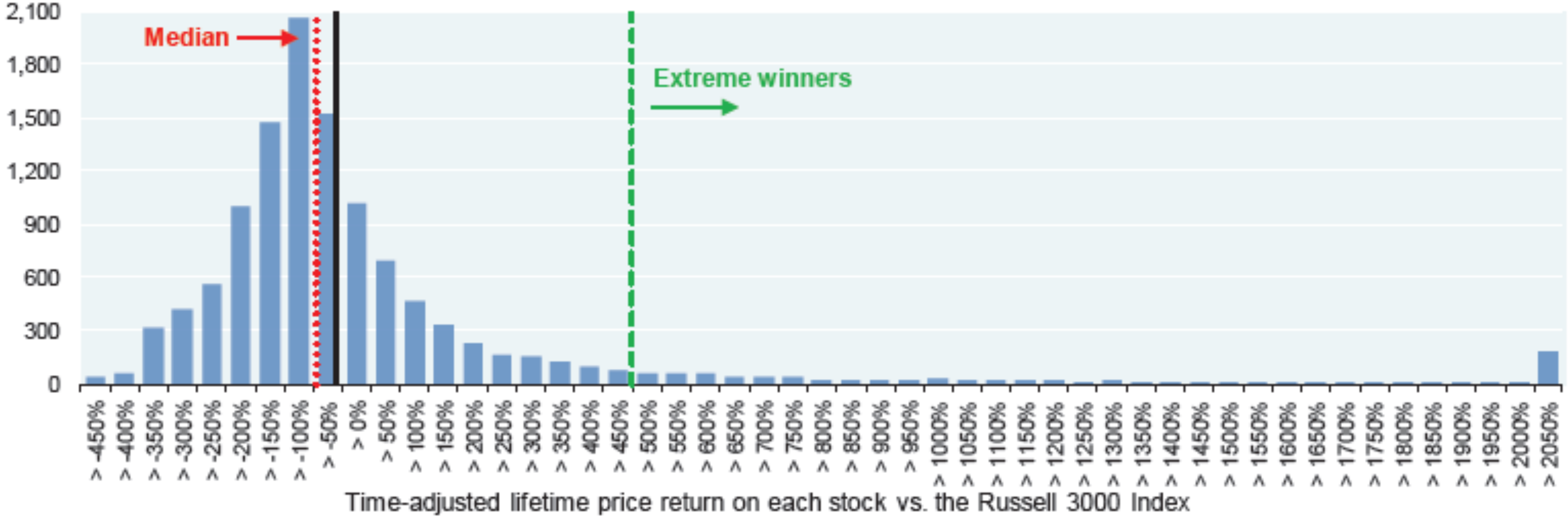
Source: FactSet, J.P. Morgan Asset Management.

source: „The Agony and the Ecstasy — the Risks and Rewards of a Concentrated Stock Position", http://read.jpmorgan.com/i/371035-eotm-special-edition/5

A study encompassing **13 000** companies, being part of the Russell 3000 index at any time between **1980** and **2014** (34 years; small to medium sized companies).

The returns vs the index are shown above.

Spotting the winners



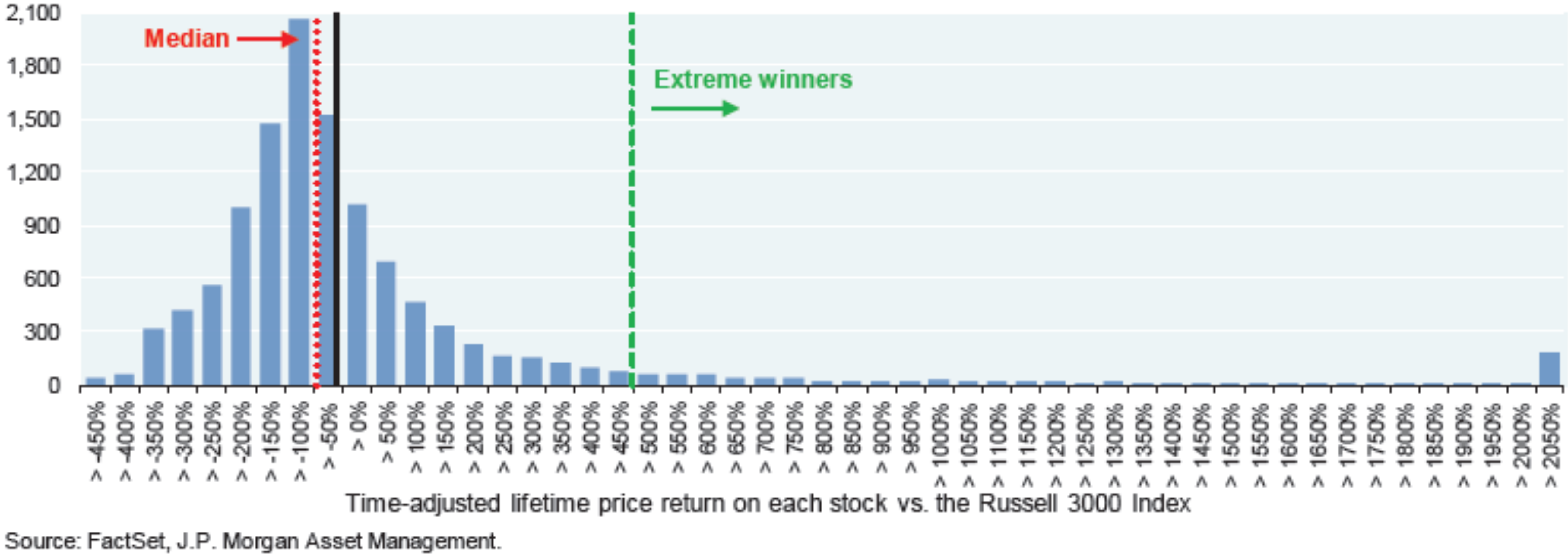
Source: FactSet, J.P. Morgan Asset Management.

source: „The Agony and the Ecstasy — the Risks and Rewards of a Concentrated Stock Position", http://read.jpmorgan.com/i/371035-eotm-special-edition/5

About **40%** of assets experienced an at least **70%** drawdown, after which there was no significant rebound

Also around **40%** of the companies have in all negative returns during their whole existence on the market.

Spotting the winners



source: „The Agony and the Ecstasy — the Risks and Rewards of a Concentrated Stock Position", http://read.jpmorgan.com/i/371035-eotm-special-edition/5

66% of the assets had returns **lower** than the index

7% had returns **much higher** than the index (500% higher than Russell 3000)

Spotting the winners

It is similar for polish stock market data:

(source: https://blogi.bossa.pl/2013/02/20/zwyciezcy-kreuja-stopy-zwrotu-z-rynku-akcyjnego/)

Spotting the winners

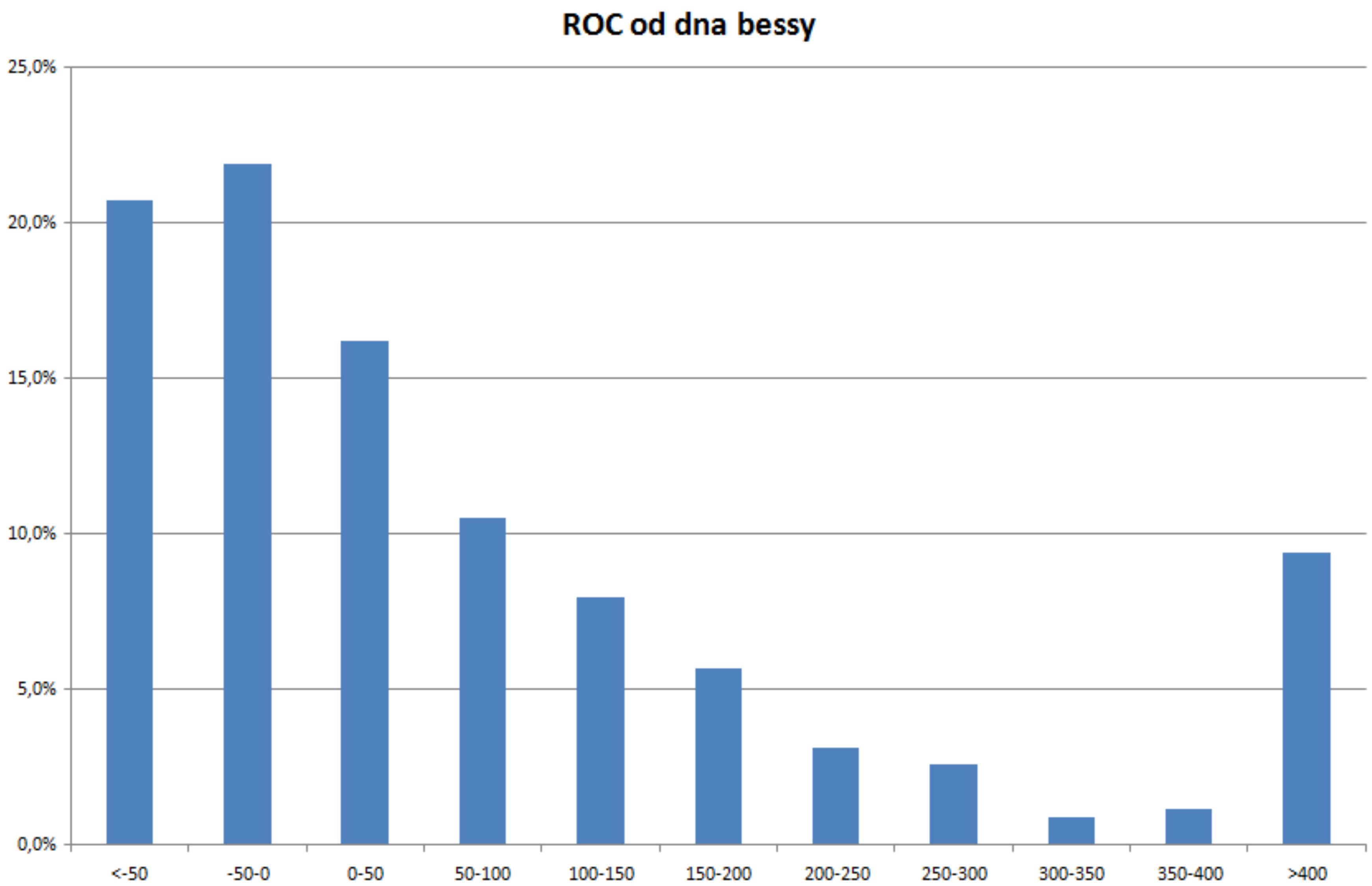
It is similar for polish stock market data:

(source: https://blogi.bossa.pl/2013/02/20/zwyciezcy-kreuja-stopy-zwrotu-z-rynku-akcyjnego/)

Data from February **2009** (the market low) to February **2013** (**4 years**)

The market (WIG Index) rose **99%** in this time period.

Stock returns distribution:



Spotting the winners

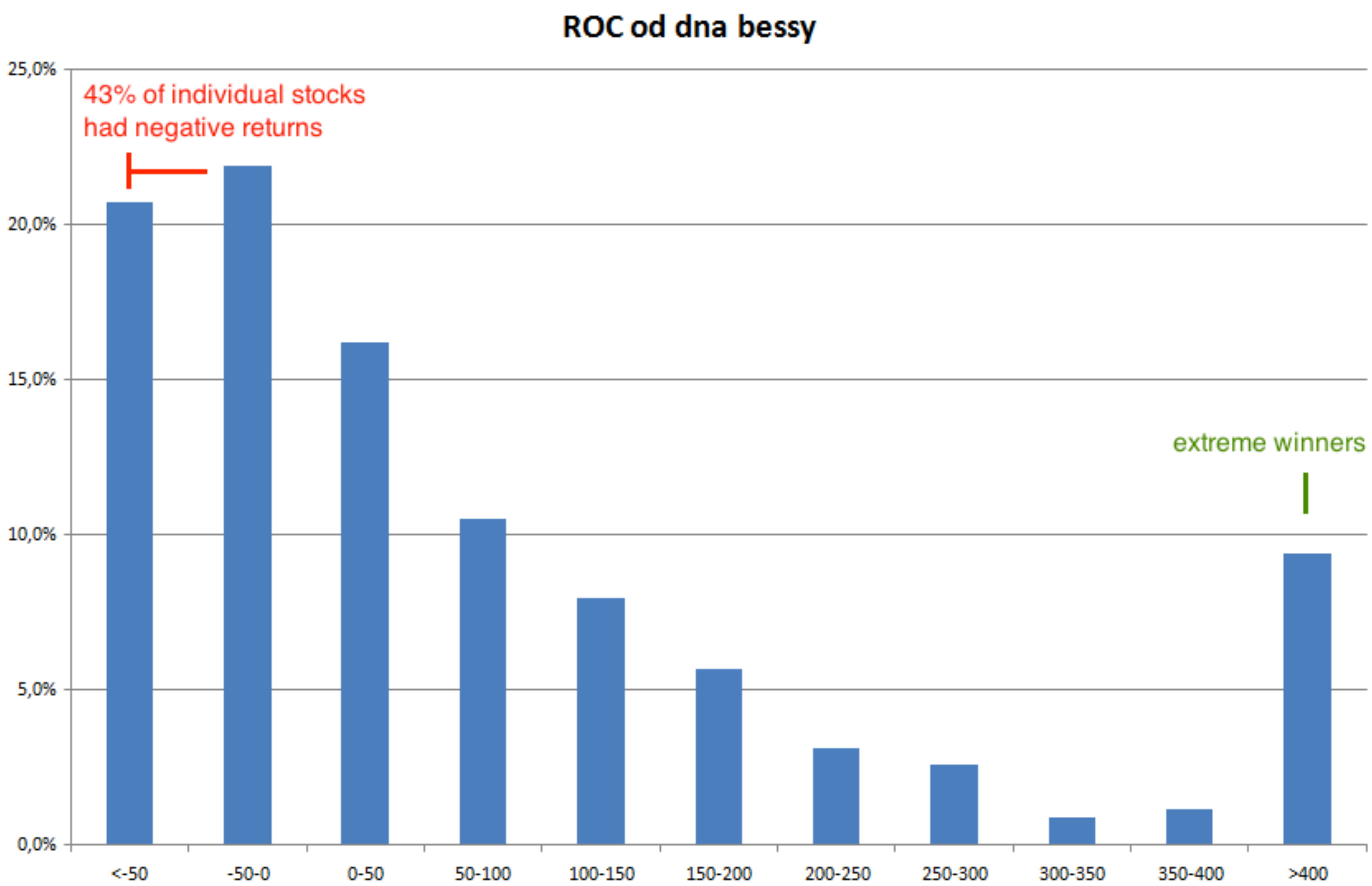
It is similar for polish stock market data:

(source: https://blogi.bossa.pl/2013/02/20/zwyciezcy-kreuja-stopy-zwrotu-z-rynku-akcyjnego/)

Data from February **2009** (the market low) to February **2013** (**4 years**)

The market (WIG Index) rose **99%** in this time period.

Stock returns distribution:



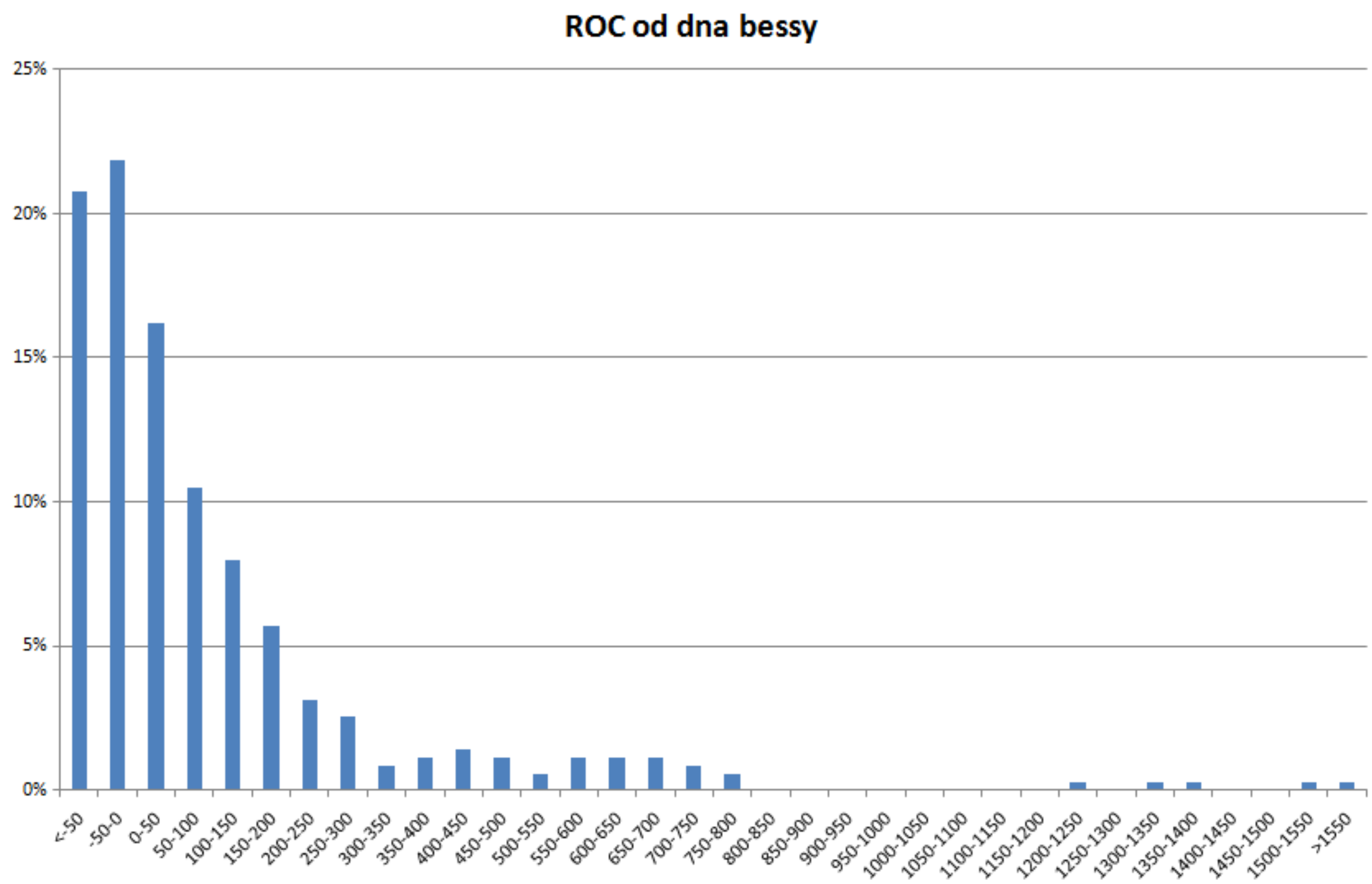
Spotting the winners

It is similar for polish stock market data:

(source: https://blogi.bossa.pl/2013/02/20/zwyciezcy-kreuja-stopy-zwrotu-z-rynku-akcyjnego/)

Data from February **2009** (the market low) to February **2013** (**4 years**)
The market (WIG Index) rose **99%** in this time period.

Stock returns distribution:



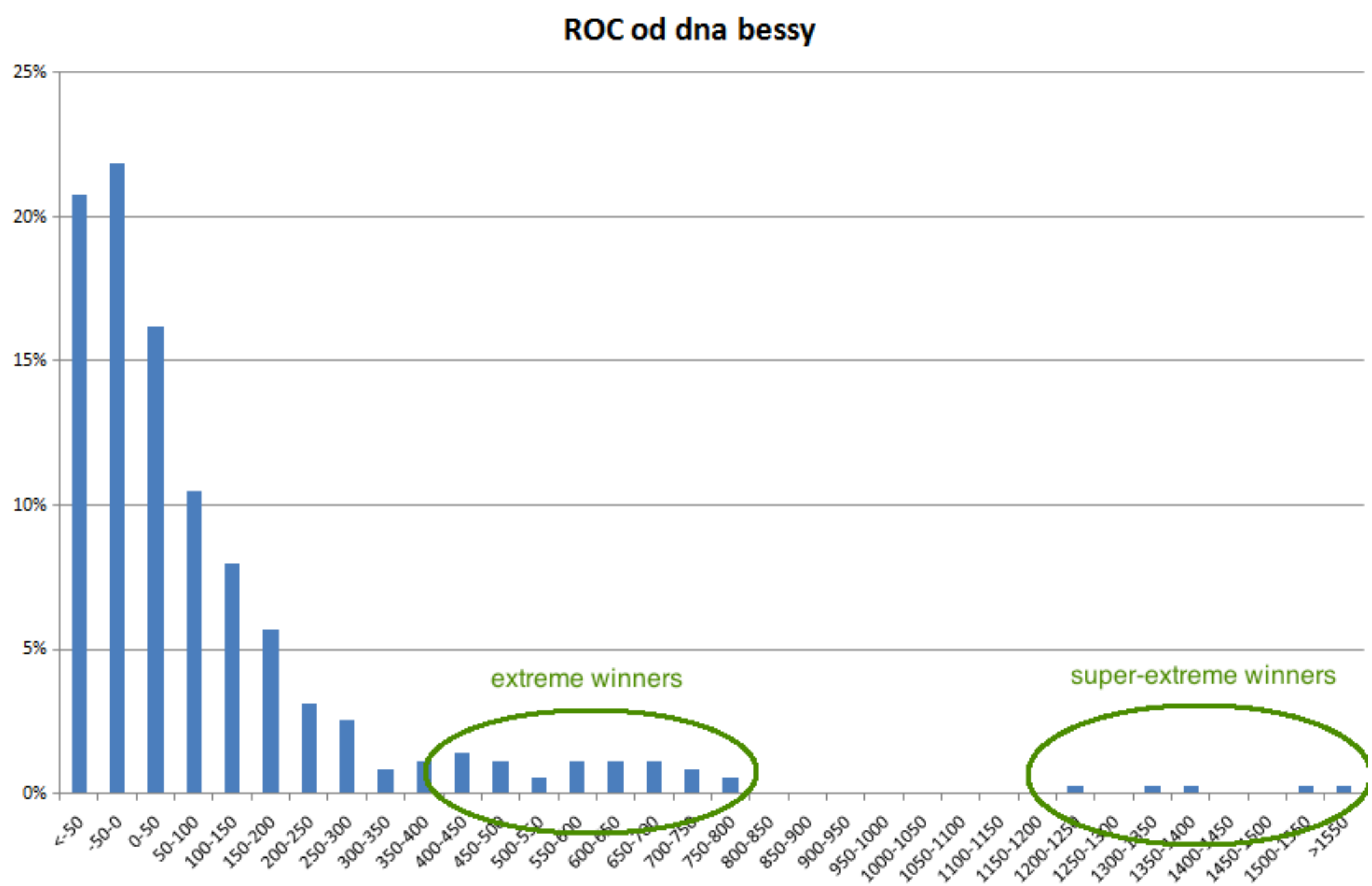
Spotting the winners

It is similar for polish stock market data:

(source: https://blogi.bossa.pl/2013/02/20/zwyciezcy-kreuja-stopy-zwrotu-z-rynku-akcyjnego/)

Data from February **2009** (the market low) to February **2013** (**4 years**)
The market (WIG Index) rose **99%** in this time period.

Stock returns distribution:



Spotting the winners

It is similar for polish stock market data:

(source: https://blogi.bossa.pl/2013/02/20/zwyciezcy-kreuja-stopy-zwrotu-z-rynku-akcyjnego/)

Data from February **2009** (the market low) to February **2013** (**4 years**)

The market (WIG Index) rose **99%** in this time period.

The individual stock contribution was:

Rate of change [%]	Number of stocks	% of stocks	Weighed contribution to the overall index performance
-99 to 0	150	43%	-21
0 to 100	94	27%	12
100 to 400	75	21%	41
>400	33	9%	67

source: https://blogi.bossa.pl/2013/02/20/zwyciezcy-kreuja-stopy-zwrotu-z-rynku-akcyjnego/

Spotting the winners

When picking which stocks to invest in, it's hard to know which ones will gain value, but even harder to predict which will turn out to be the extreme winners

yet it is the the returns of these extreme winners that contribute most to the overall investor's return.

Surviving drawdowns

Surviving drawdowns

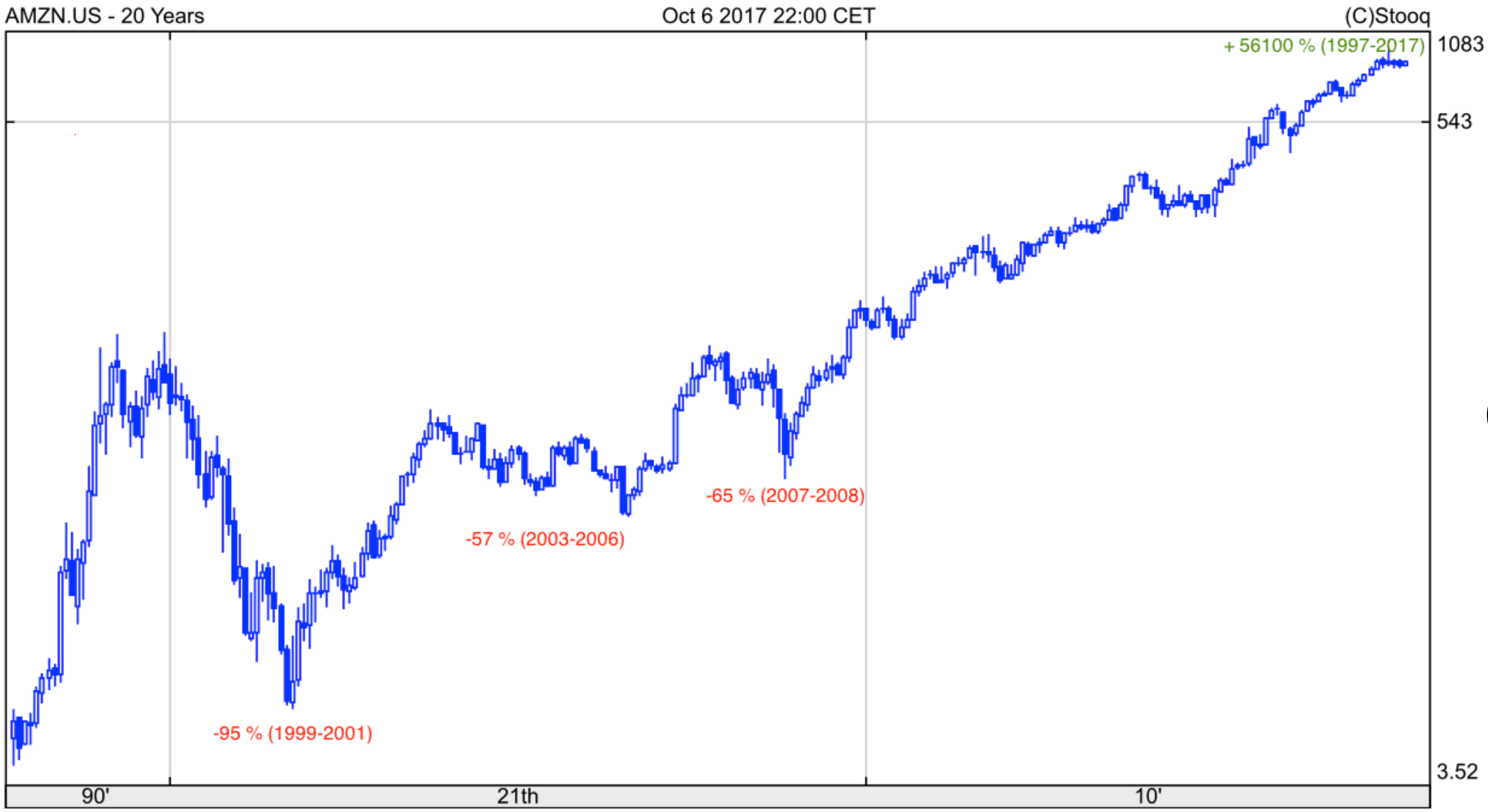
source:
stooq.com

price
(logscale)

An extreme example is Amazon — one of the extreme winners, during it's **20**-year existence on the exchange **multiplied** it's market value more than **560** times.

Surviving drawdowns

source:
stooq.com



price
(logscale)

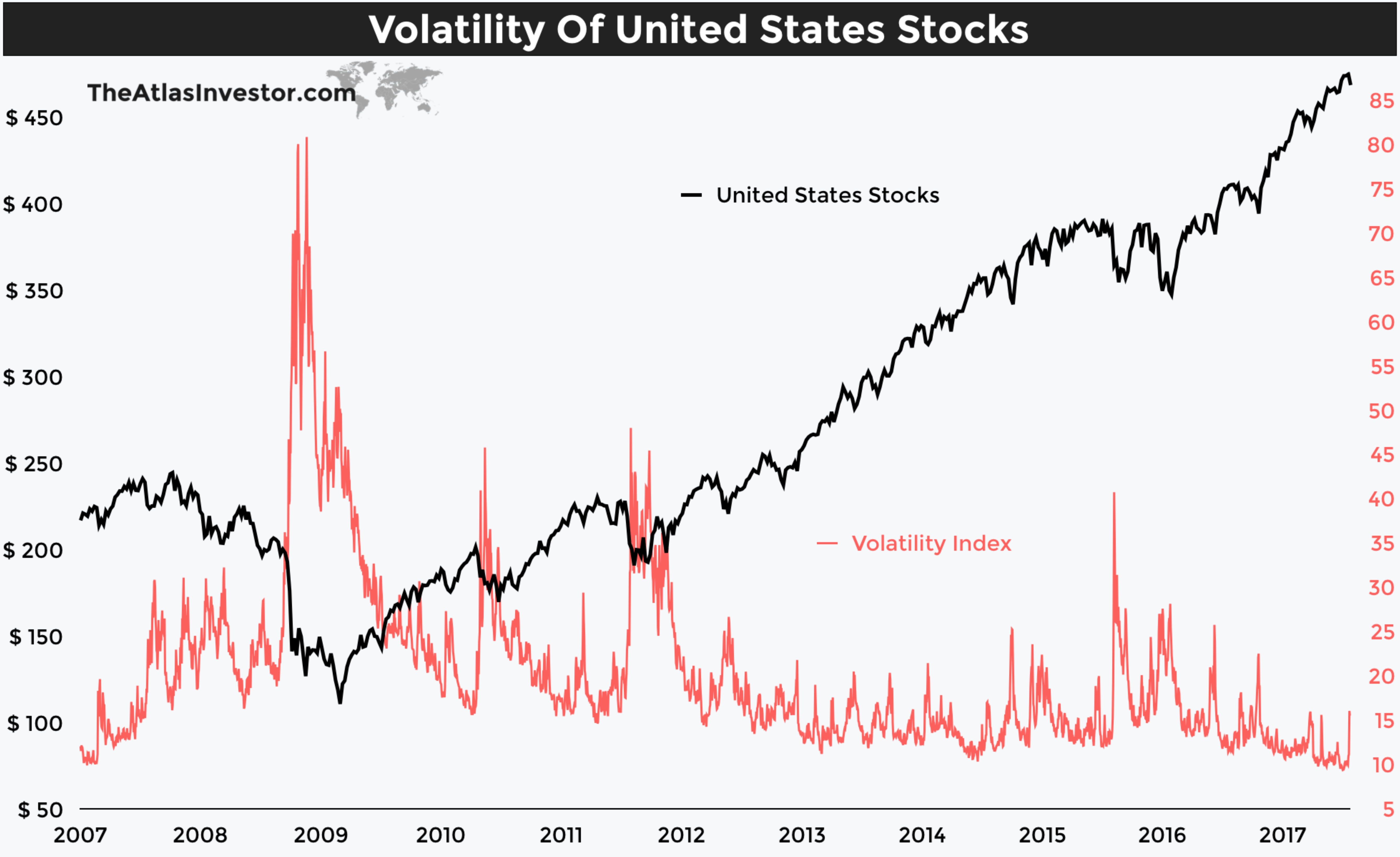
An extreme example is Amazon — one of the extreme winners, during it's **20**-year existence on the exchange **multiplied** it's market value more than **560** times.

From it's inception, the stock experienced three, sometimes multi-year significant drawdowns:

- a drawdown of **95%** during the „dot-com bubble": **1999-2001**
- a drawdown of **57%** between the years **2003-2006**
- a drawdown of **65%** during the late financial crisis of **2007-2008**

Surviving volatility

Surviving volatility



source: http://TheAtlasInvestor.com

A set of practical observations about investing, speculation and how financial markets work

Grzegorz Link
Opoka TFI S.A.
Faculty of Physics, University of Warsaw

A set of practical observations about investing, speculation and how financial markets work (part II)

Grzegorz Link
Opoka TFI S.A.
Faculty of Physics, University of Warsaw

Interesting general market effects

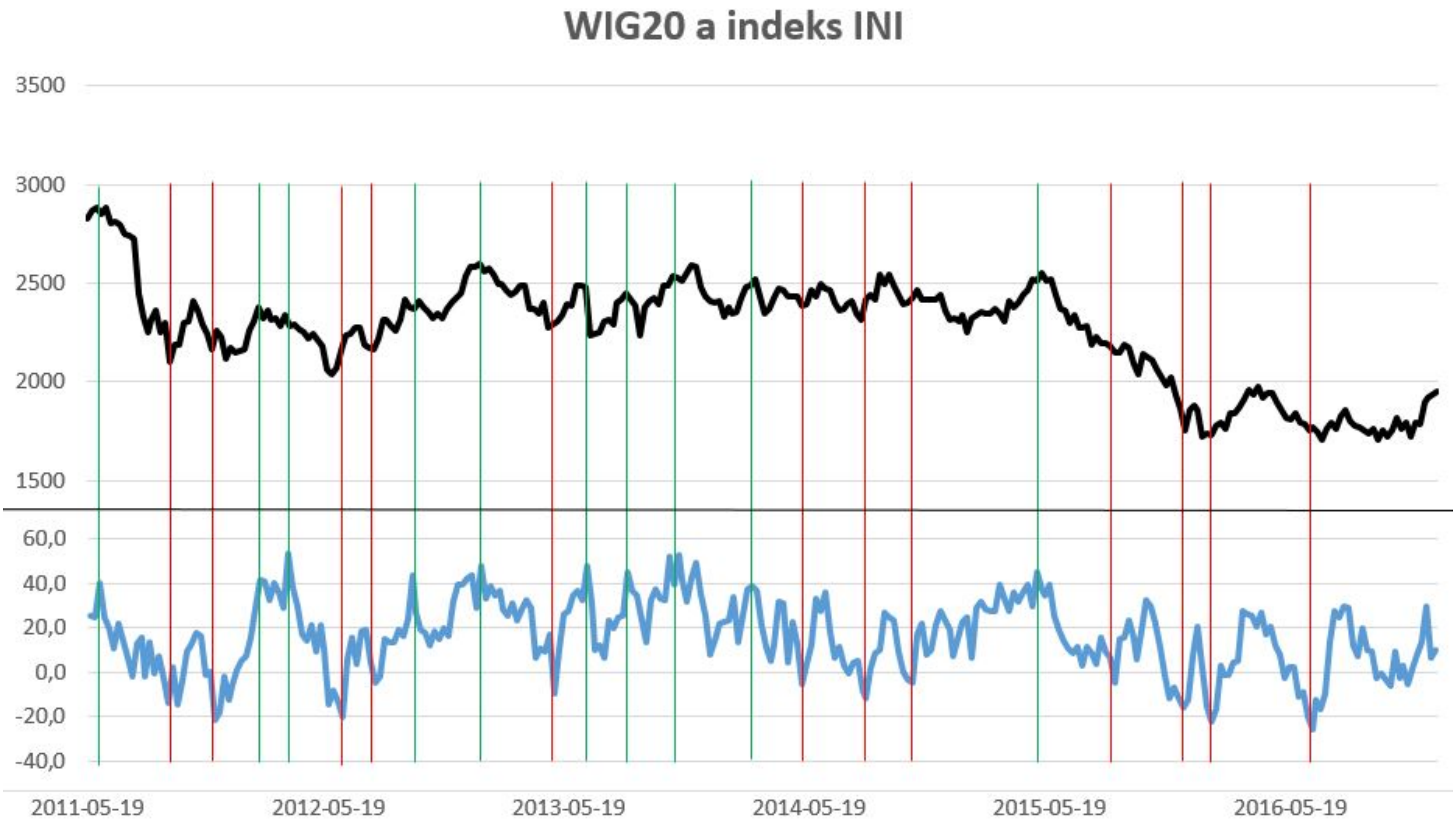
Sentiment analysis

Sentiment analysis

When prices rise (investors gain), they become optimistic and expect even higher prices; vice versa when asset prices fall.

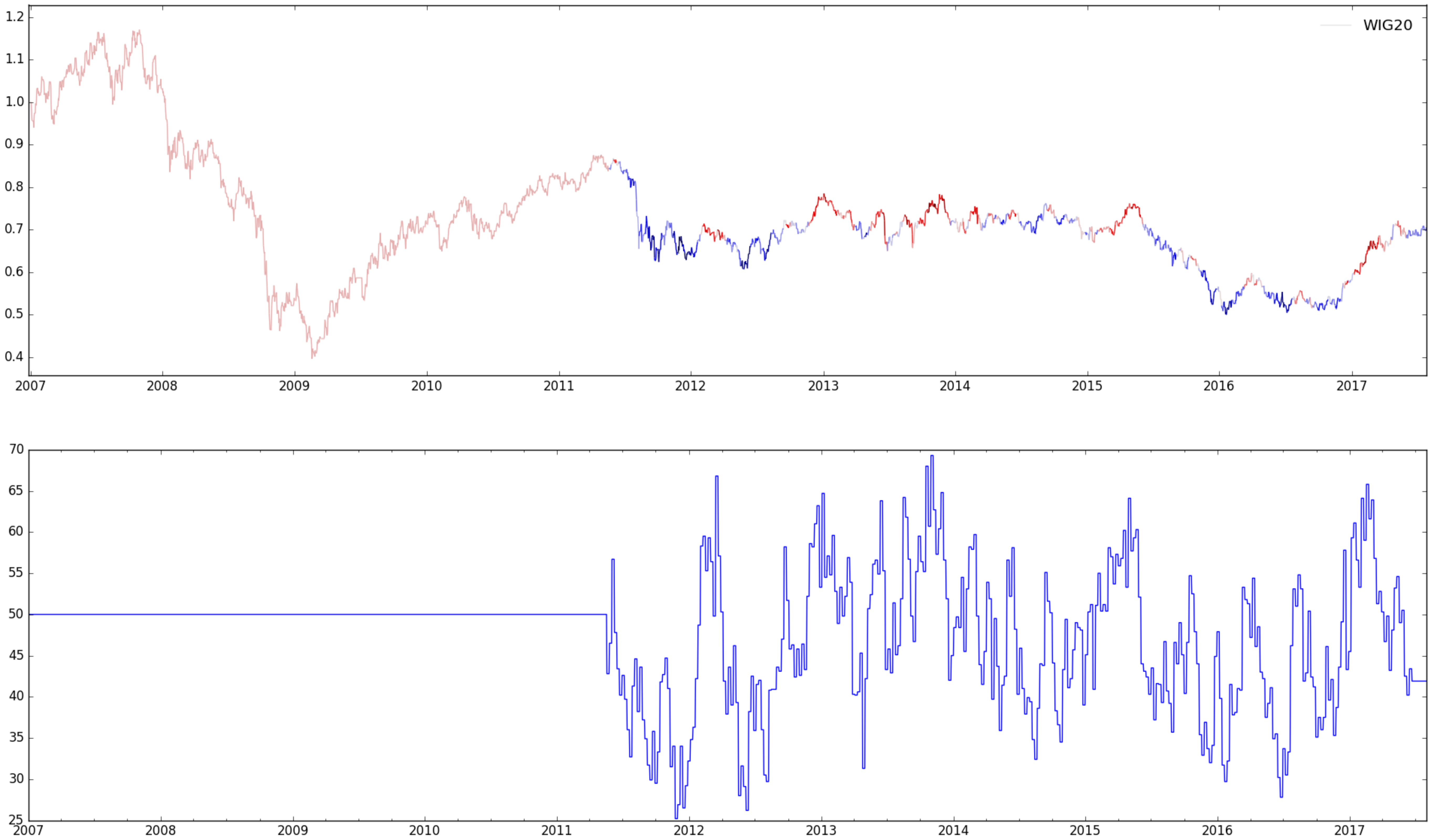
Over-optimistic and over-pessimistic levels are often (although not always) reported at important high and lows.

Sentiment analysis



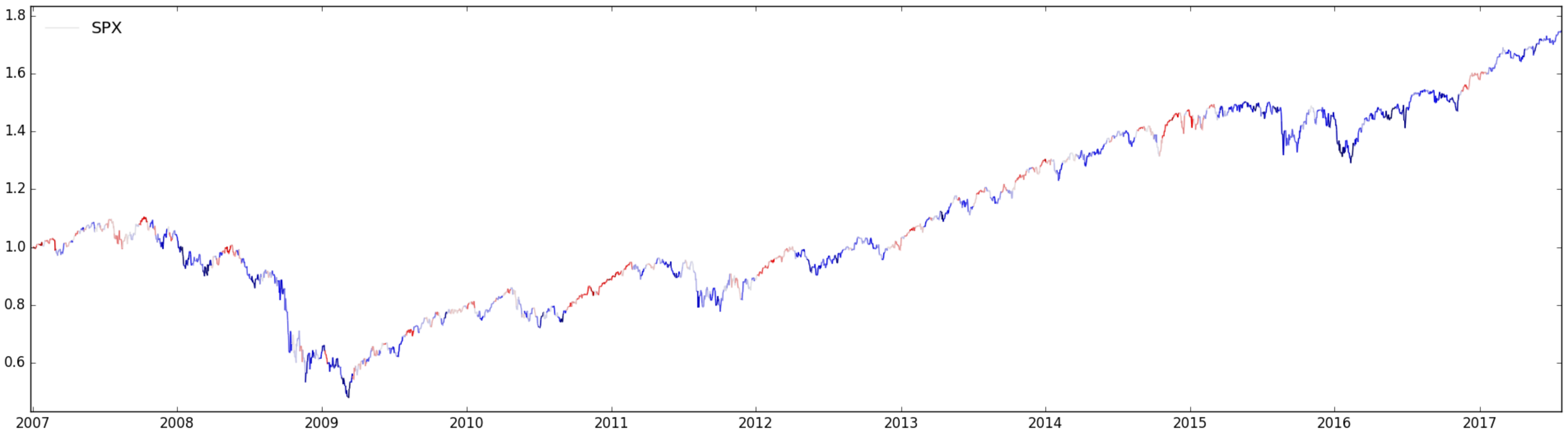
sentiment data: SII Indeks Nastrojów Inwestorów, stock data: stooq.com

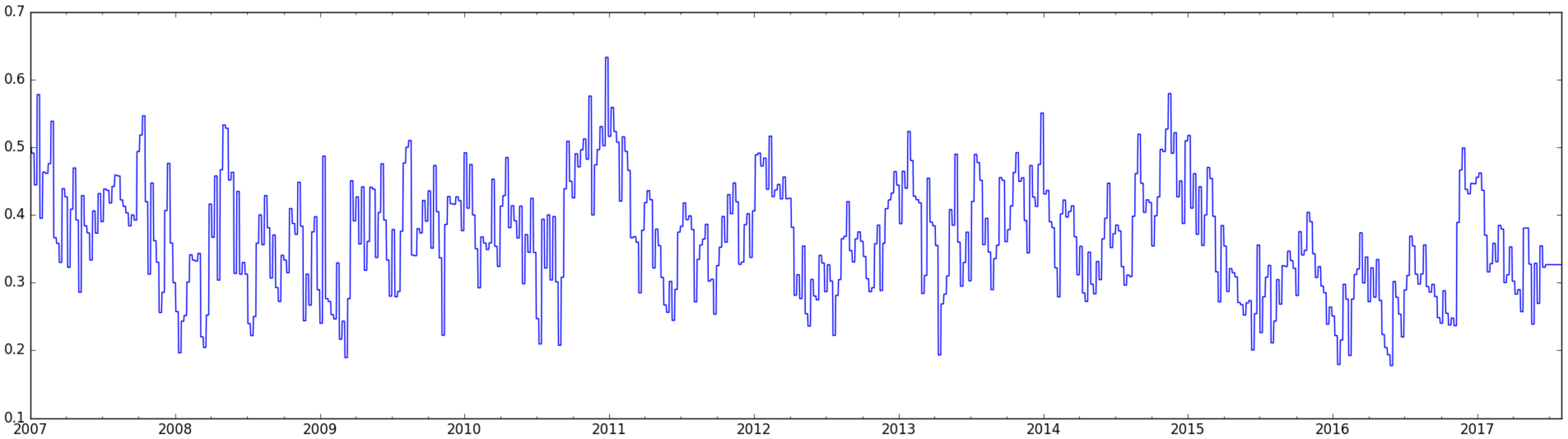
Sentiment analysis



sentiment data: SII Indeks Nastrojów Inwestorów, stock data: stooq.com

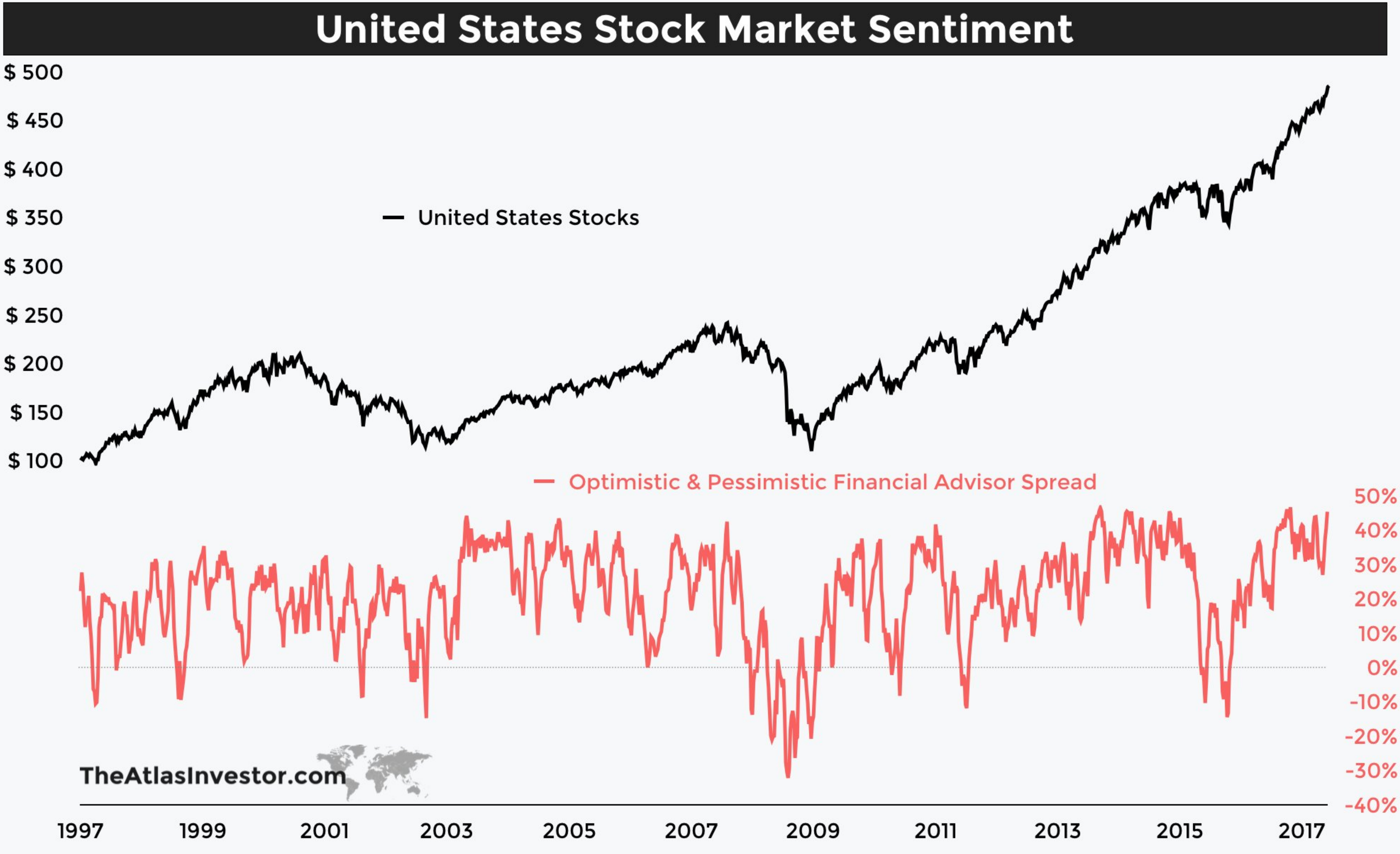
Sentiment analysis





sentiment data: AAII Sentiment Survey, index data: stooq.com

Sentiment analysis



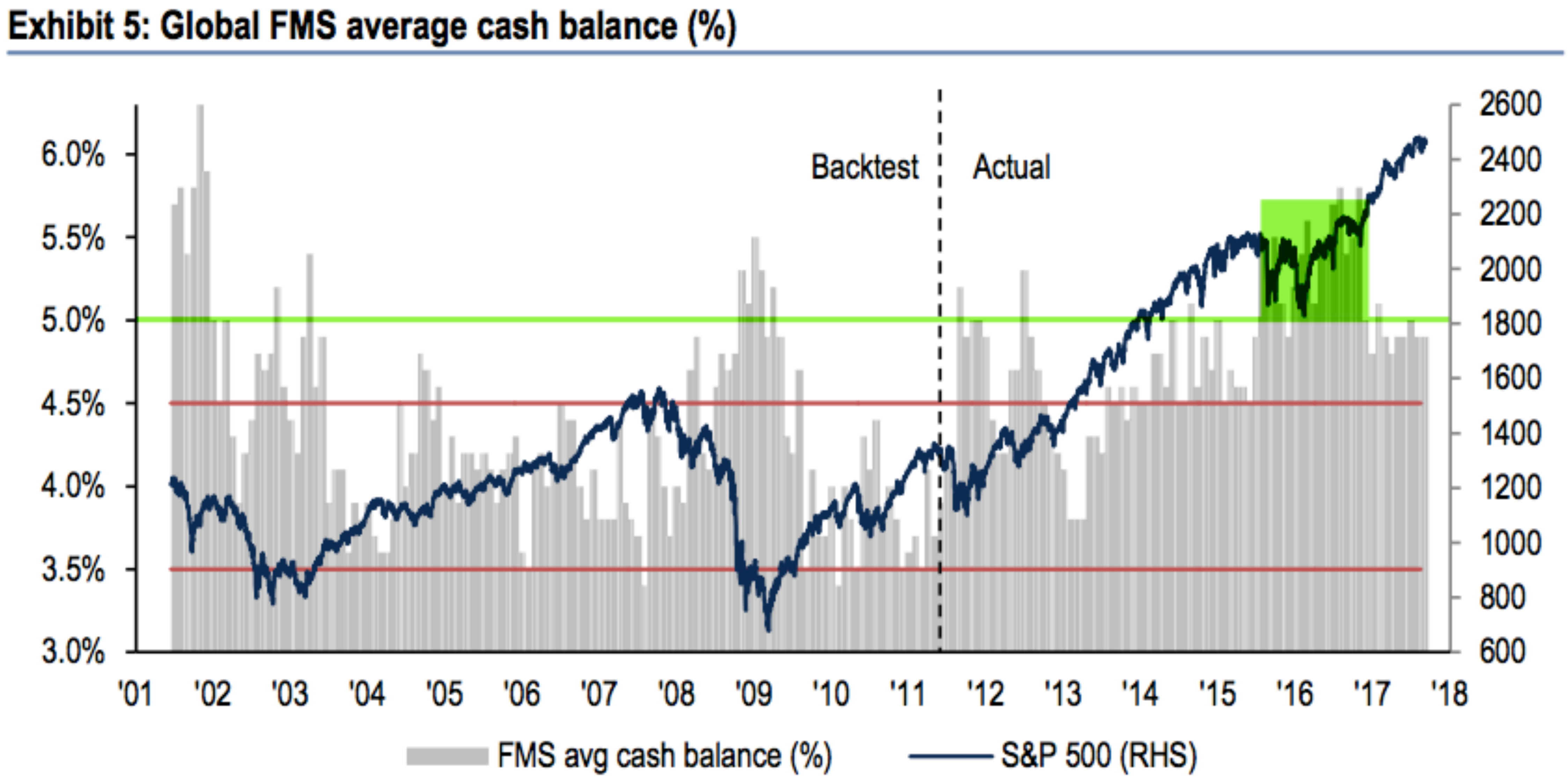
source: http://TheAtlasInvestor.com

Capital flows

Capital flows

Another way of measuring investor expectations about future price movements is looking at aggregated capital flows.

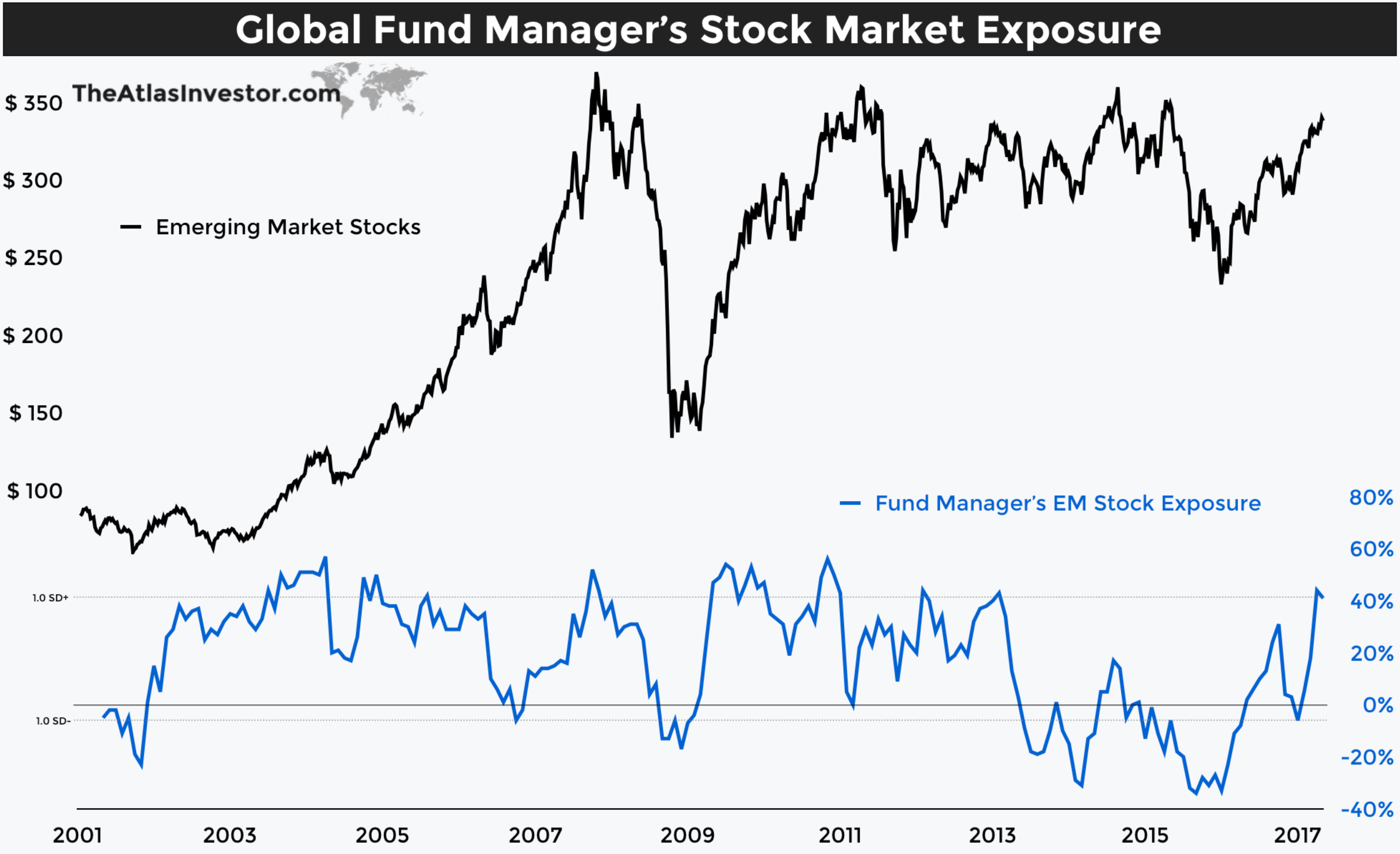
Capital flows



FMS = a regular, anonymous survey of hundreds of Fund Managers' cash and equity allocations, views and sentiment, made by Bank of America Merrill Lynch

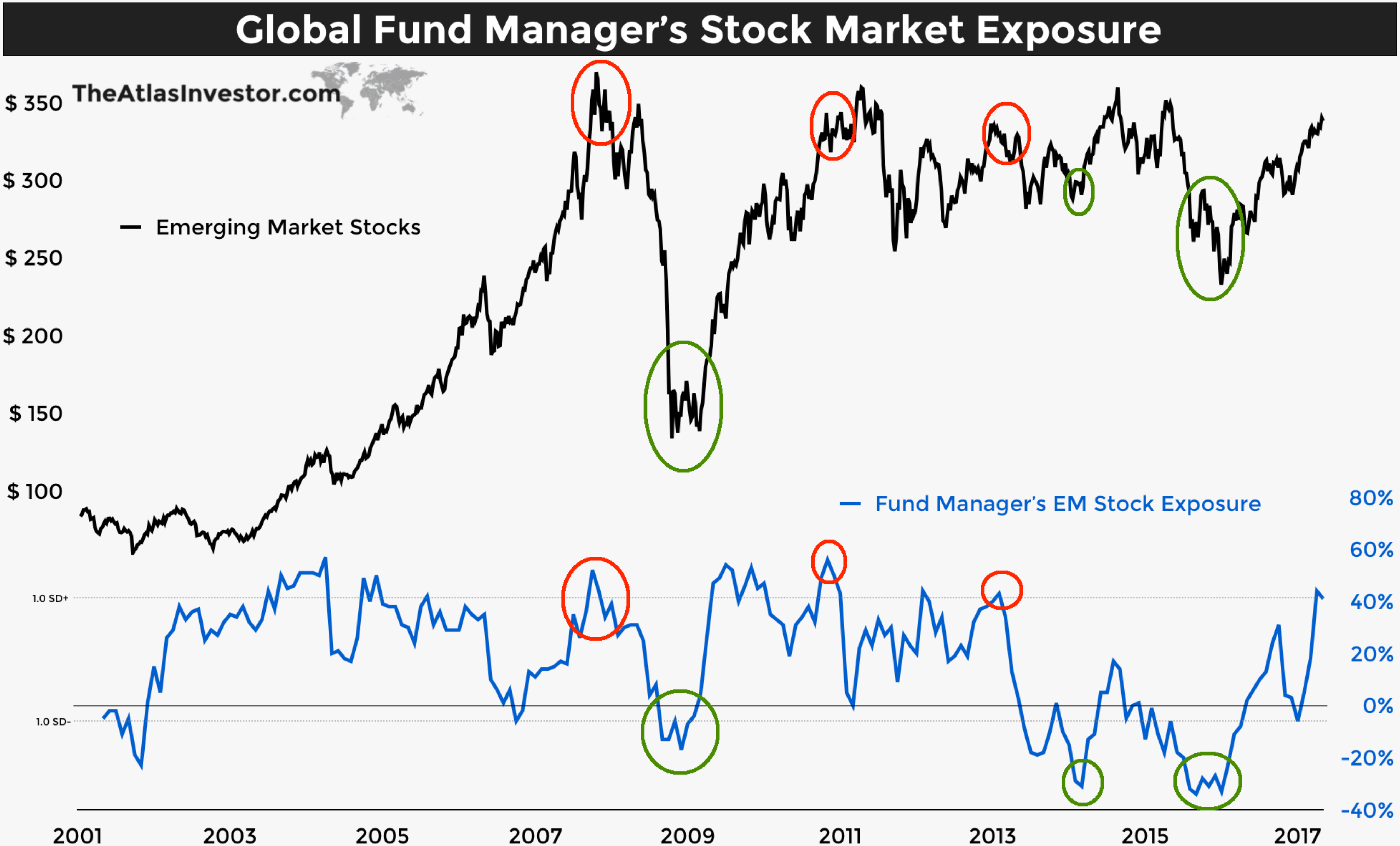
source: http://fat-pitch.blogspot.com, BAML FMS

Capital flows



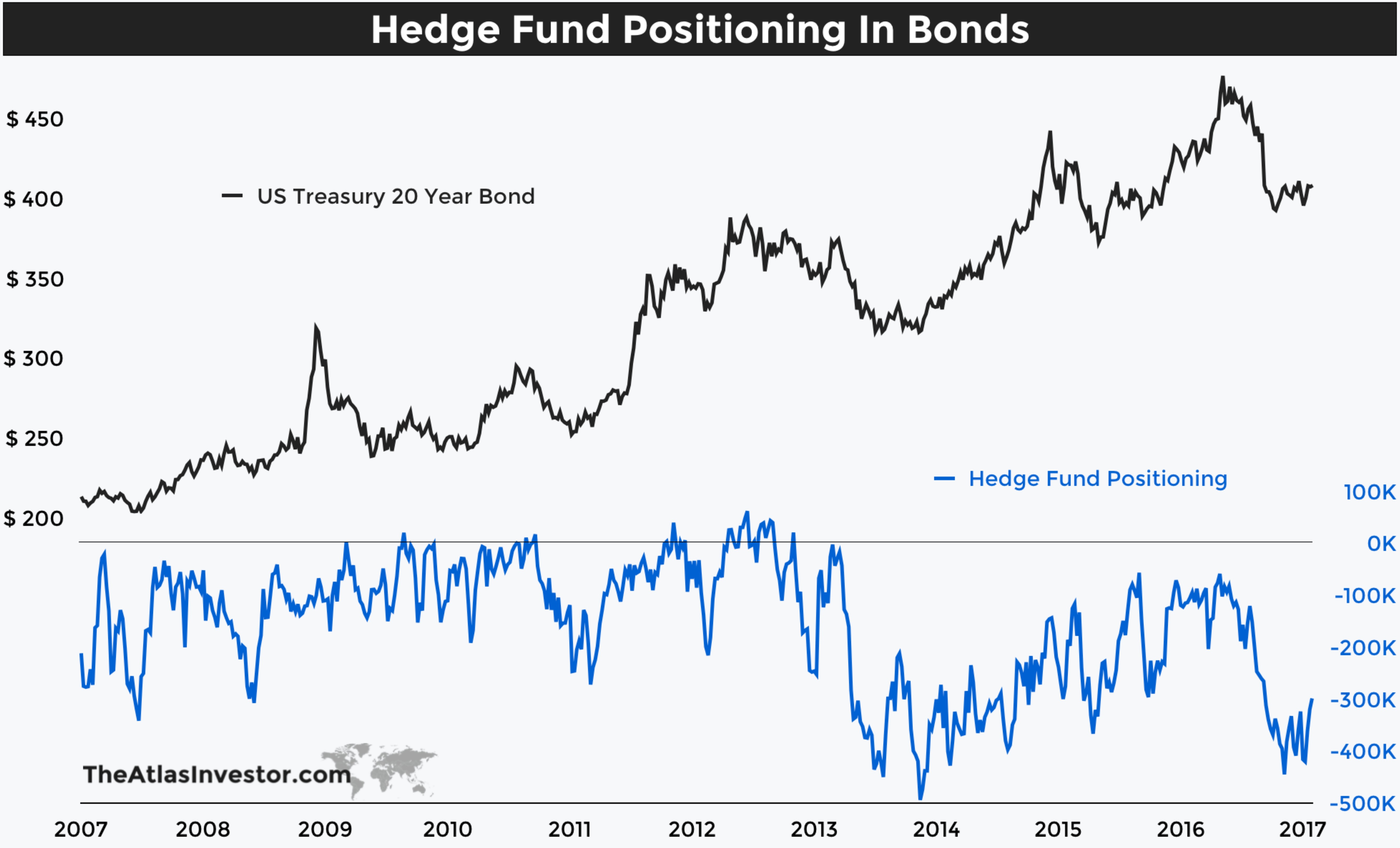
source: http://TheAtlasInvestor.com, BAML FMS

Capital flows



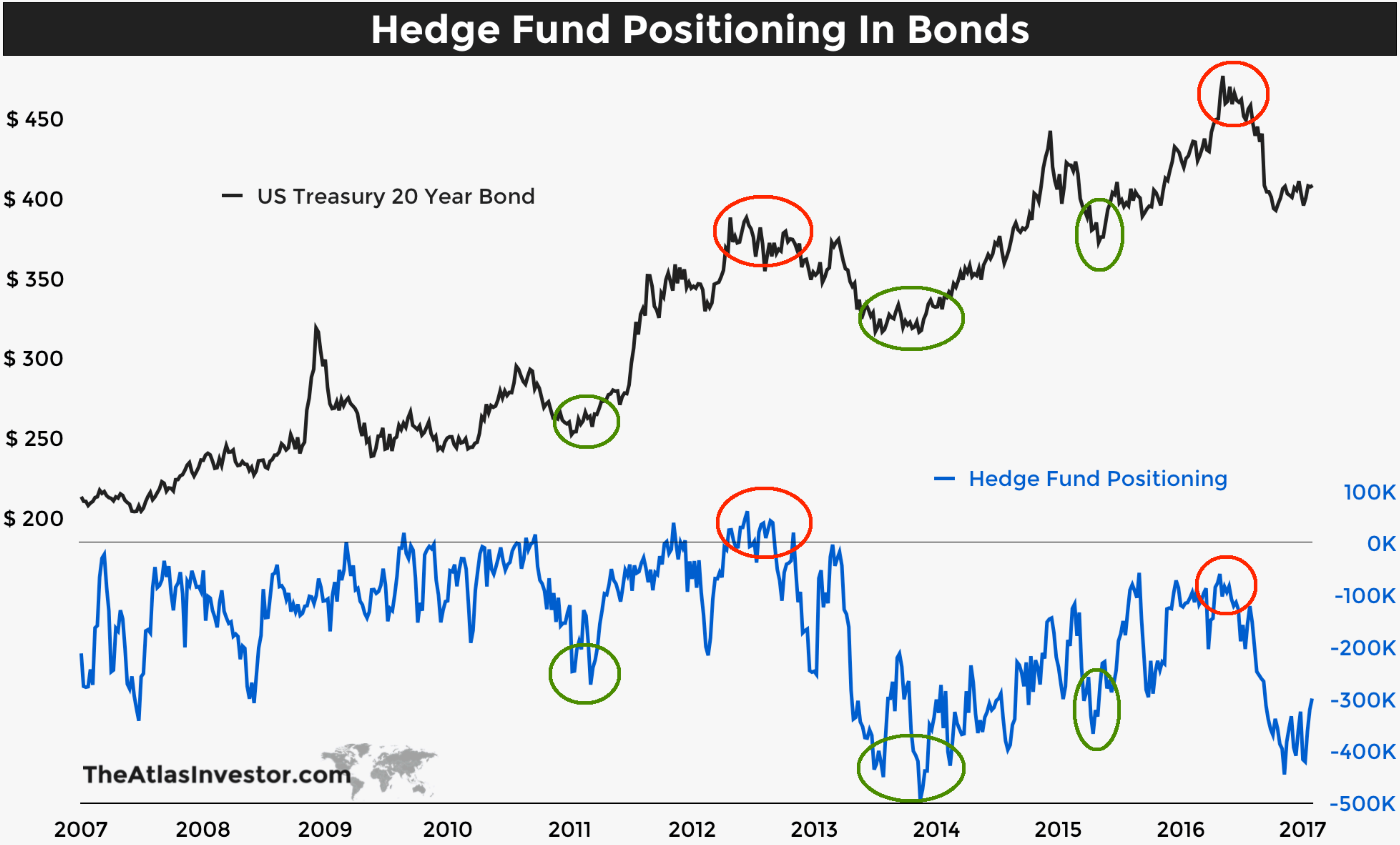
edited, source: http://TheAtlasInvestor.com, BAML FMS

Capital flows



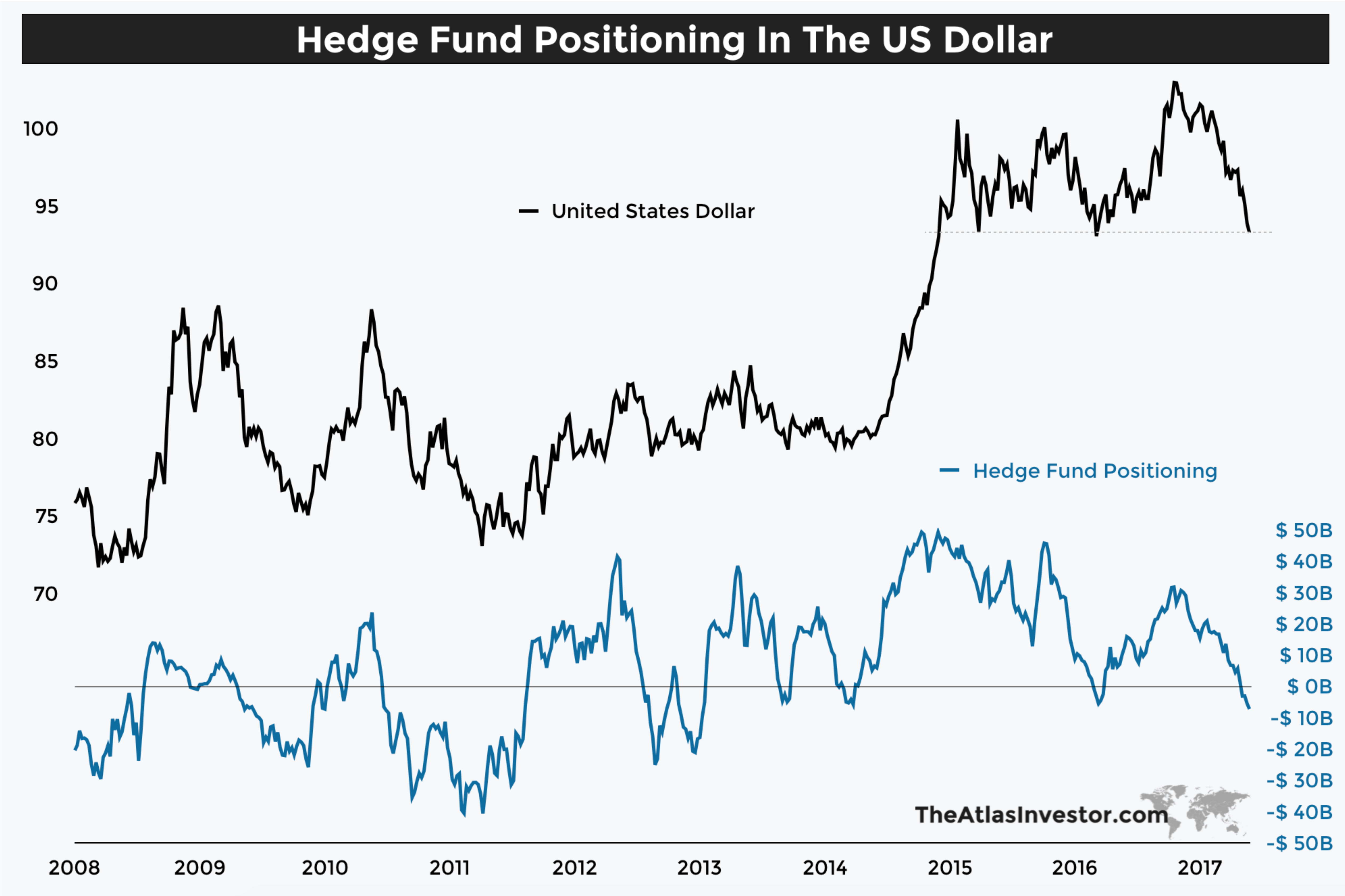
source: http://TheAtlasInvestor.com, CFTC COT report

Capital flows



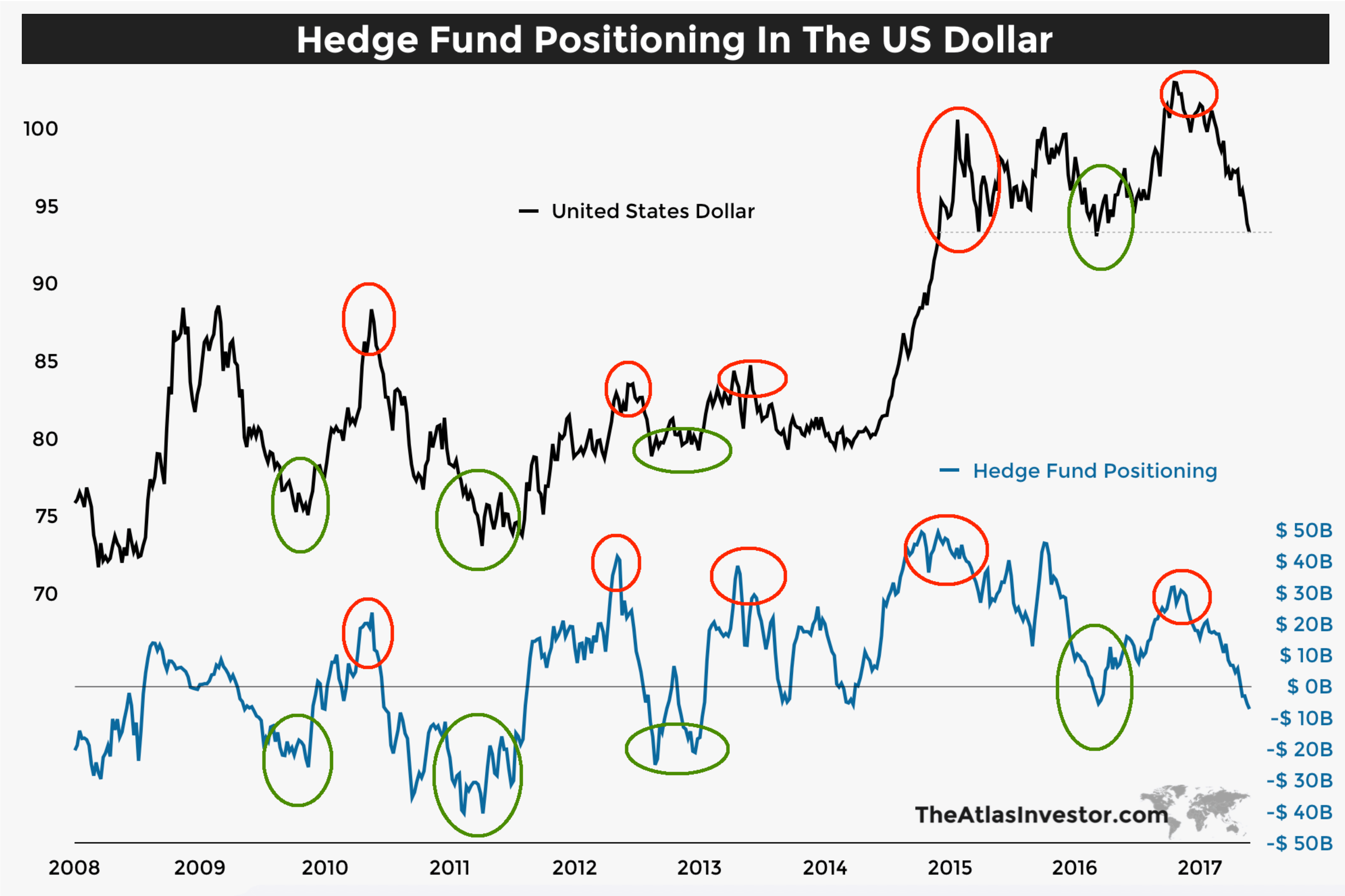
edited, source: http://TheAtlasInvestor.com, CFTC COT report

Capital flows



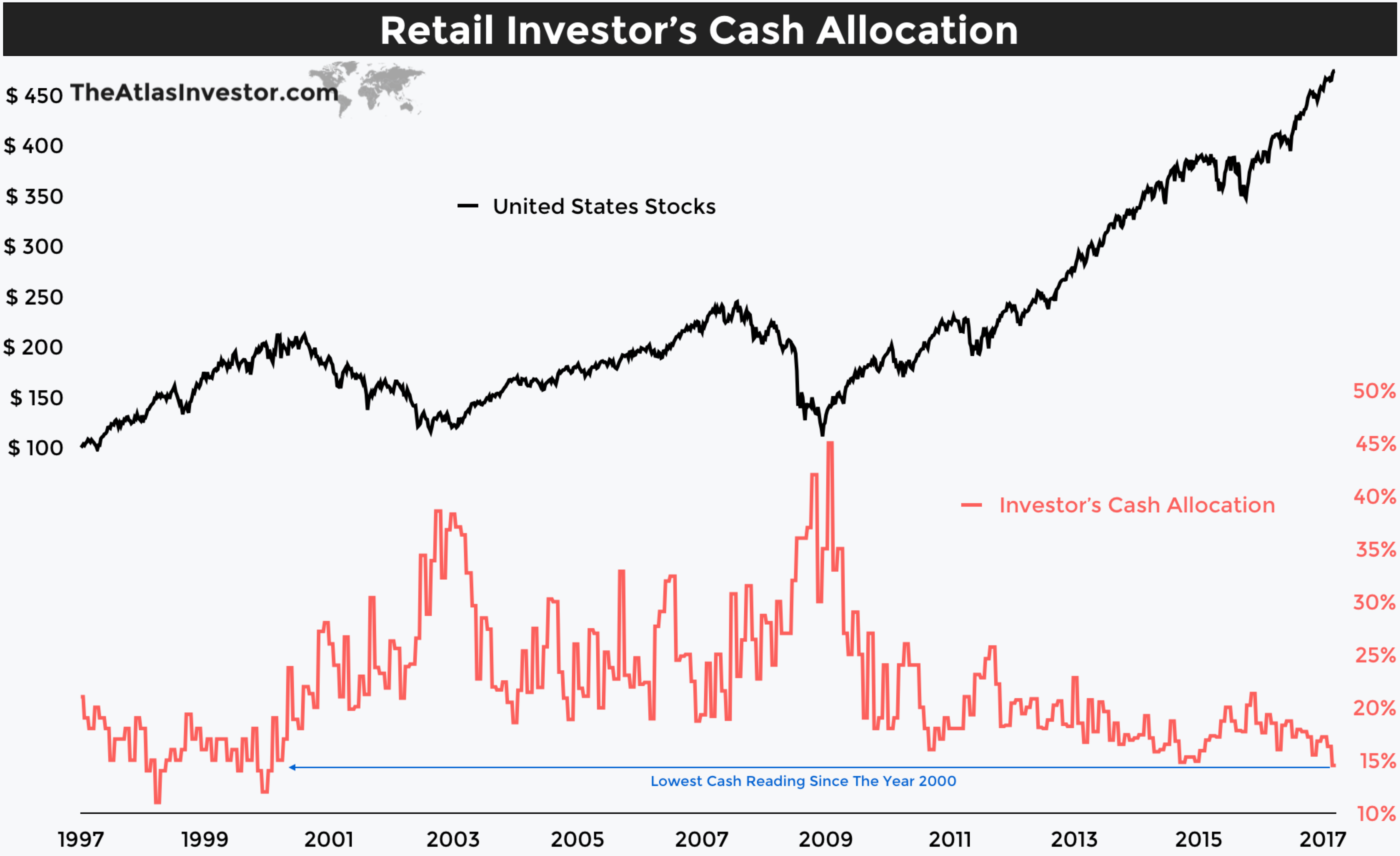
source: http://TheAtlasInvestor.com, CFTC COT report

Capital flows



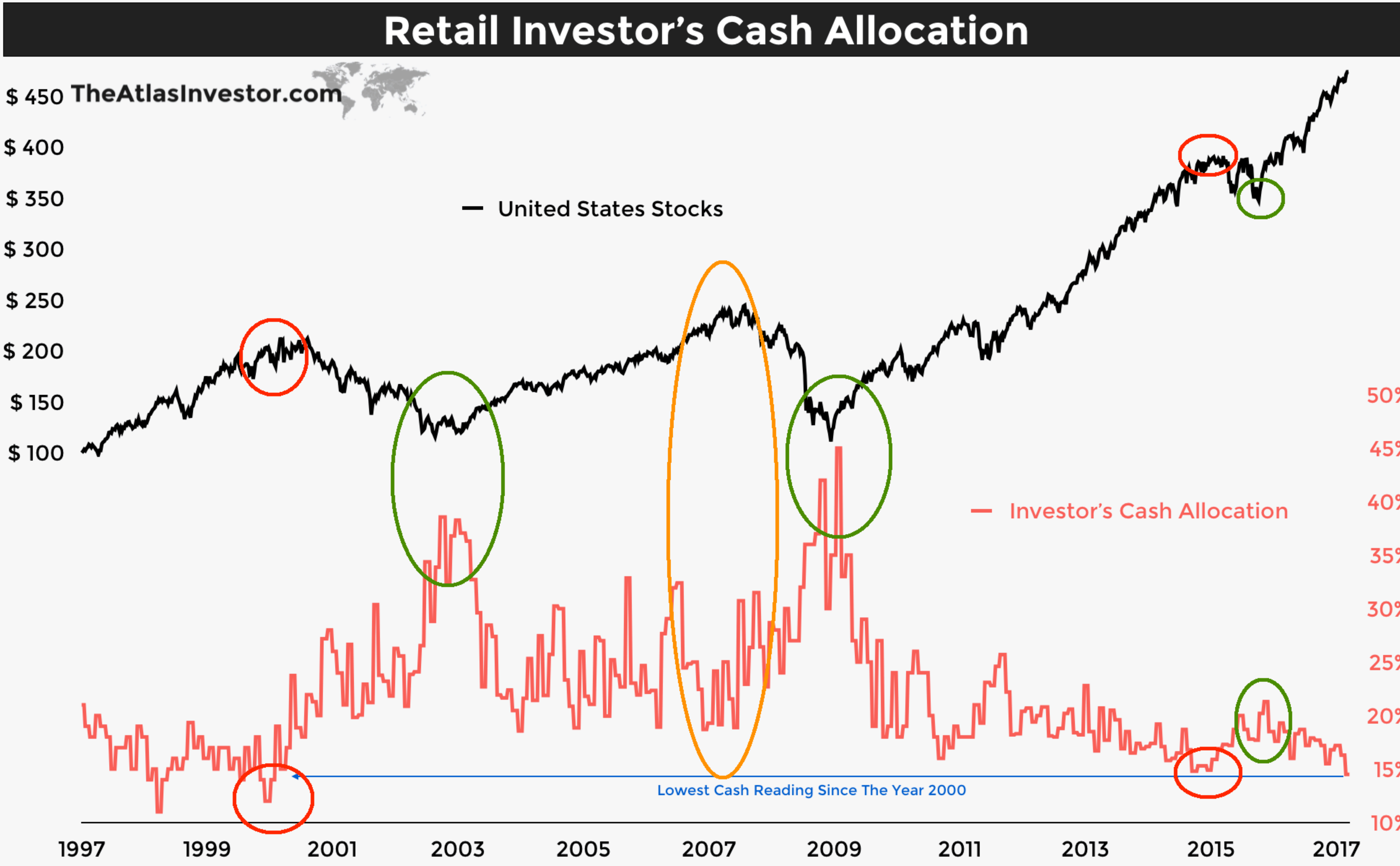
edited, source: http://TheAtlasInvestor.com, CFTC COT report

Capital flows



source: http://TheAtlasInvestor.com

Capital flows



edited, source: http://TheAtlasInvestor.com

Value vs price

Value vs price

When is a stock „expensive” and when is it „cheap” ?

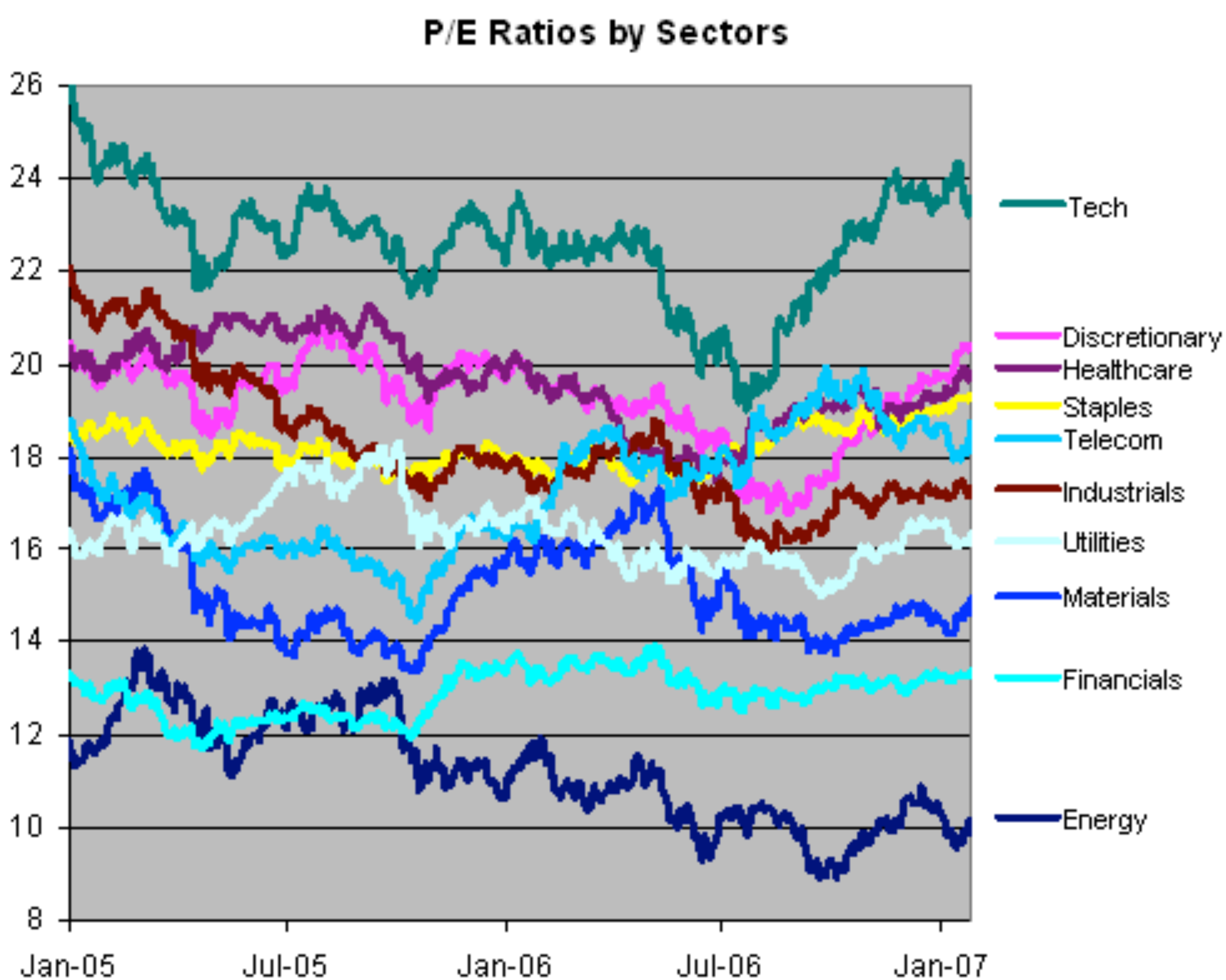
Value vs price

When is a stock „expensive” and when is it „cheap” ?

Among lots of fundamental measures, one of the most commonly used is Price-to-Earnings ratio.

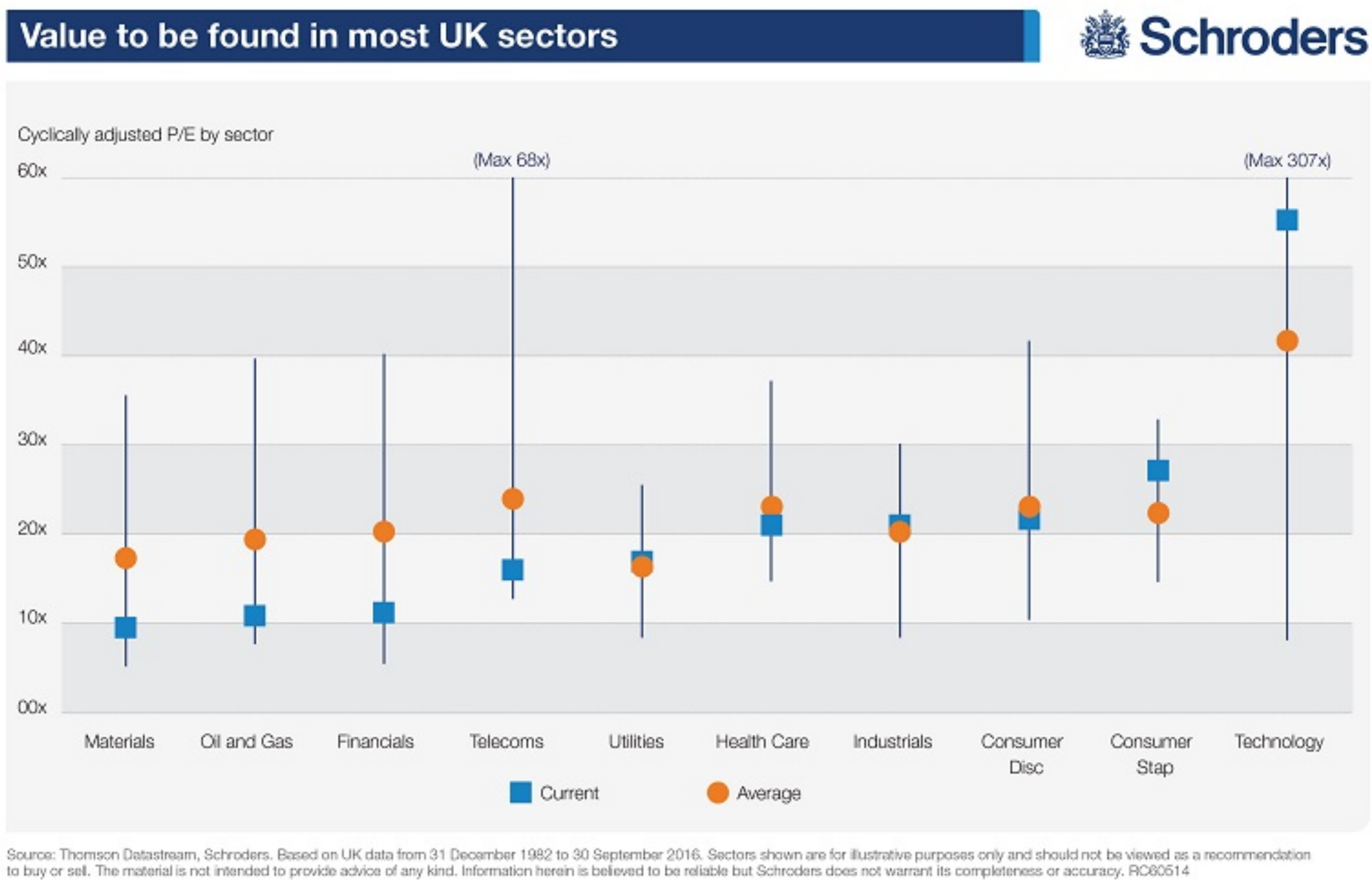
For each company, sector or market the benchmark P/E value is different.

Value vs price



edited, source: http://www.crossingwallstreet.com/archives/2007/01/pe-ratios-by-sector.html

Value vs price

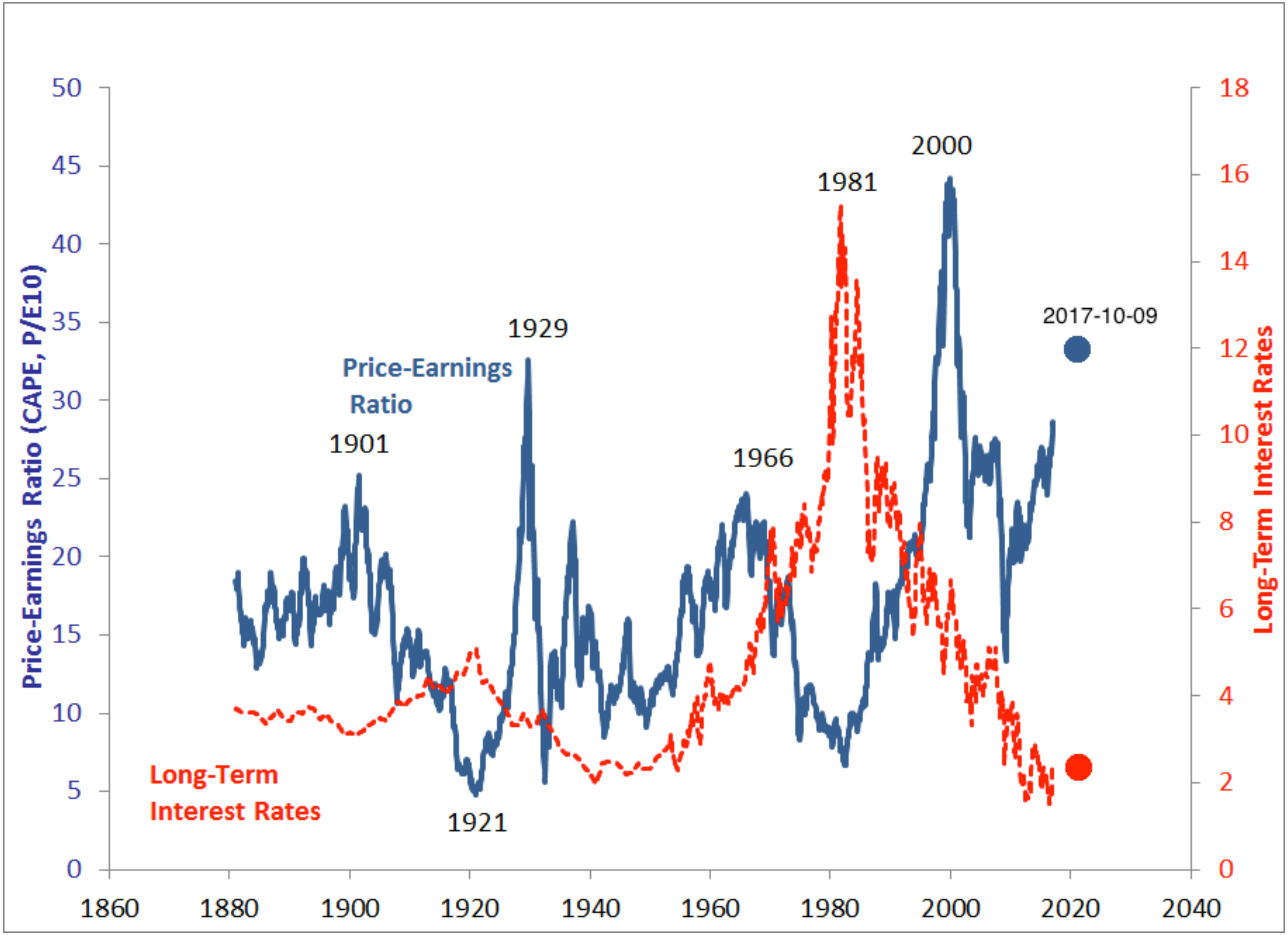


P/E of UK companies by sector, as of November 2016, source: http://www.schroders.com/en/uk/private-investor/insights/markets/the-ftse-100-hits-all-time-high---but-can-it-go-higher/

Value vs price

We can also aggregate and speak of a P/E valuation of the broad stock market.

Value vs price



edited; original source: https://www.investing.com/analysis/is-bubble-risk-elevated-for-us-stocks-200175650, CAPE Shiller Data

Value vs price

	S&P 500 Average Forward Returns (Annualized, 1928 - 2016)									
Valuation Percentile	1-Yr	2-Yr	3-Yr	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year
0-10%	25.5%	20.1%	19.4%	19.6%	18.3%	16.9%	16.7%	16.4%	16.1%	15.6%
10-20%	19.2%	20.7%	17.5%	16.7%	15.9%	16.7%	16.7%	16.8%	16.5%	16.2%
20-30%	15.3%	16.7%	15.6%	15.6%	15.6%	14.4%	14.5%	14.8%	14.6%	14.8%
30-40%	15.5%	13.1%	13.1%	11.1%	12.0%	12.2%	12.1%	11.7%	12.3%	13.3%
40-50%	3.4%	6.1%	6.1%	7.6%	9.3%	10.4%	10.6%	10.3%	11.3%	11.8%
50-60%	6.4%	5.1%	6.9%	7.7%	8.4%	9.2%	9.5%	10.5%	10.8%	10.1%
60-70%	10.7%	11.2%	12.6%	13.1%	13.7%	13.5%	12.1%	10.7%	9.3%	8.6%
70-80%	6.2%	6.5%	7.6%	7.7%	7.4%	5.5%	5.4%	4.9%	5.0%	4.7%
80-90%	7.9%	8.6%	7.8%	7.8%	6.1%	4.8%	4.9%	5.9%	5.9%	6.3%
90-100%	3.0%	0.9%	0.5%	0.0%	0.1%	1.5%	2.6%	3.0%	3.0%	3.1%

Average S&P500 **forward returns** based on historical CAPE ratios

source: https://pensionpartners.com/is-this-1929-or-1997/

Value vs price

		S&P 500 Average Forward Volatility (1928 - 2016)									
Valuation Percentile	CAPE Ratio	1-Yr	2-Yr	3-Yr	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year
0-10%	5.57 to 9.68	21.8%	20.2%	18.9%	18.4%	18.1%	18.5%	18.7%	18.7%	18.6%	18.3%
10-20%	9.69 to 11.22	15.1%	14.9%	15.6%	15.8%	15.9%	15.8%	15.6%	15.5%	15.2%	15.0%
20-30%	11.23 to 12.67	15.8%	15.7%	15.7%	16.3%	16.5%	16.3%	16.0%	15.6%	15.4%	15.2%
30-40%	12.68 to 14.98	15.8%	15.7%	15.7%	16.3%	16.5%	16.3%	16.0%	15.6%	15.4%	15.2%
40-50%	14.99 to 17.03	18.2%	18.2%	17.8%	17.3%	17.5%	16.9%	16.5%	16.1%	15.9%	15.8%
50-60%	17.04 to 18.84	14.8%	15.6%	16.3%	15.9%	15.4%	15.1%	15.1%	15.2%	15.1%	15.2%
60-70%	18.85 to 21.03	12.8%	13.7%	13.4%	13.7%	14.2%	14.9%	15.4%	15.7%	15.9%	15.8%
70-80%	21.03 to 22.21	14.0%	15.7%	16.7%	17.1%	17.7%	18.2%	18.7%	18.9%	18.9%	18.8%
80-90%	22.22 to 26.40	11.8%	13.4%	15.7%	17.4%	18.0%	18.3%	18.2%	17.7%	17.4%	17.5%
90-100%	26.41 to 44.20	17.1%	18.0%	18.8%	19.7%	19.5%	18.6%	18.0%	17.7%	17.7%	17.8%
All	All	16.2%	16.6%	16.9%	17.0%	17.0%	16.9%	16.8%	16.7%	16.6%	16.5%

Average S&P500 **forward volatility** based on historical CAPE ratios

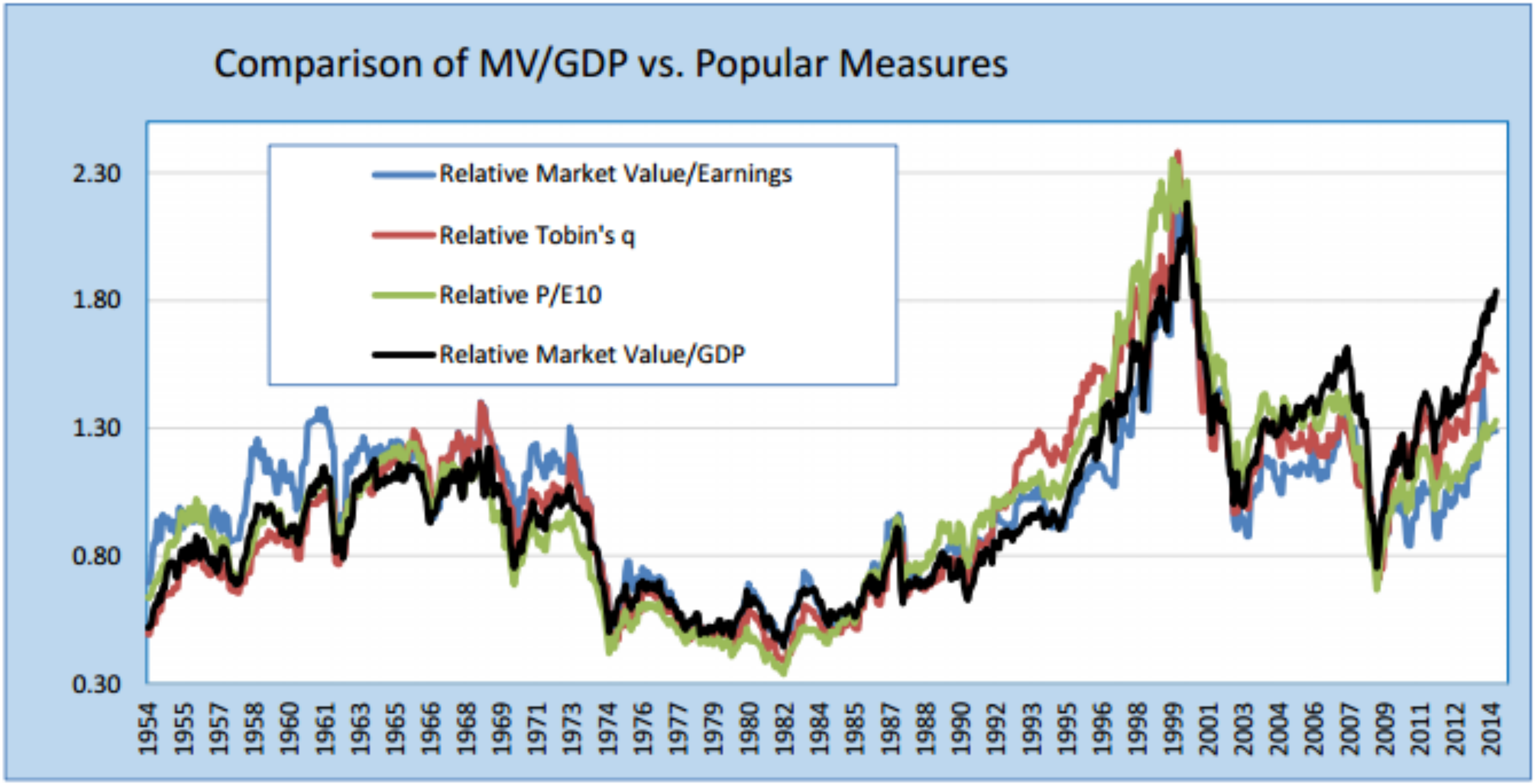
source: https://pensionpartners.com/is-this-1929-or-1997/

Value vs price

Other measures for the broad market include the summary market capitalization divided by the country's GDP.

These measures turn out to be quite similar.

Value vs price

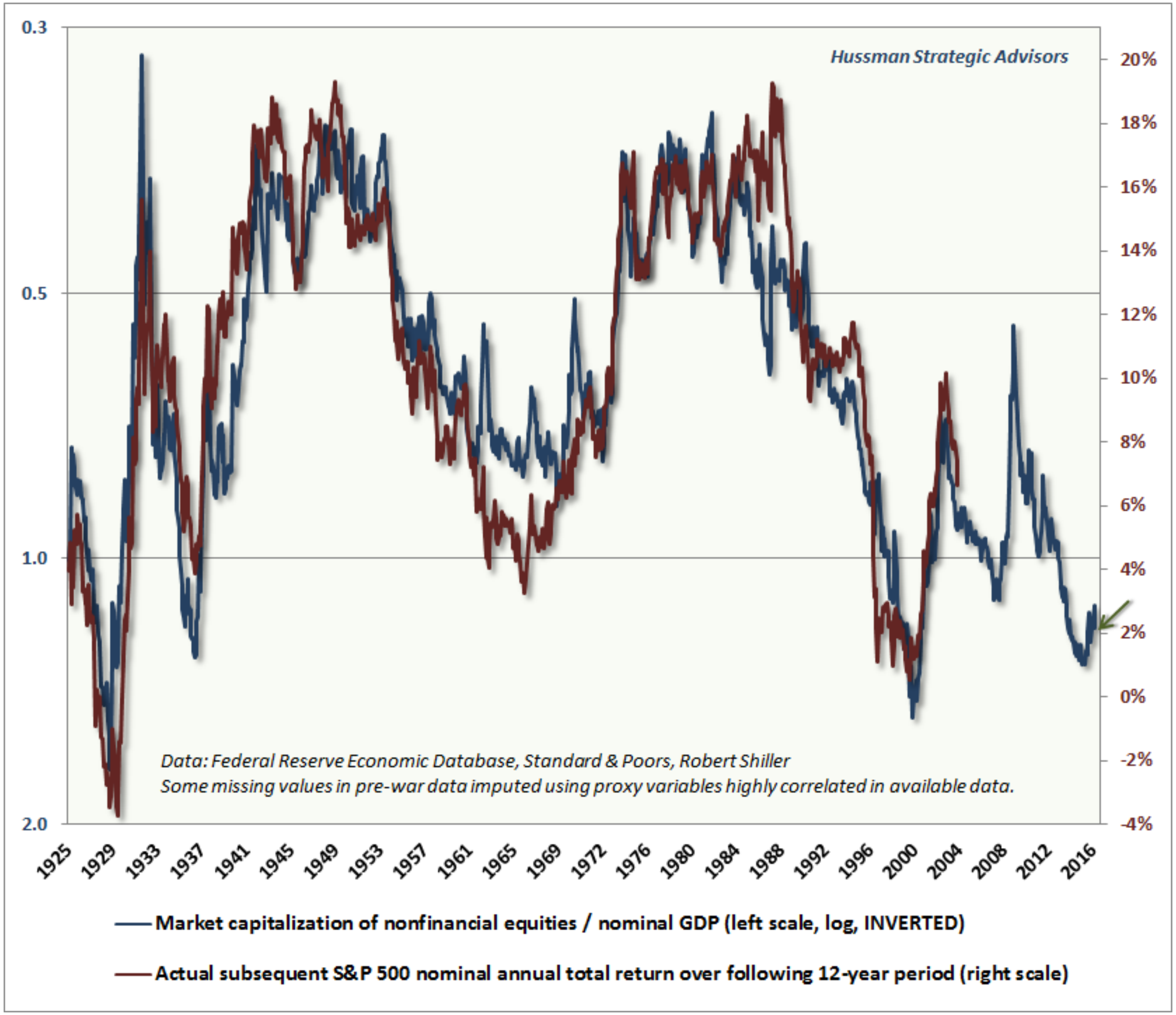


source: https://www.valuewalk.com/2014/09/forecasting-equity-returns-cape-vs-market-cap-to-gdp/

Value vs price

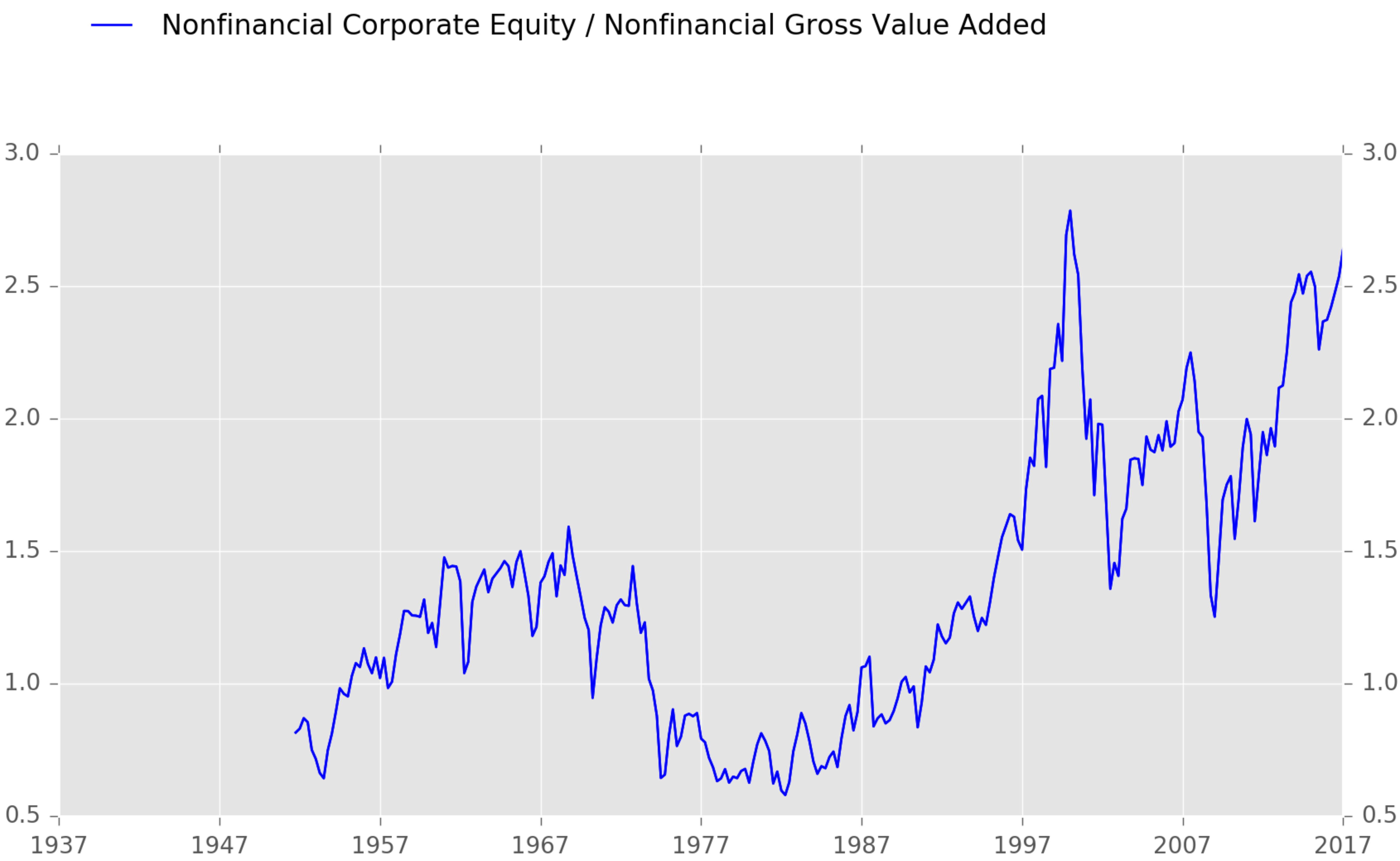
One interesting observation is how closely these measures correlate to the forward rolling stock market returns.

Value vs price



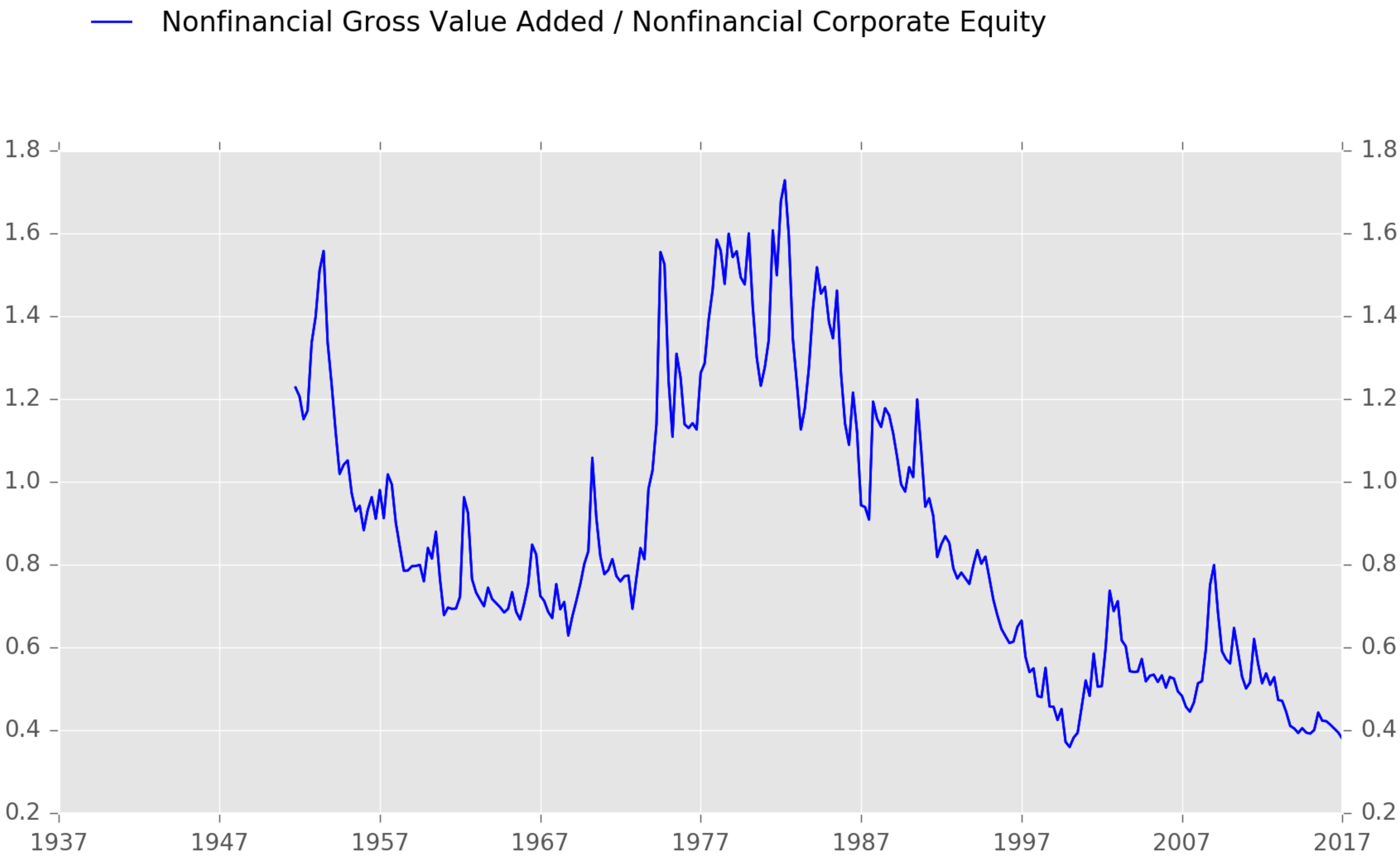
source: http://www.hussman.net/wmc/wmc160328.htm

Value vs price



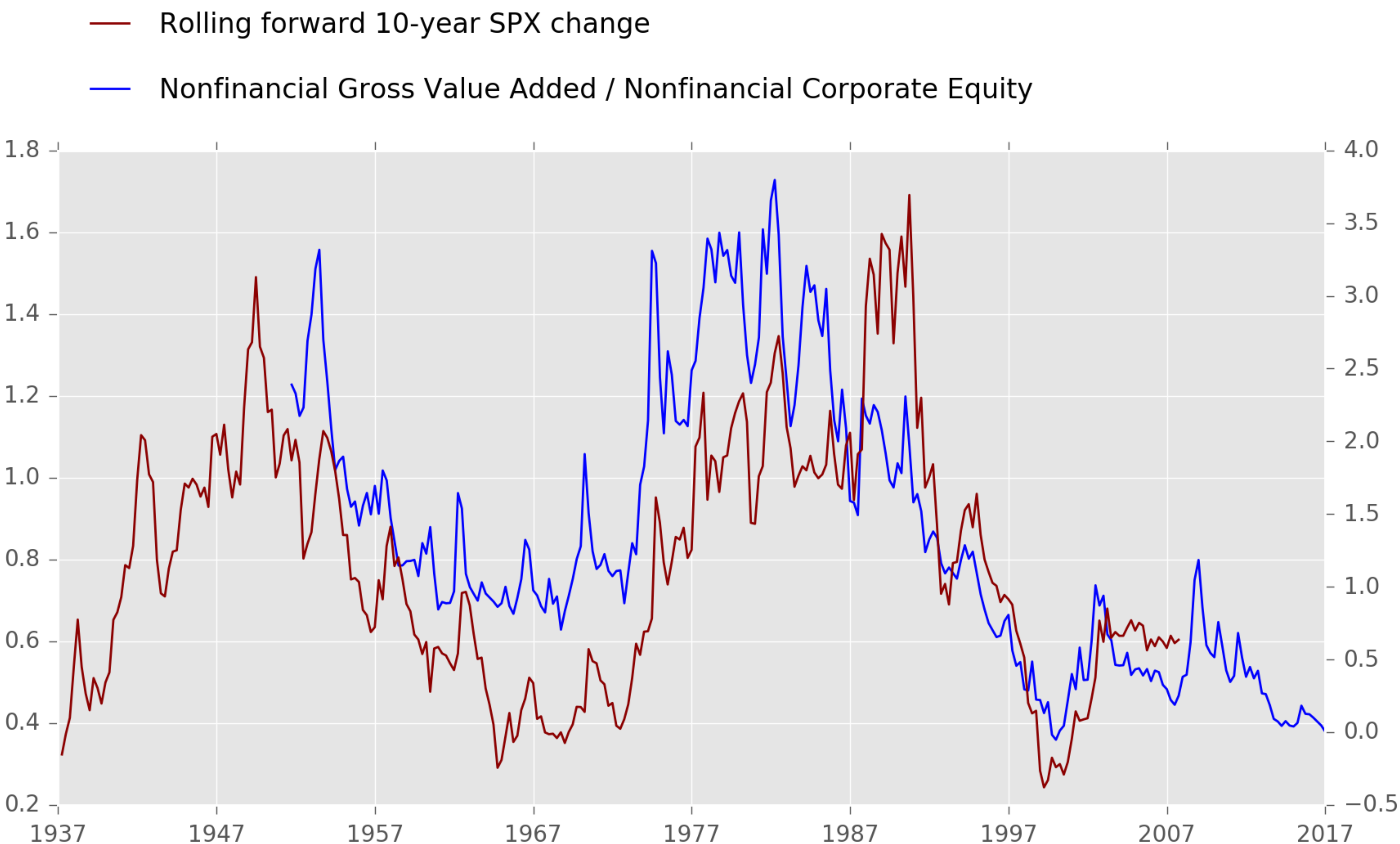
source: Opoka TFI, Hussman Funds

Value vs price



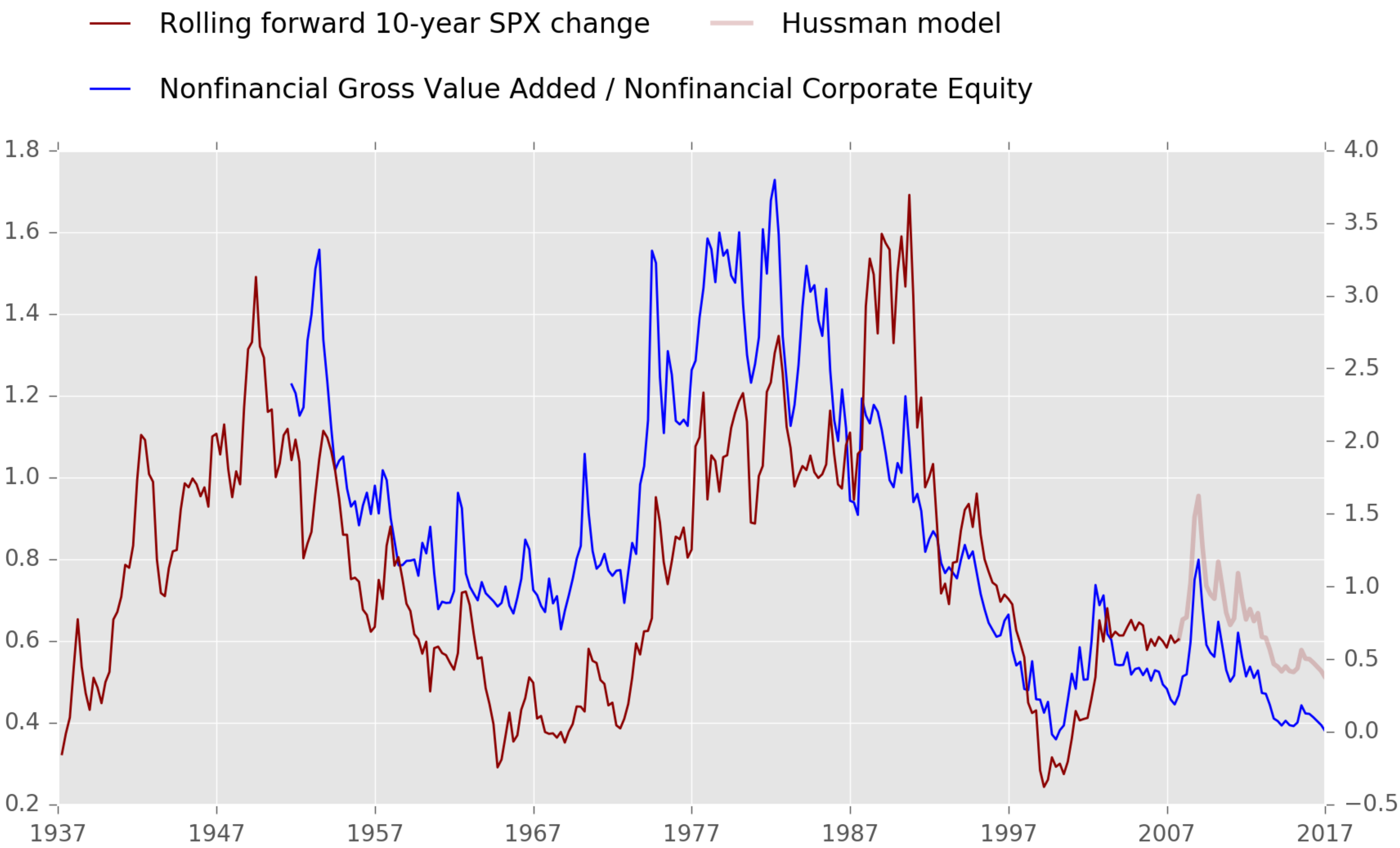
source: Opoka TFI, Hussman Funds

Value vs price



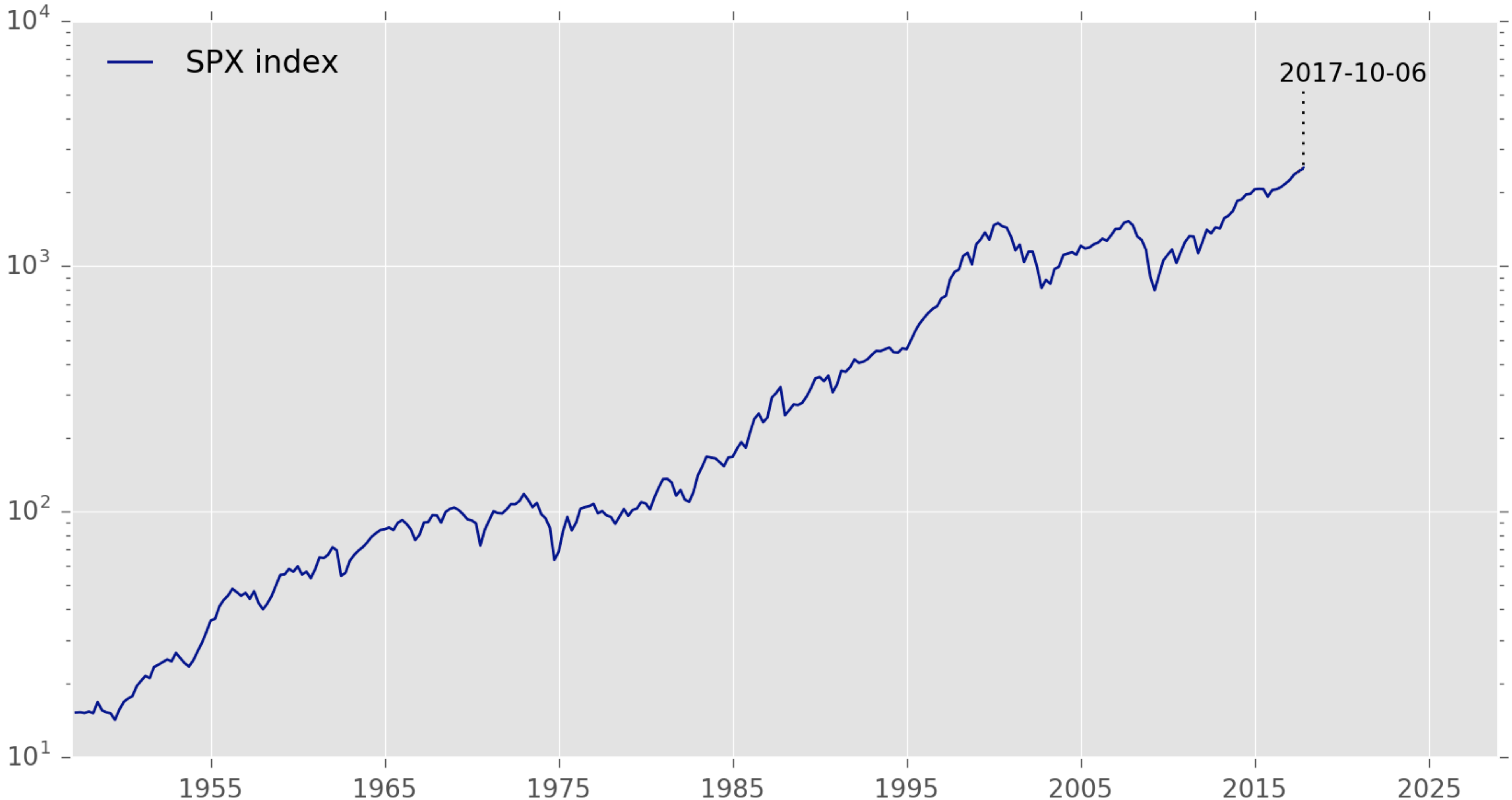
source: Opoka TFI, Hussman Funds

Value vs price



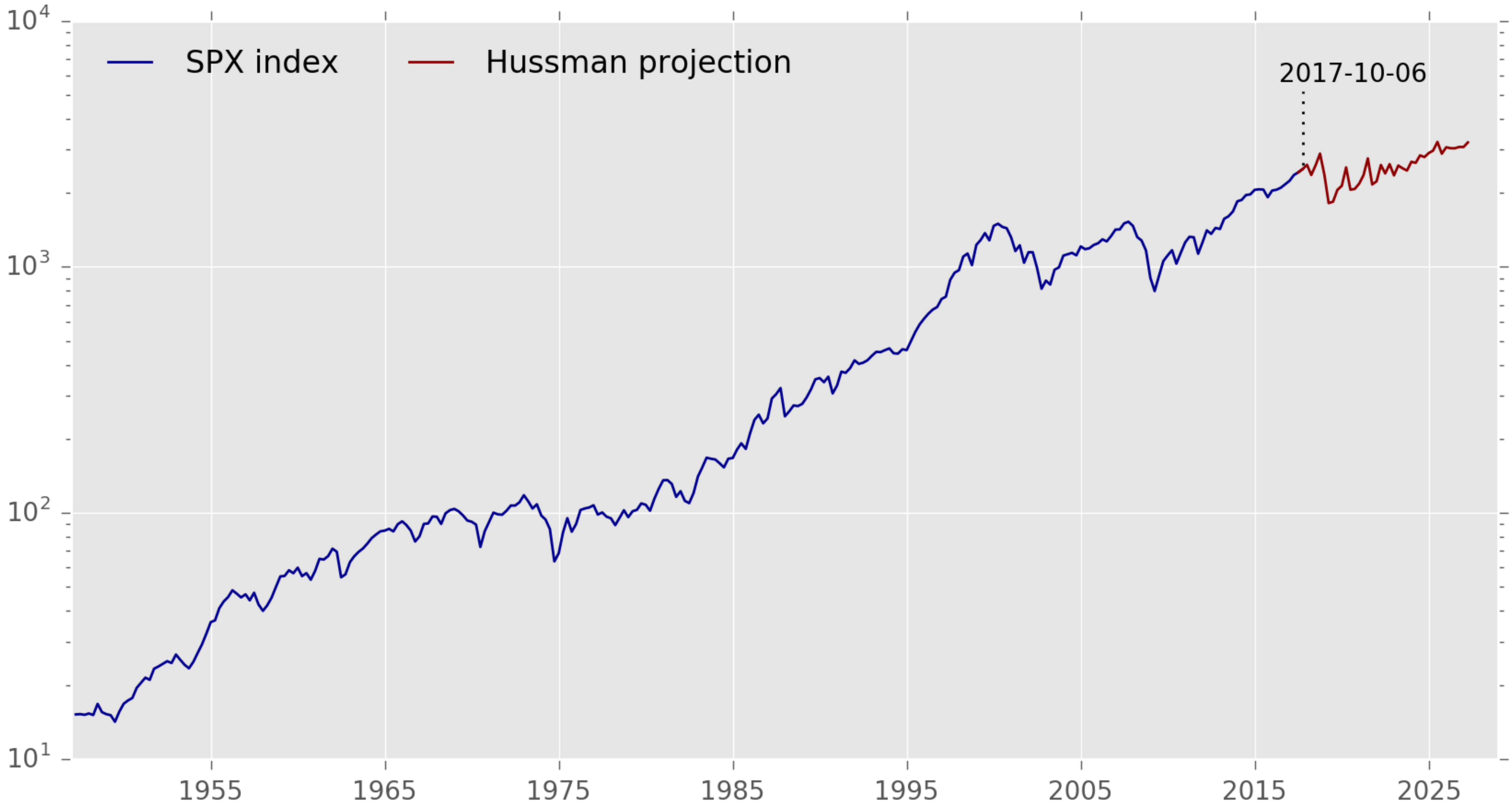
source: Opoka TFI, Hussman Funds

Value vs price



source: Opoka TFI, Hussman Funds

Value vs price

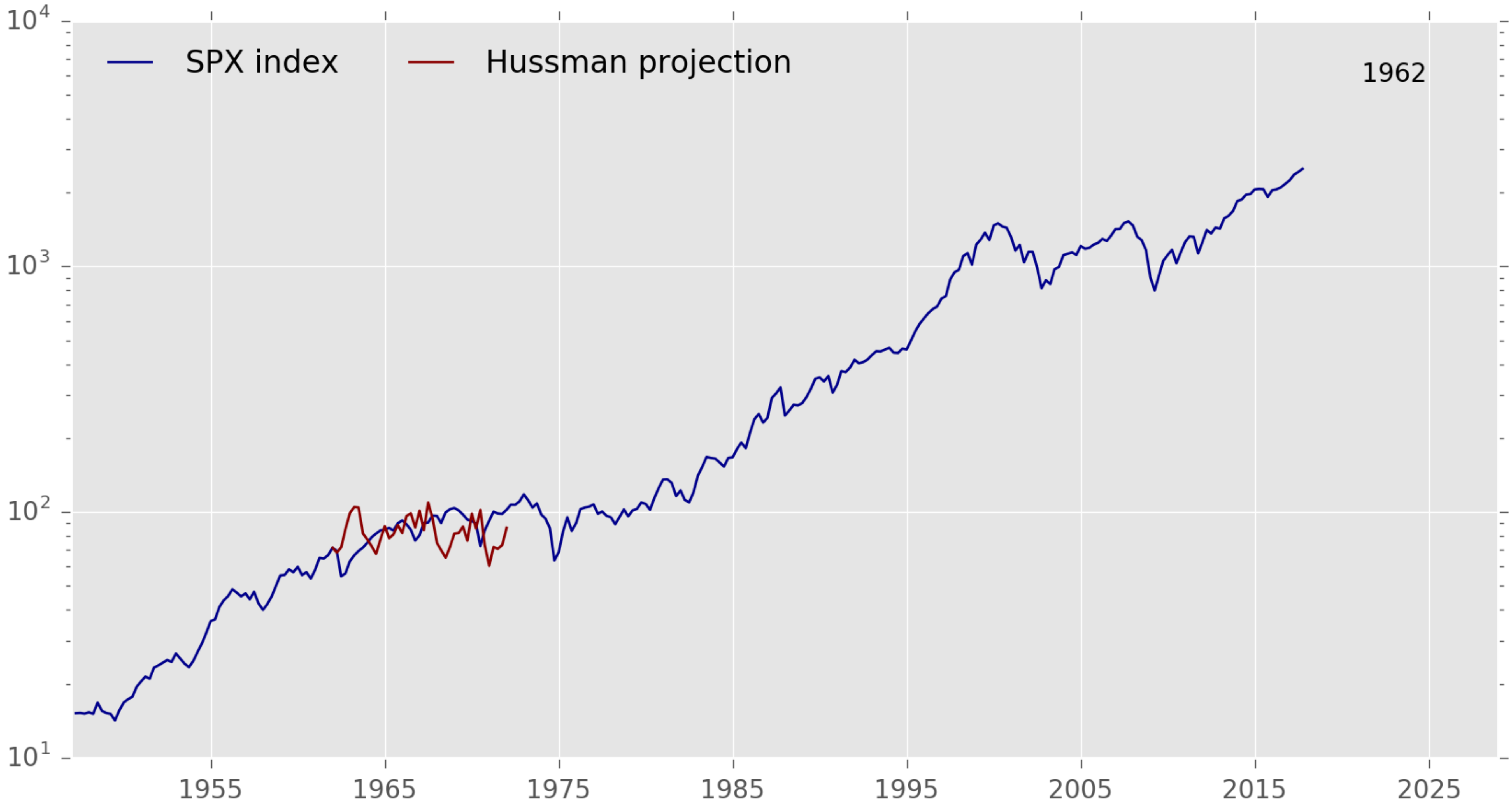


source: Opoka TFI, Hussman Funds

Value vs price

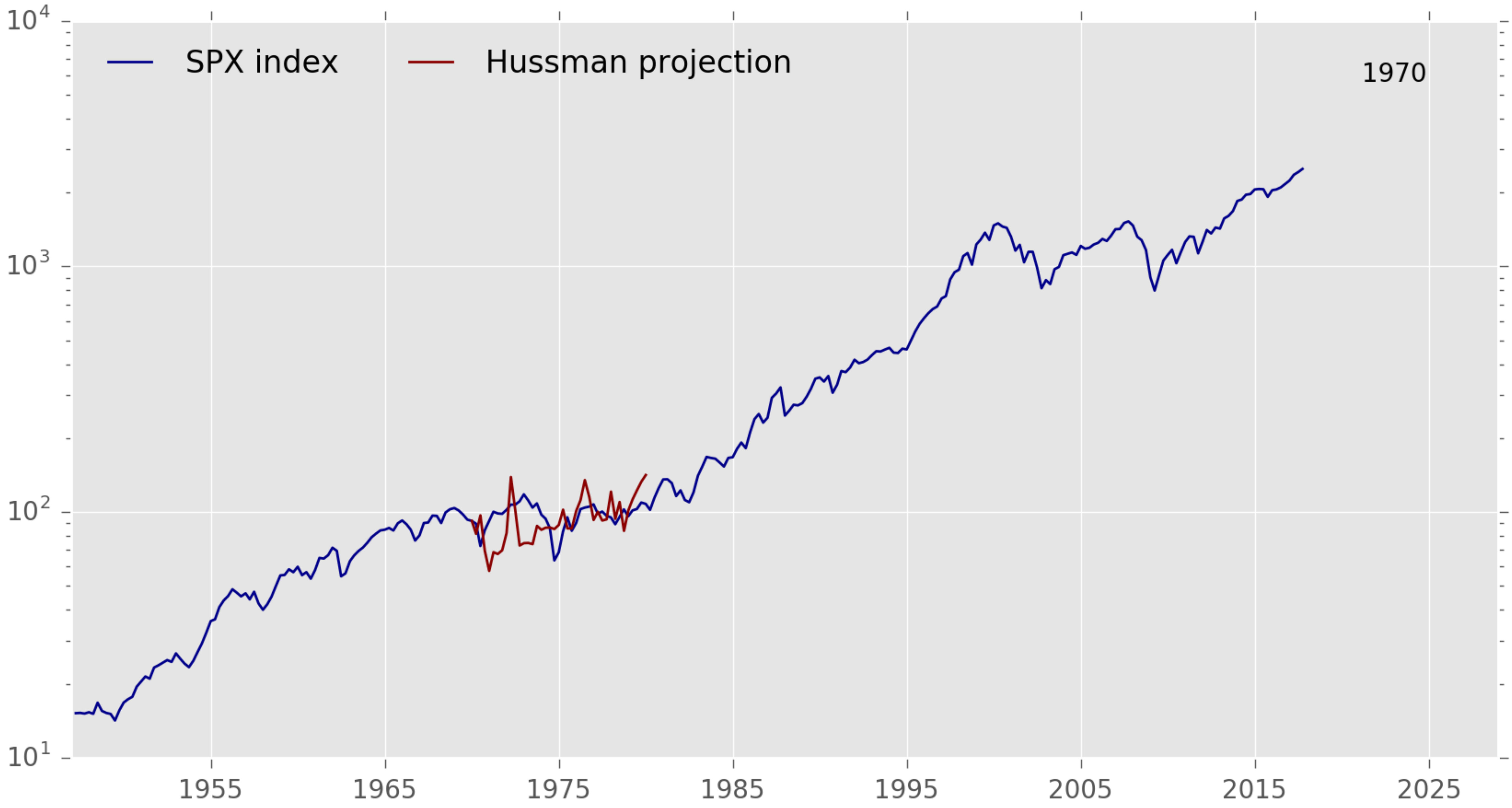
Let’s see how accurate would these projections be, if calculated on previous price data…

Value vs price



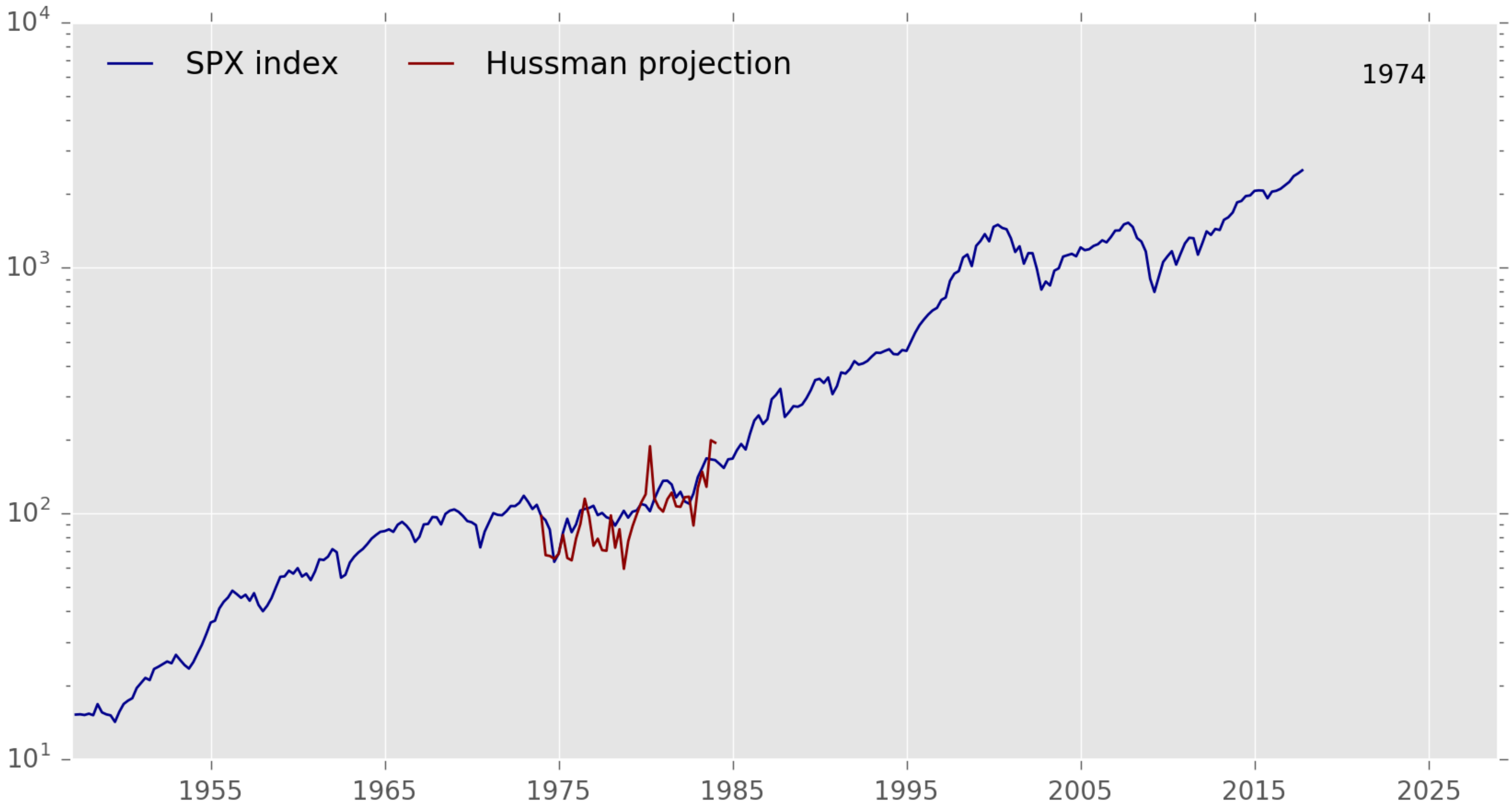
source: Opoka TFI, Hussman Funds

Value vs price



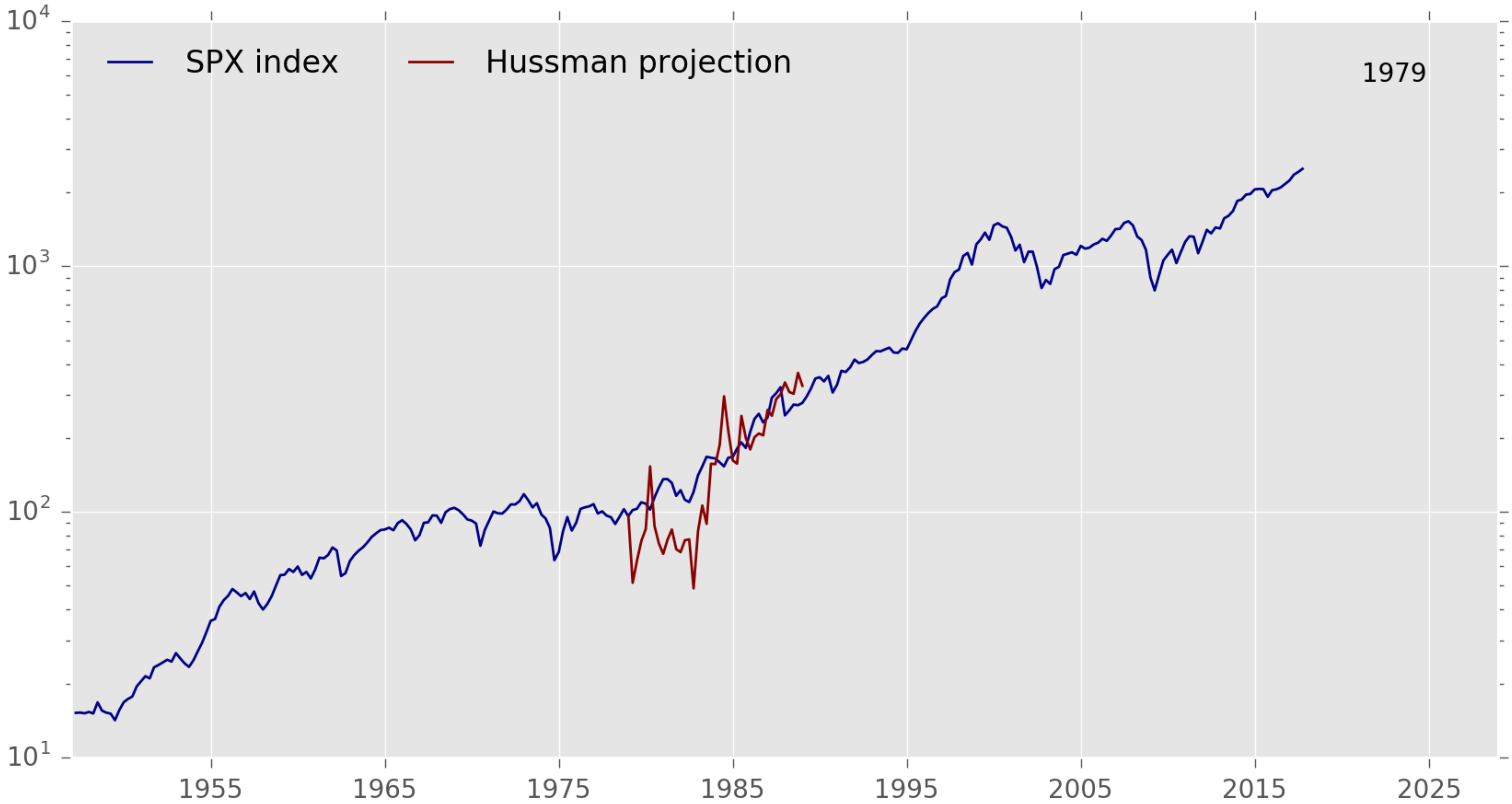
source: Opoka TFI, Hussman Funds

Value vs price



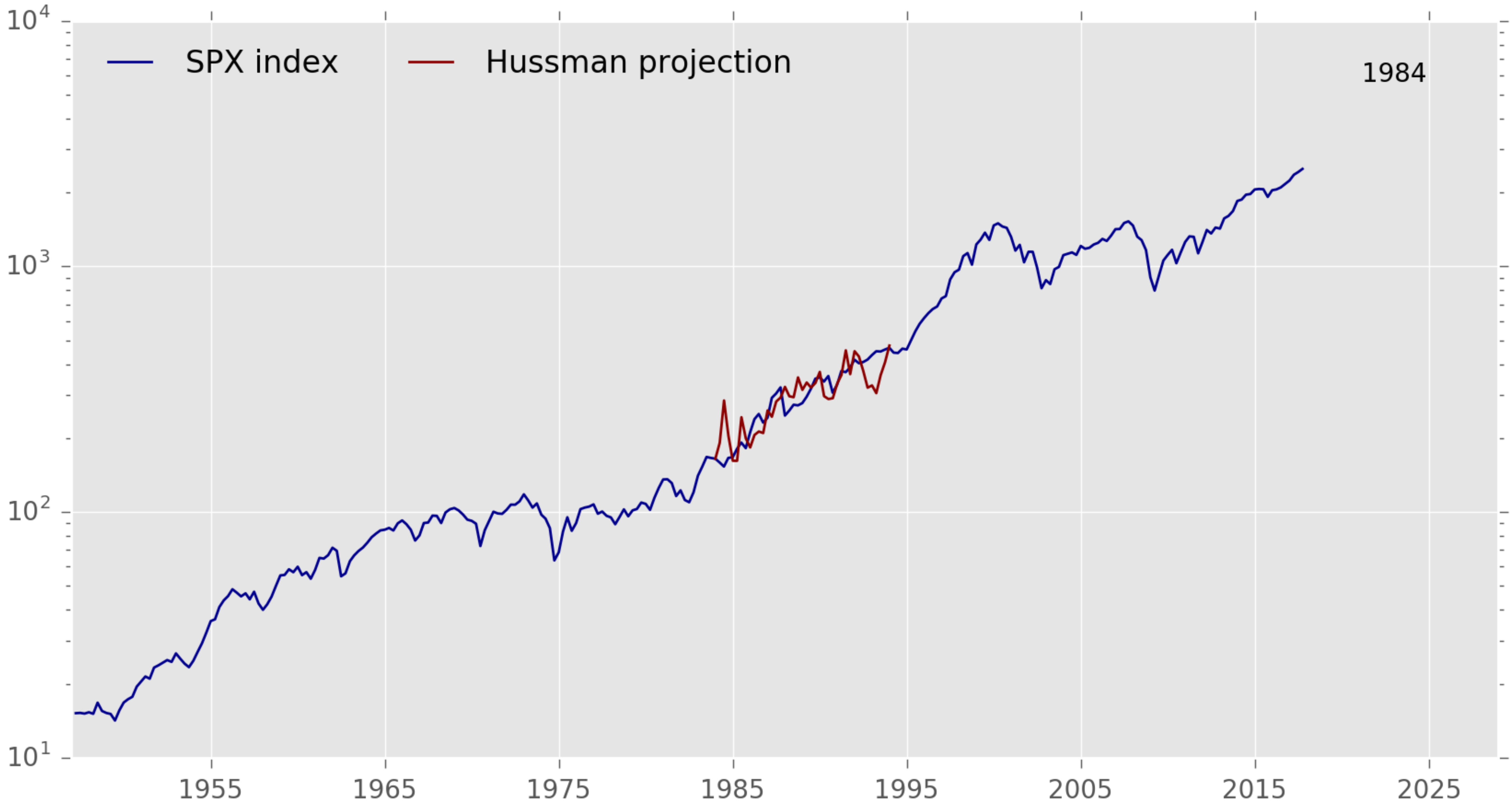
source: Opoka TFI, Hussman Funds

Value vs price



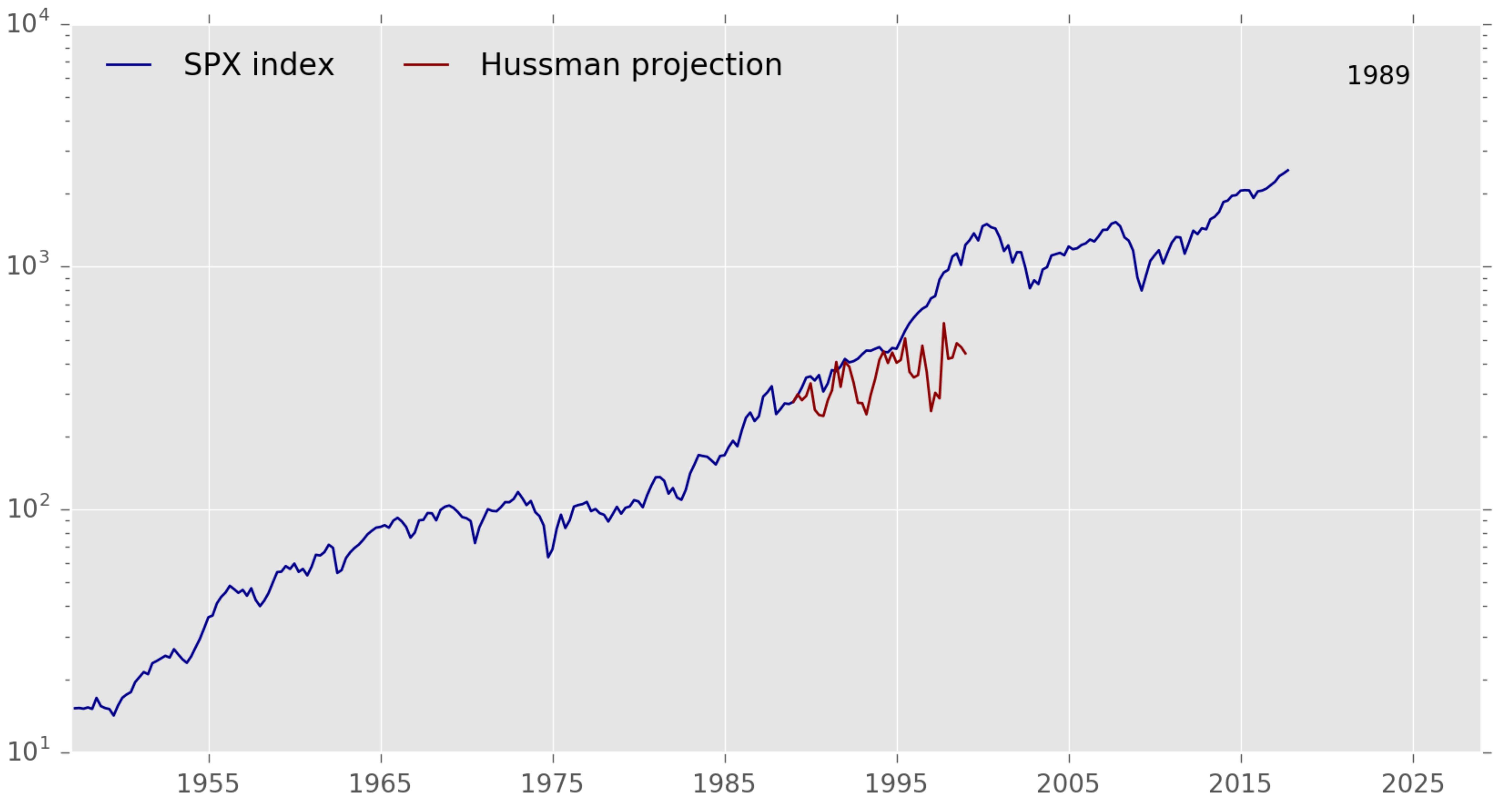
source: Opoka TFI, Hussman Funds

Value vs price



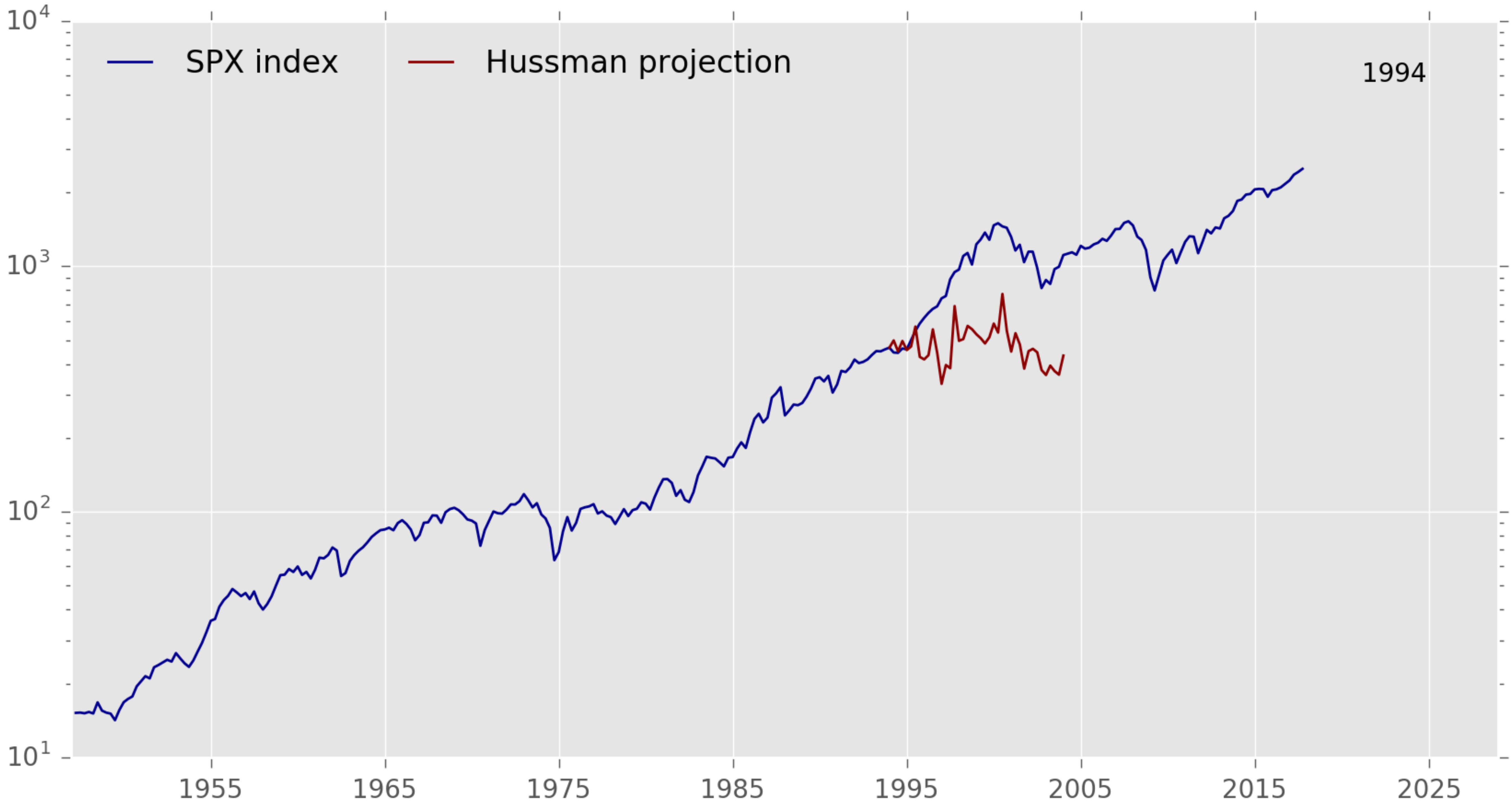
source: Opoka TFI, Hussman Funds

Value vs price



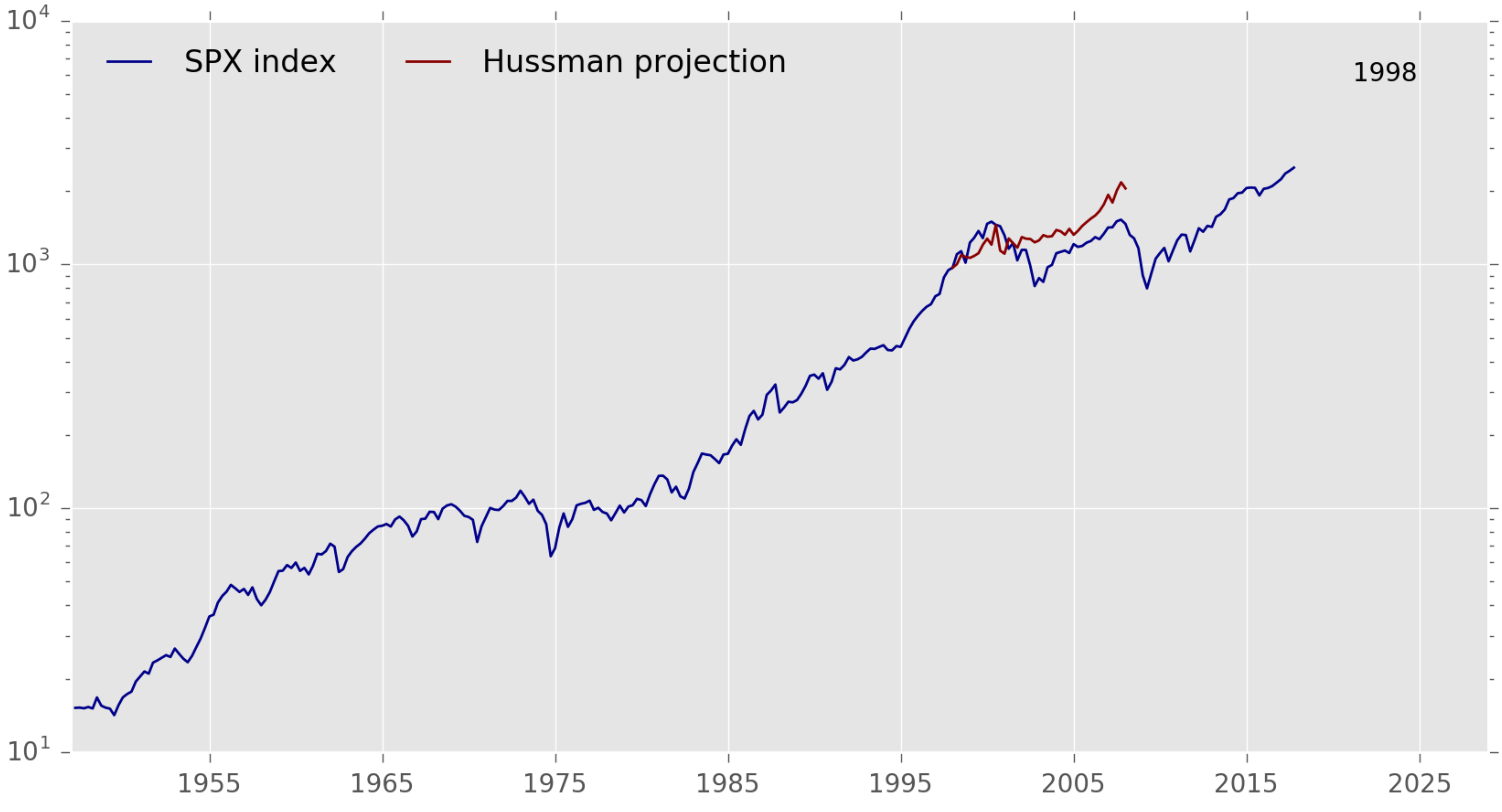
source: Opoka TFI, Hussman Funds

Value vs price



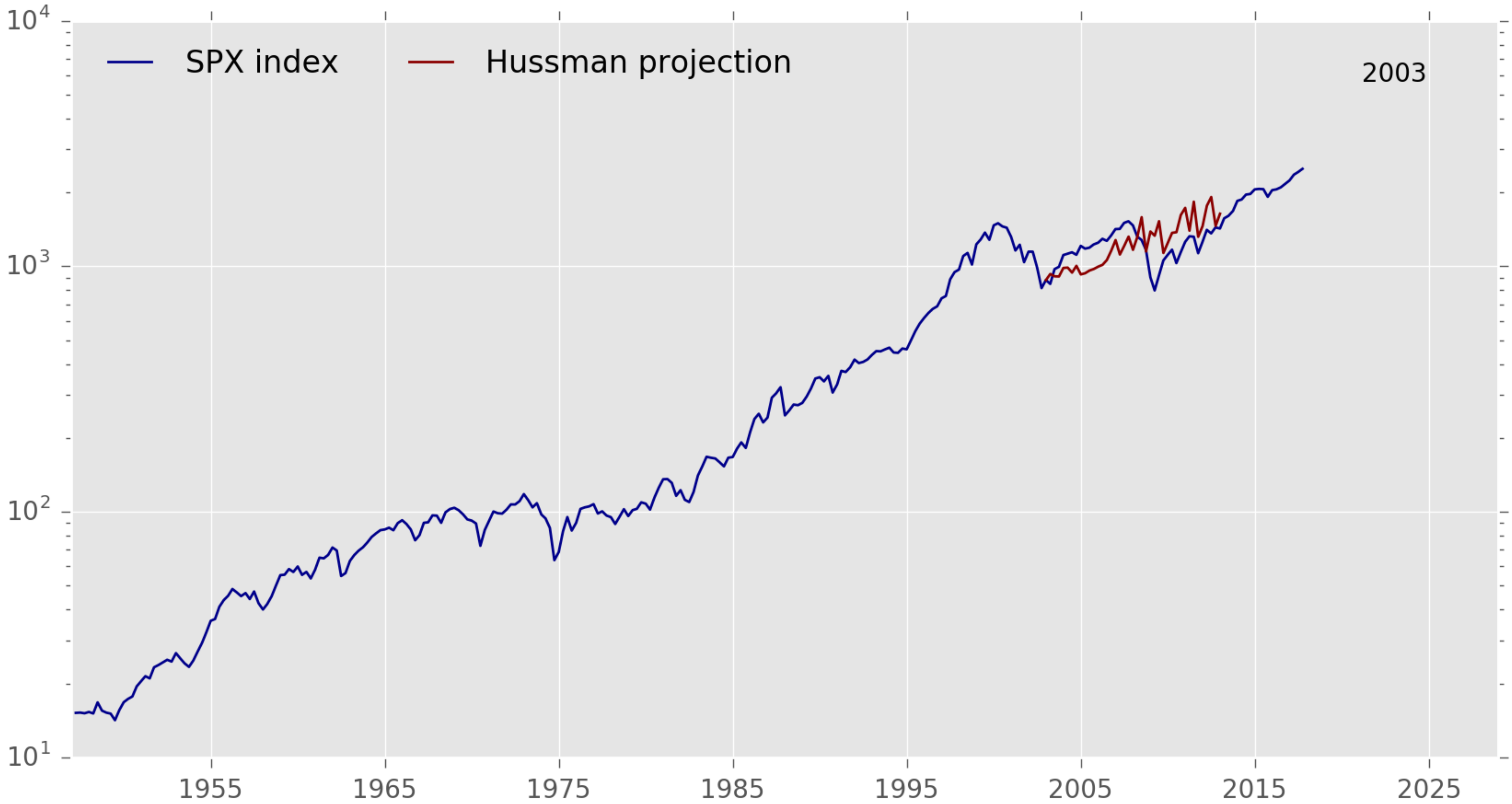
source: Opoka TFI, Hussman Funds

Value vs price



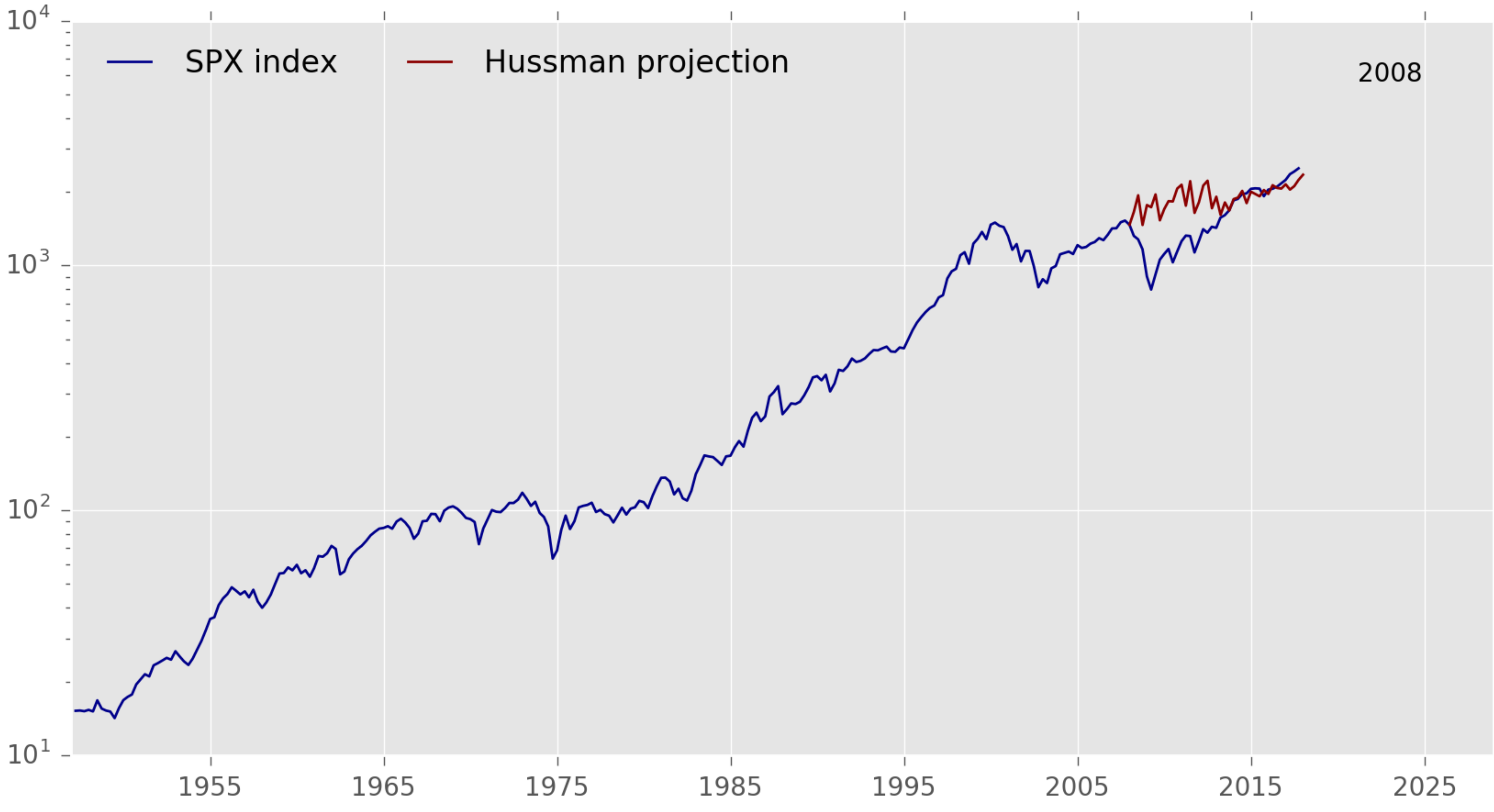
source: Opoka TFI, Hussman Funds

Value vs price



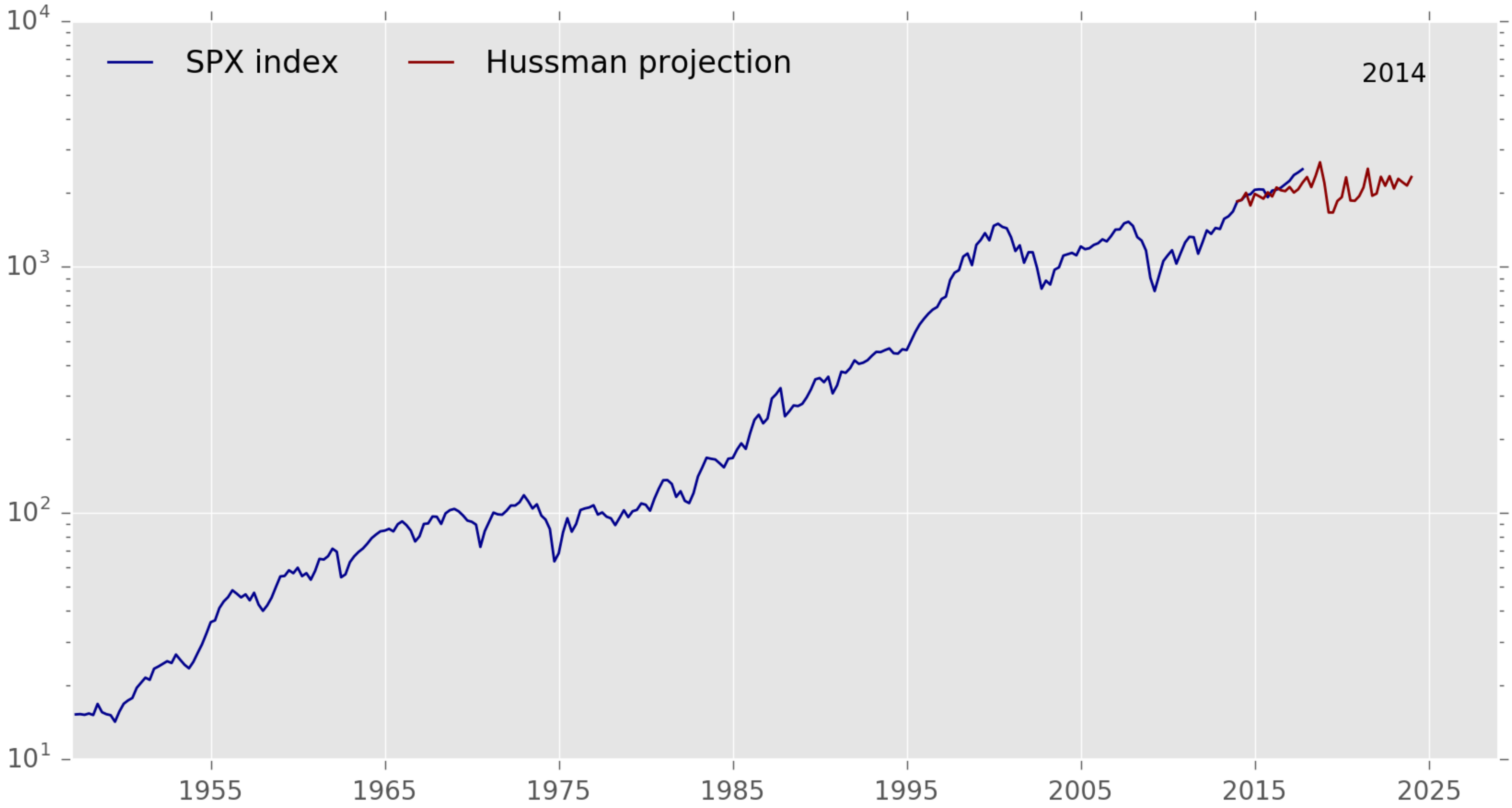
source: Opoka TFI, Hussman Funds

Value vs price



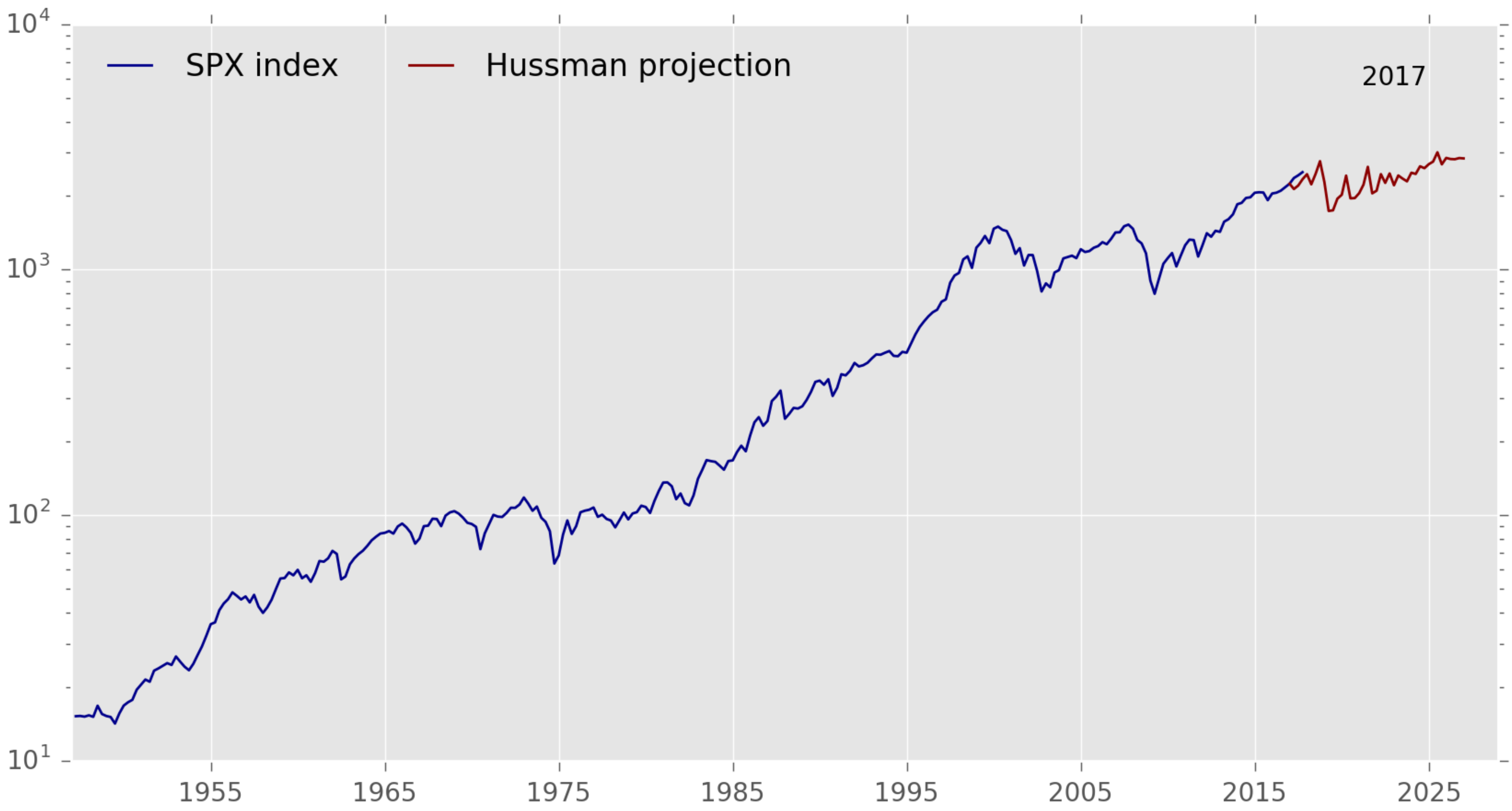
source: Opoka TFI, Hussman Funds

Value vs price



source: Opoka TFI, Hussman Funds

Value vs price



source: Opoka TFI, Hussman Funds

Value vs price

The actual path (pattern) of the stock market index was usually wrong, but the general direction (flat in the 60s and 70s, upwards in the 80s, flat in the first decade of 2000s) turned out correct.

The biggest discrepancy came in the 90s and in the recent decade (this still remains to be confirmed).

Cycles and trends

Cycles and trends

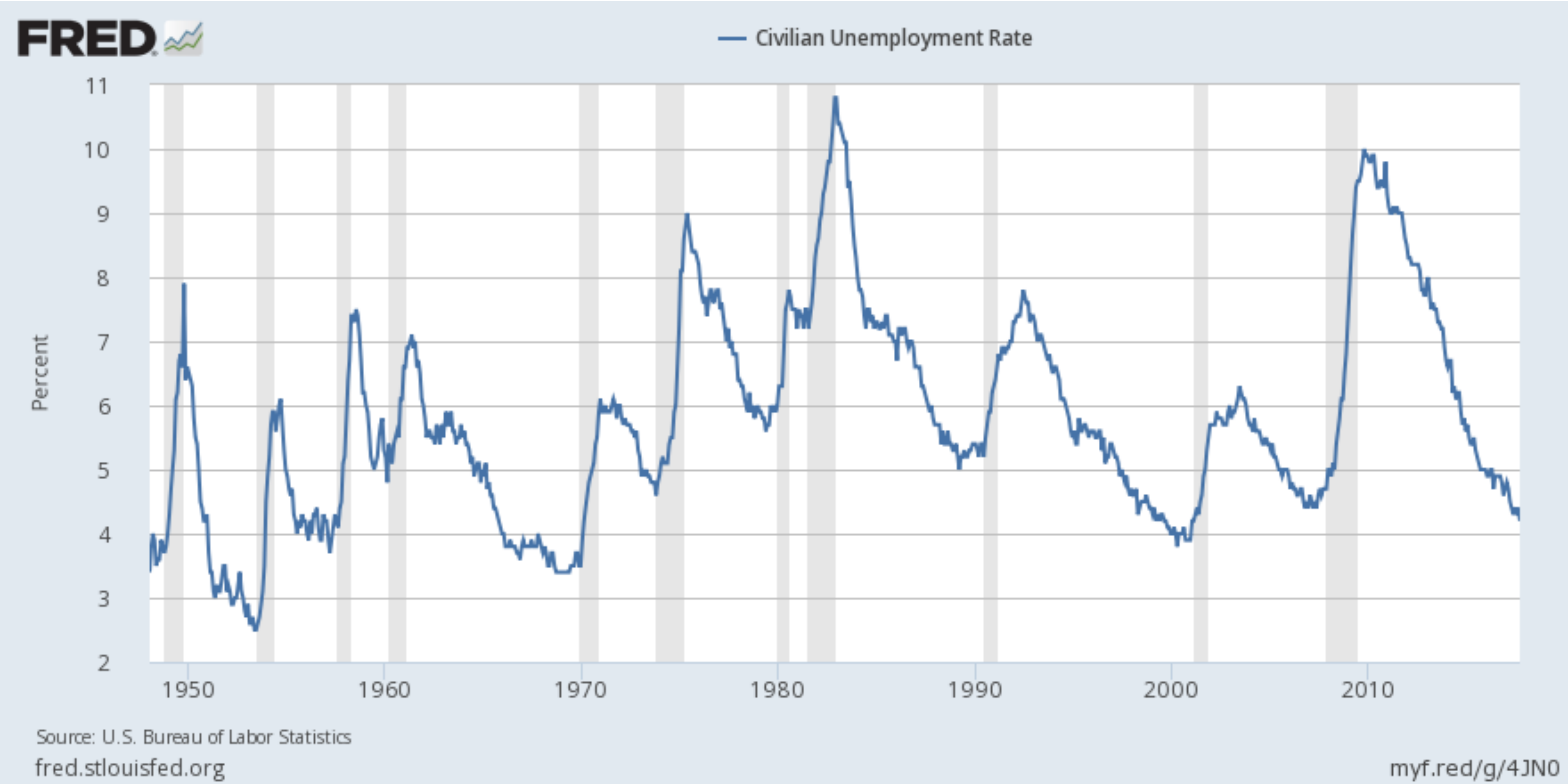
Financial markets exhibit cyclical characteristics.

Cycles and trends

Financial markets exhibit cyclical characteristics.

There are also trends, prolonged relative outperformance periods of some assets or asset classes relative to others.

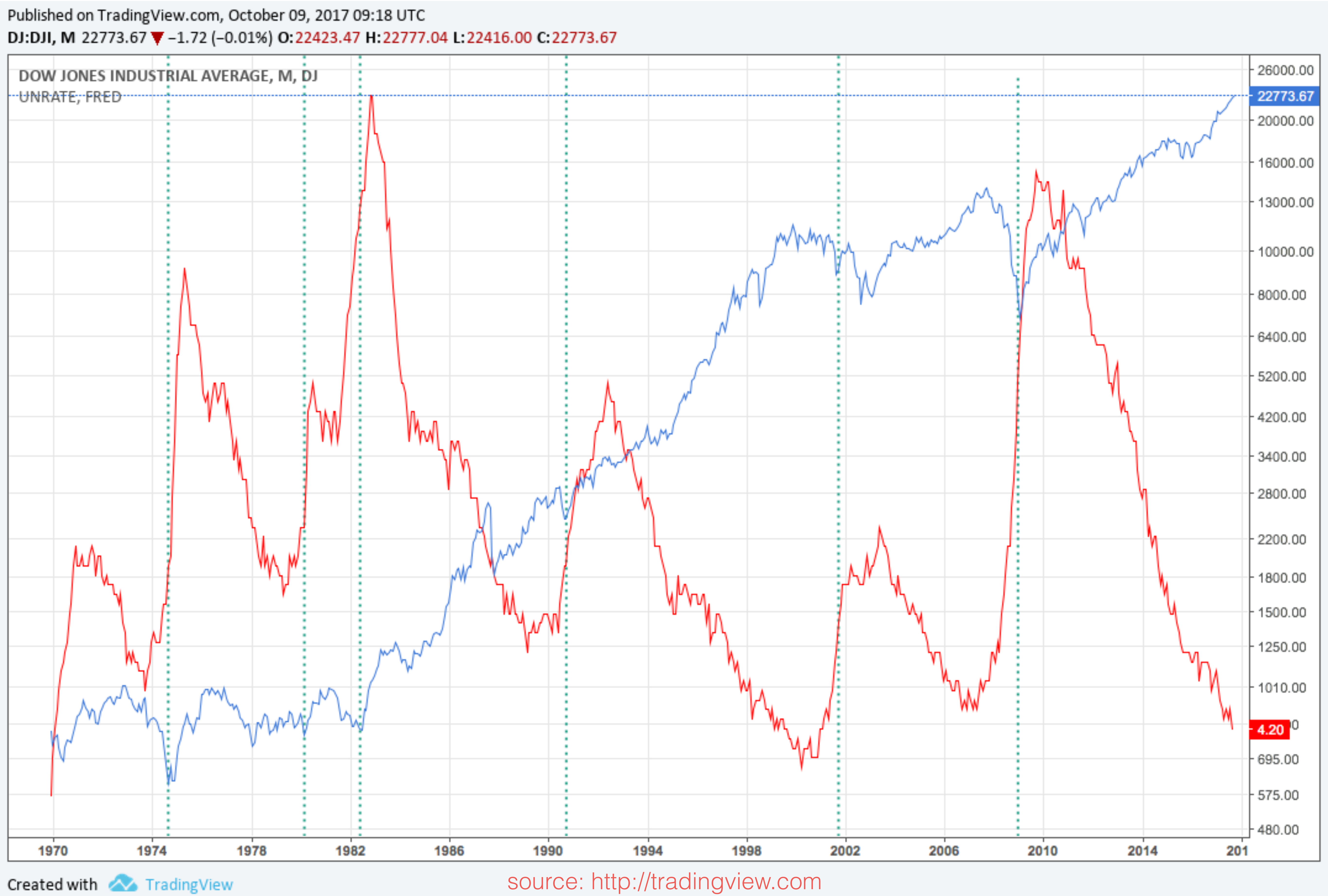
Cycles and trends



US Civilian Unemployment Rate

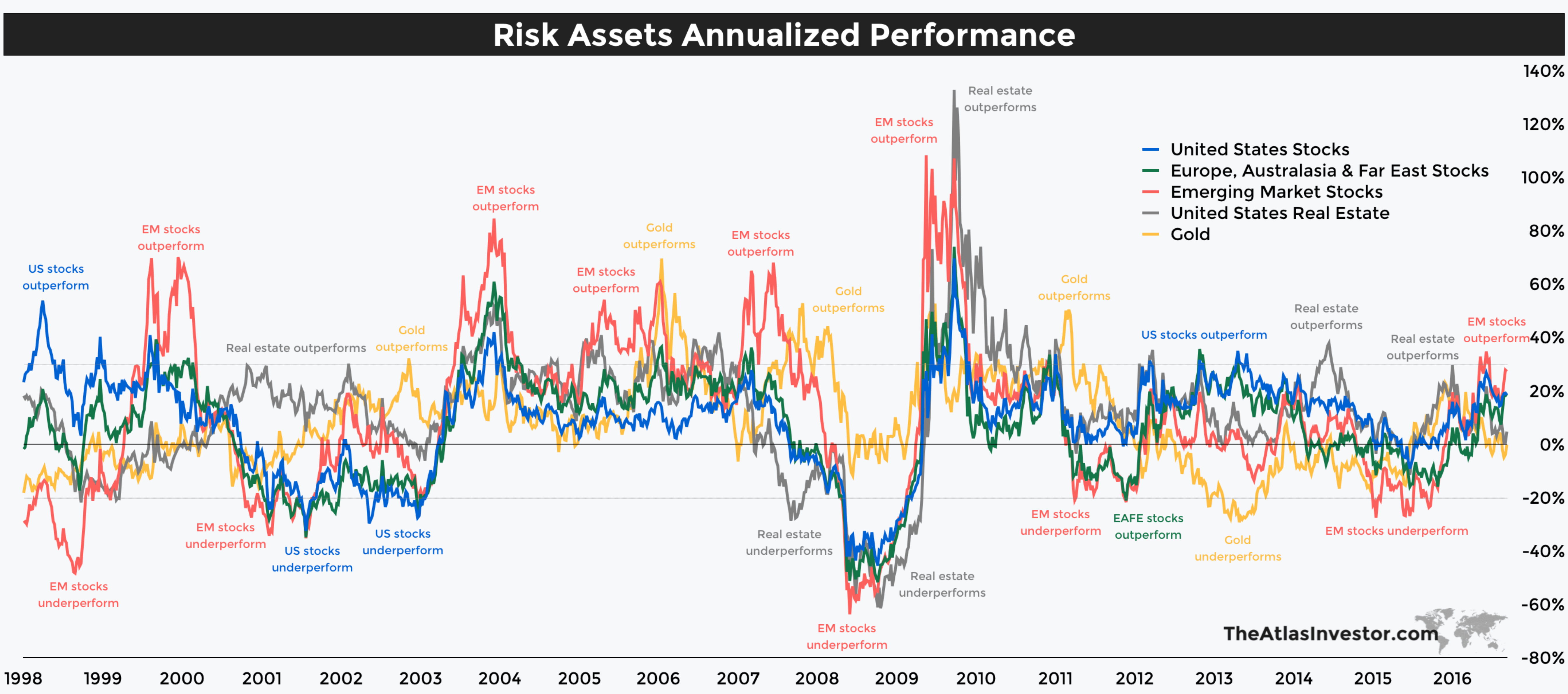
source: Federal Reserve Economic Data

Cycles and trends



source: http://tradingview.com

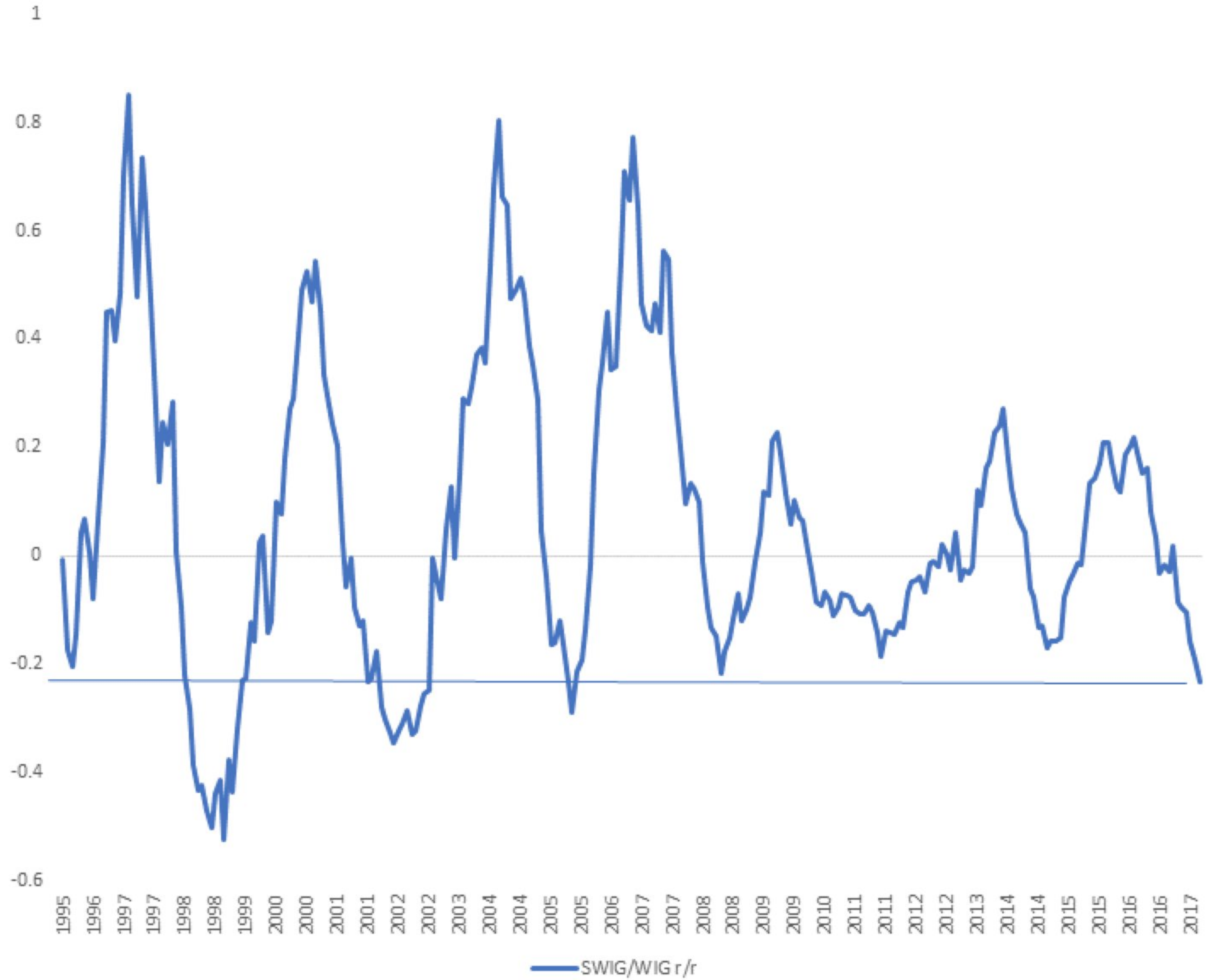
Cycles and trends



Rolling 1-year rate of return of 5 main risk assets

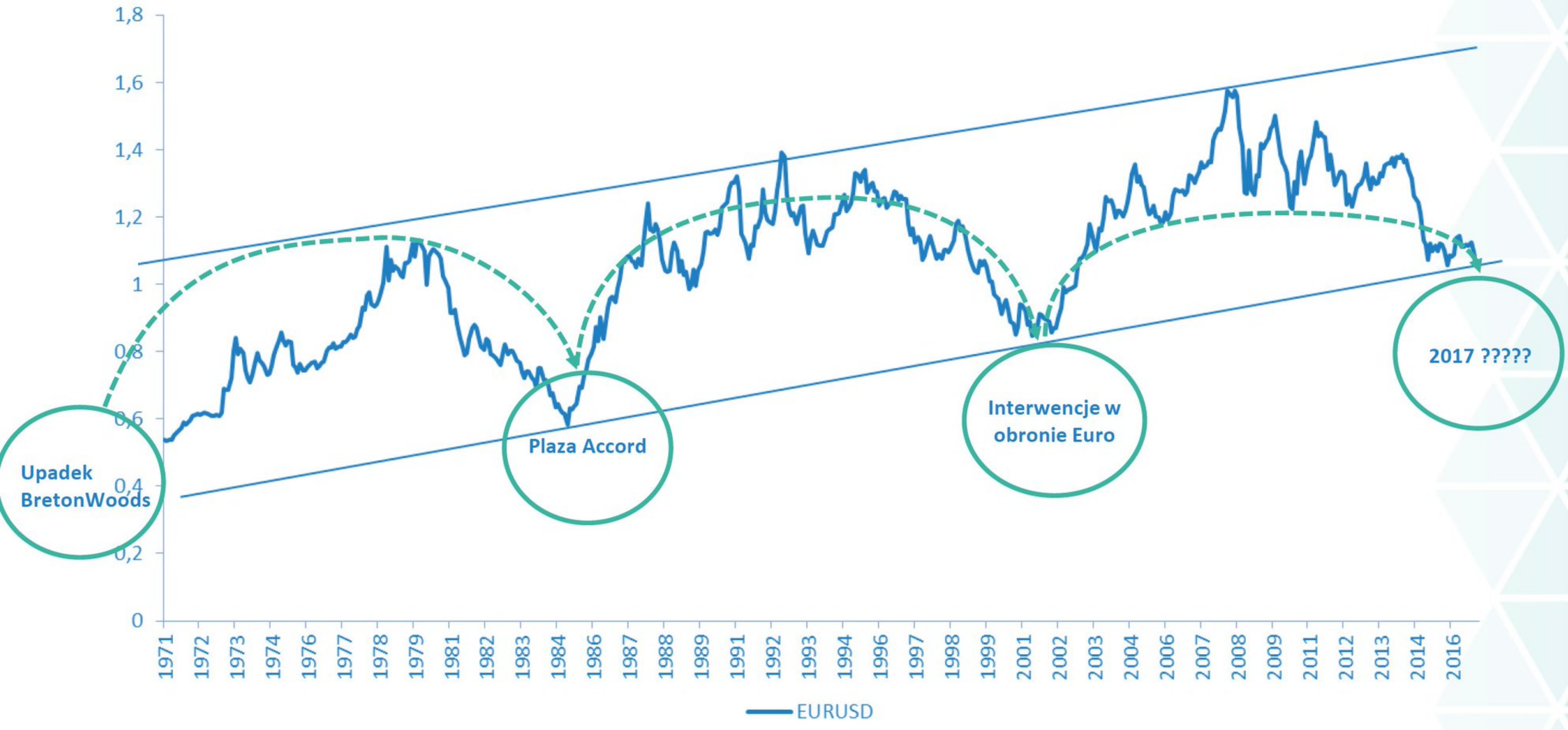
source: http://TheAtlasInvestor.com

Cycles and trends



Rolling 1-year rate of return of SWIG80/WIG, source: Opoka TFI

Cycles and trends



EUR/USD 1999-2017, DEM/USD before 1999, source: Opoka TFI

Interdependence of asset classes

Interdependence of asset classes

Investors often think of different asset classes (currencies, equities, commodities, bonds) as distinct and independent. In reality, the market is a complexly connected system, so even distinct asset classes might become highly correlated at times.

Sometimes this interdependence has a strong impact on investment outcomes, other times a portfolio of seemingly uncorrelated assets might be more risky than previously thought.

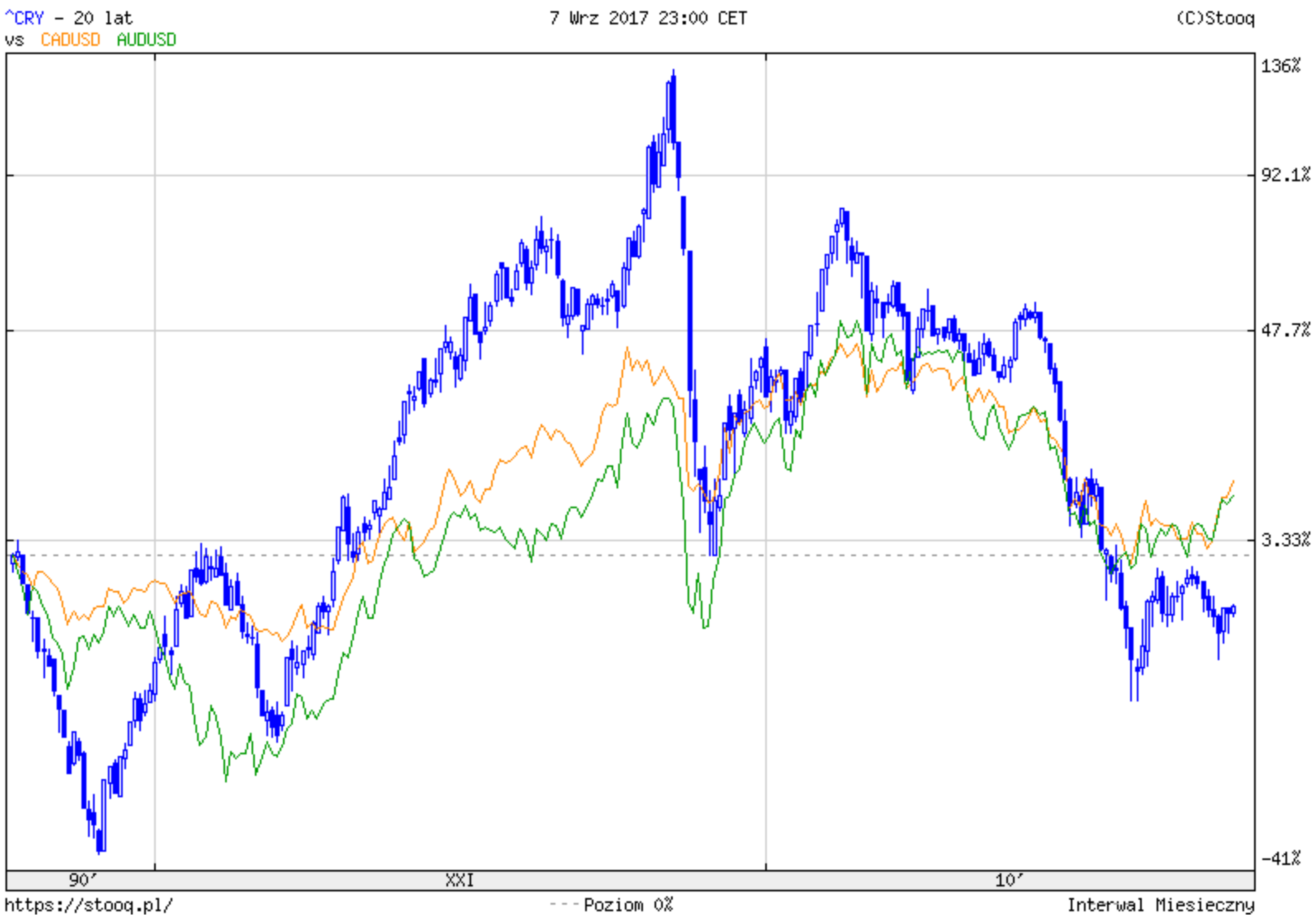
Interdependence of asset classes

impact of the currency on returns, source: stooq.com

Interdependence of asset classes

impact of the currency on returns, source: stooq.com

Interdependence of asset classes



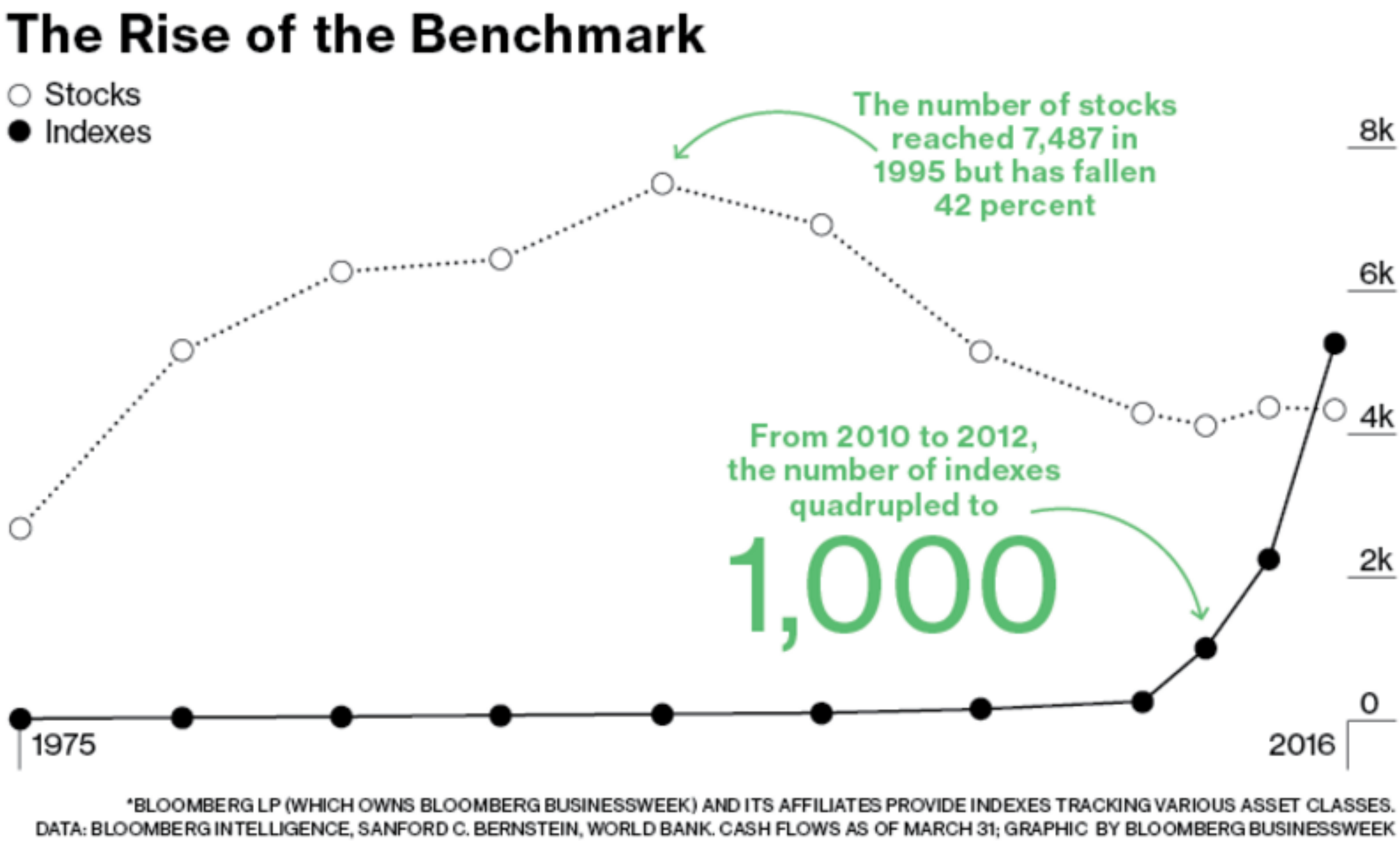
commodity index vs „commodity currencies", source: stooq.com

Passive vs Active investing

Passive vs Active investing

Recently a passive „buy and hold a market index or an ETF" approach has gained high popularity

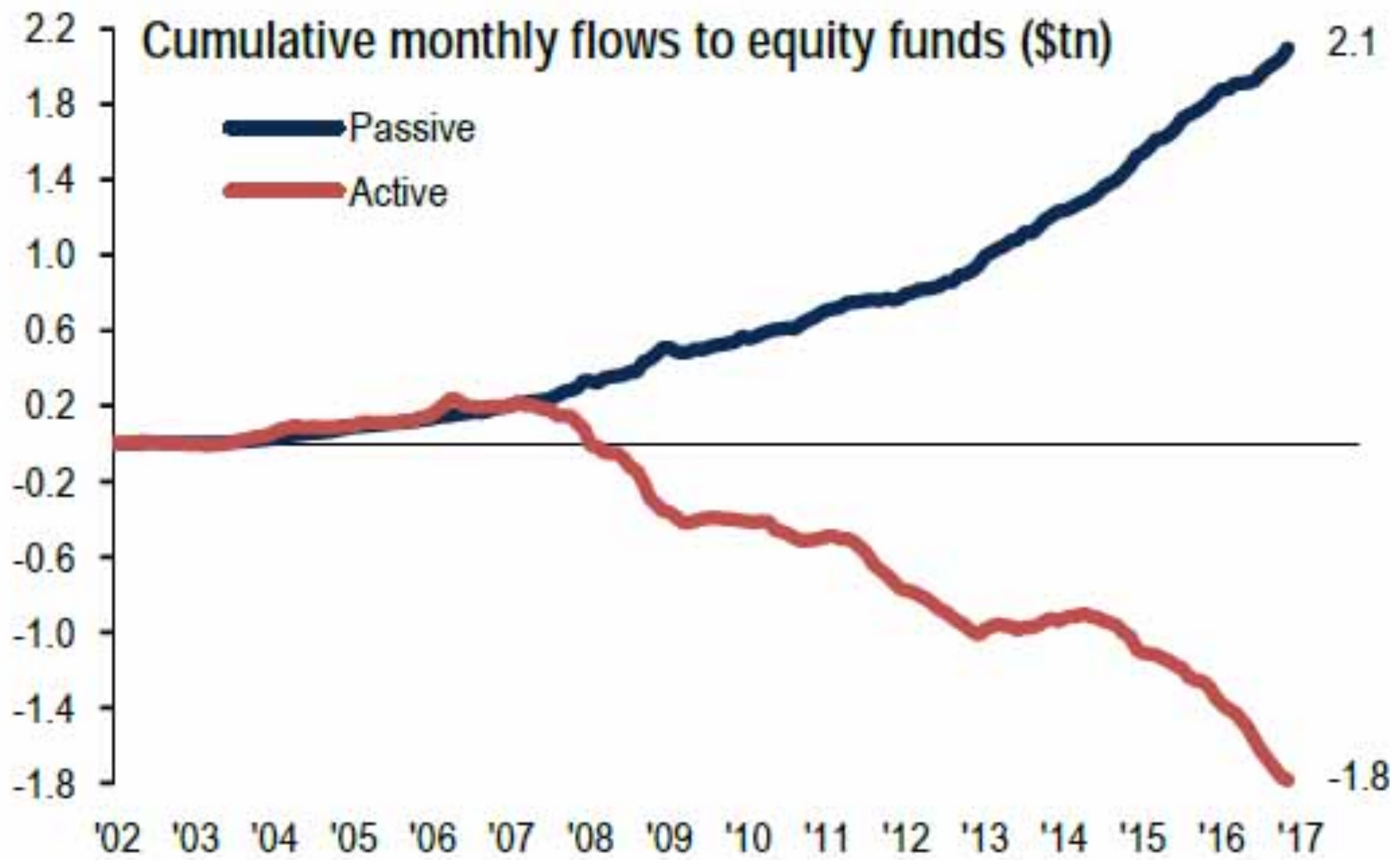
Passive vs Active investing



source: bloomberg.com

Passive vs Active investing

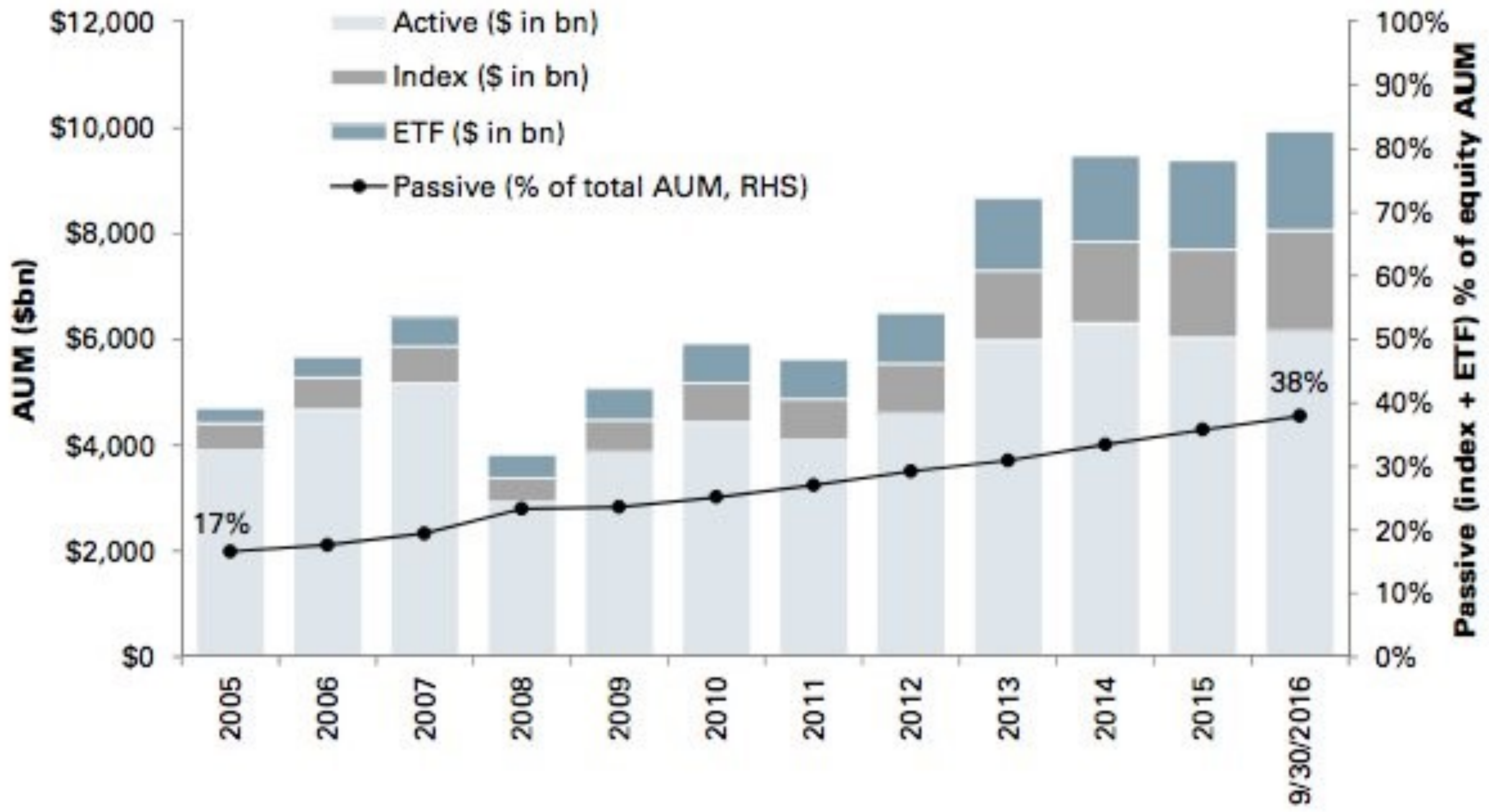
Chart 3: Passive smashing active



Note: based on EPFR Global's monthly dataset (more comprehensive coverage)
Source: BofA Merrill Lynch Global Investment Strategy, EPFR Global

Passive vs Active investing

Exhibit 1: Passive investing accounts for nearly 40% of total US equity AUM, more than twice the level in 2005
AUM of US-domiciled equity mutual funds, index funds and ETFs; passive share of total AUM

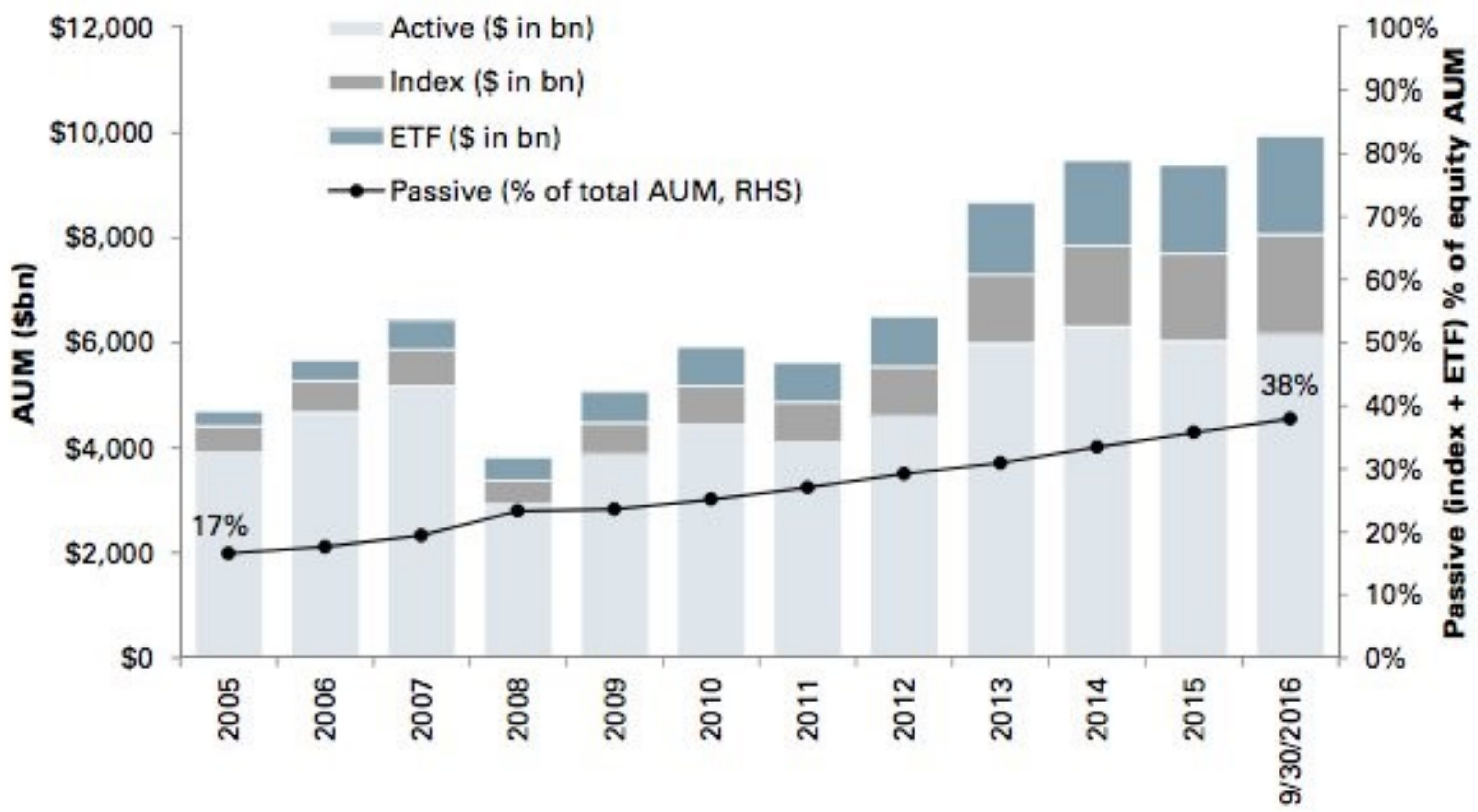


Source: Strategic Insight, Goldman Sachs Global Investment Research.

Problem 1:

Passive vs Active investing

Exhibit 1: Passive investing accounts for nearly 40% of total US equity AUM, more than twice the level in 2005
AUM of US-domiciled equity mutual funds, index funds and ETFs; passive share of total AUM



Source: Strategic Insight, Goldman Sachs Global Investment Research.

Problem 1: market concentration

Passive vs Active investing

source: stooq.com

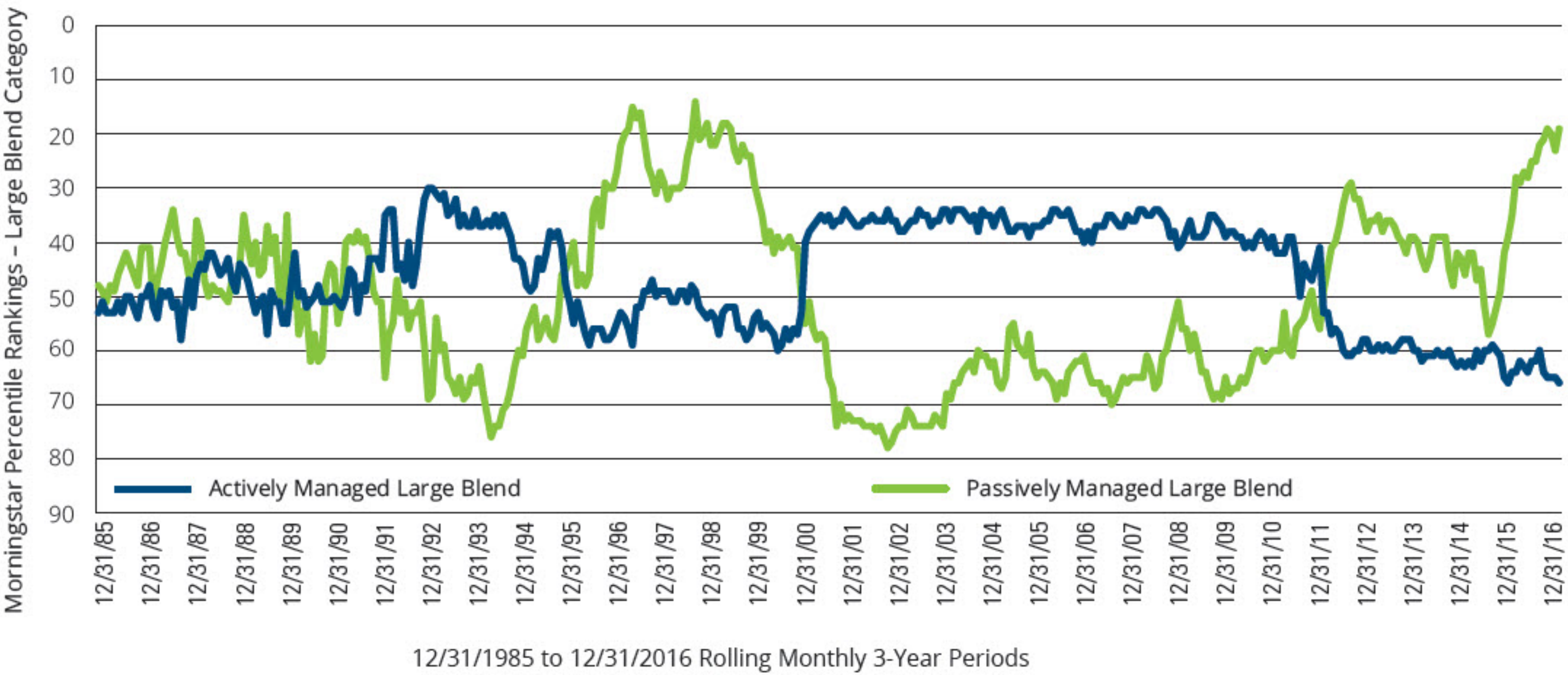
Problem 2: .

Passive vs Active investing

source: stooq.com

Problem 2: surviving drawdowns

Passive vs Active investing



* Active Large Blend is made up of funds from the Morningstar Large Blend category that are not index or enhanced index funds.
* S&P 500 Index Funds is represented by the Morningstar S&P 500 Tracking Category.

source: Morningstar, Hartford Funds

Passive vs Active investing

More market concentration = higher risk of flash crash events, similar to the **1987** market crash

Passive vs Active investing

More market concentration = higher risk of flash crash events, similar to the **1987** market crash

Sudden rise of popularity of ETFs in recent years (during an 8 year bull-market) means a lot of these new investors **did not experience a severe drawdown yet**

It is surviving drawdowns and not turning away from the investment in these crucial times that is essential for the success of passive investing (or for any successful investment strategy)

Passive vs Active investing

More market concentration = higher risk of flash crash events, similar to the **1987** market crash

Sudden rise of popularity of ETFs in recent years (during an 8 year bull-market) means a lot of these new investors **did not experience a severe drawdown yet**

It is surviving drawdowns and not turning away from the investment in these crucial times that is essential for the success of passive investing (or for any successful investment strategy)

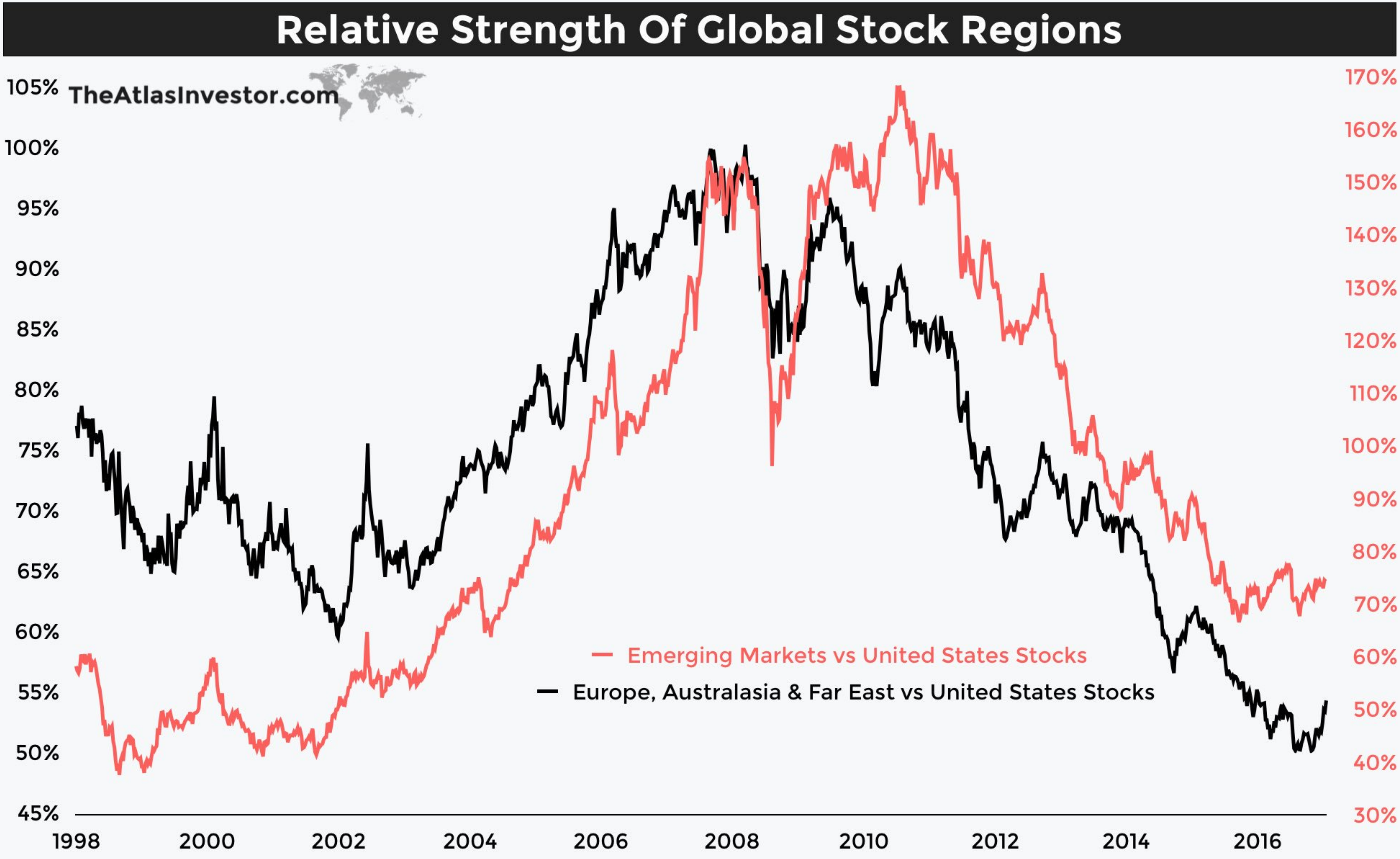
In general, passive investing is a sensible approach for a long term investor not interested in above-average investment returns

Passive usually outperforms active as more mature a bull market becomes

Still, the only way to achieve higher than average returns or better **risk/return** ratios is an active investment approach

Current state of the stock market

Current state of the stock market



relative performance of markets around the world, source: http://TheAtlasInvestor.com

Current state of the stock market

Global Stock Market Year To Date Performance

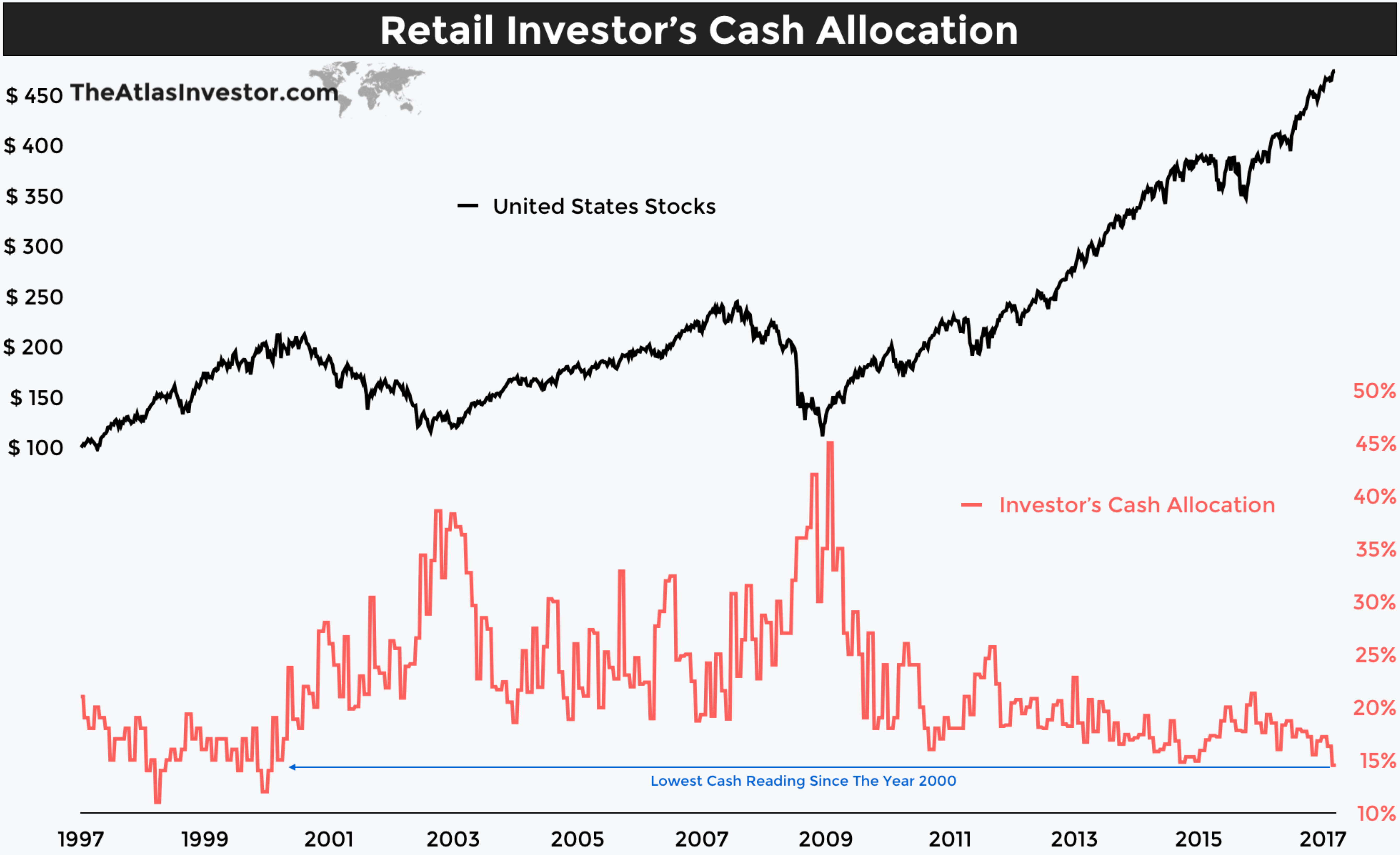
Country	ETF	YTD %	Country	ETF	YTD %	Country	ETF	YTD %
Poland	EPOL	51.4%	Italy	EWI	26.6%	Australia	EWA	15.2%
Turkey	TUR	45.2%	South Korea	EWY	26.6%	United Kingdom	EWU	14.0%
Austria	EWO	42.4%	Nigeria	NGE	24.9%	Vietnam	VNM	13.7%
Argentina	ARGT	31.5%	France	EWQ	24.4%	Indonesia	EIDO	13.1%
India	INP	31.0%	Sweden	EWD	24.3%	Japan	EWJ	12.5%
Chile	ECH	30.4%	Singapore	EWS	23.6%	The Philippines	EPHE	12.1%
Greece	GREK	30.2%	Belgium	EWK	22.3%	United States	SPY	11.3%
Netherlands	EWN	29.8%	United States (Tech)	QQQ	22.3%	United Arab Emirates	UAE	10.8%
Hong Kong	EWH	29.0%	Germany	EWG	21.6%	Canada	EWC	9.0%
Portugal	PGAL	28.6%	China (Shenzhen)	CNXT	21.4%	Israel	EIS	5.6%
Mexico	EWW	28.4%	Ireland	EIRL	20.9%	Saudi Arabia	KSA	5.3%
Taiwan	EWT	27.5%	Switzerland	EWL	20.2%	Eygpt	EGPT	4.9%
China (Shanghai)	ASHR	27.3%	Norway	ENOR	18.9%	United States (Real Estate)	VNQ	4.7%
Spain	EWP	27.1%	South Africa	EZA	18.7%	United States (Small Caps)	IWM	4.0%
Brazil	EWZ	26.8%	Thailand	THD	18.4%	Russia	RSX	1.9%
China (Hong Kong)	FXI	26.7%	Malaysia	EWM	17.6%	Qatar	QAT	-12.8%
			Colombia	GXG	15.8%	Pakistan	PAK	-18.2%

TheAtlasInvestor.com

as of September 2017, all results based on ETFs denominated in USD

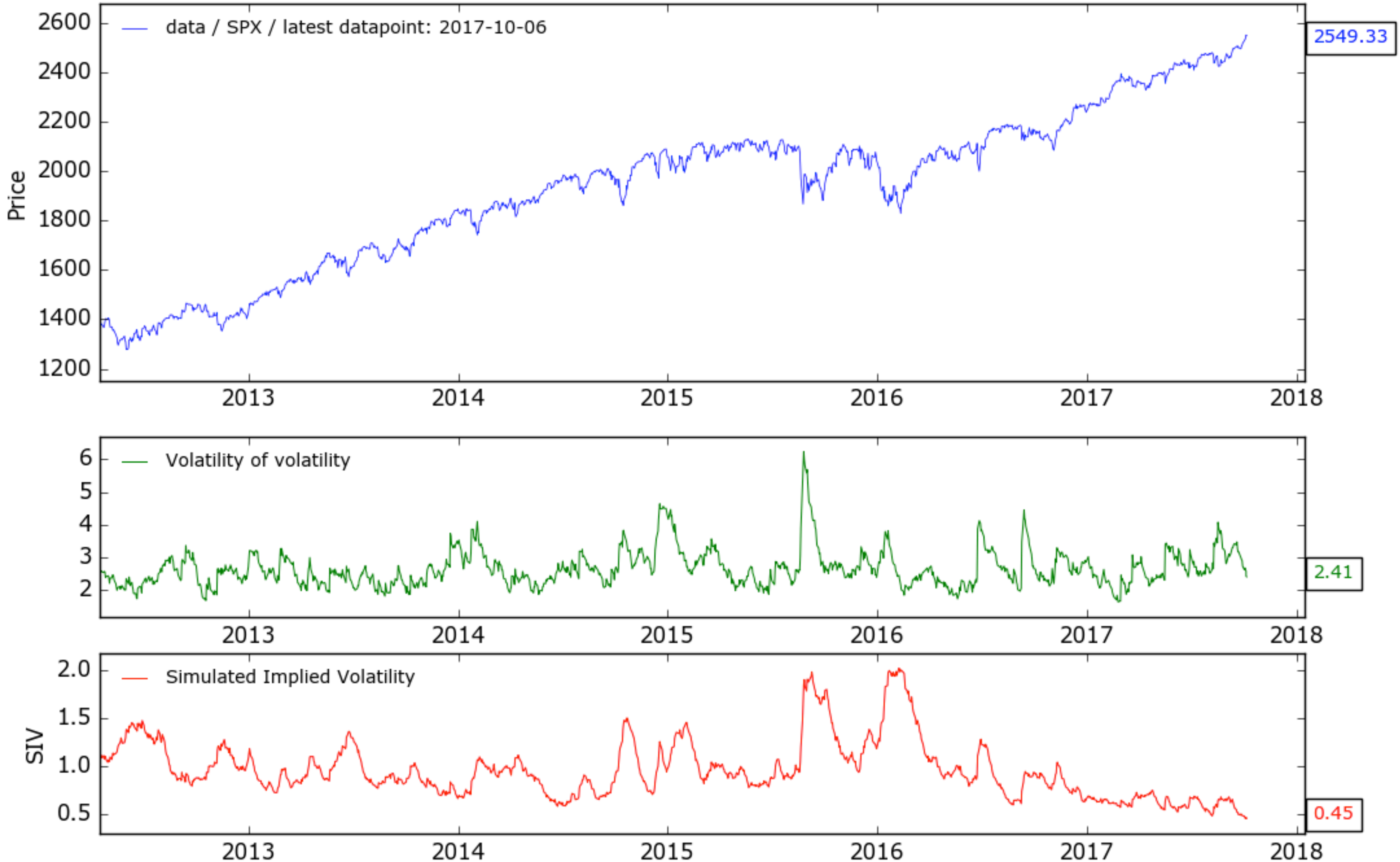
relative performance of markets around the world, source: http://TheAtlasInvestor.com

Current state of the stock market



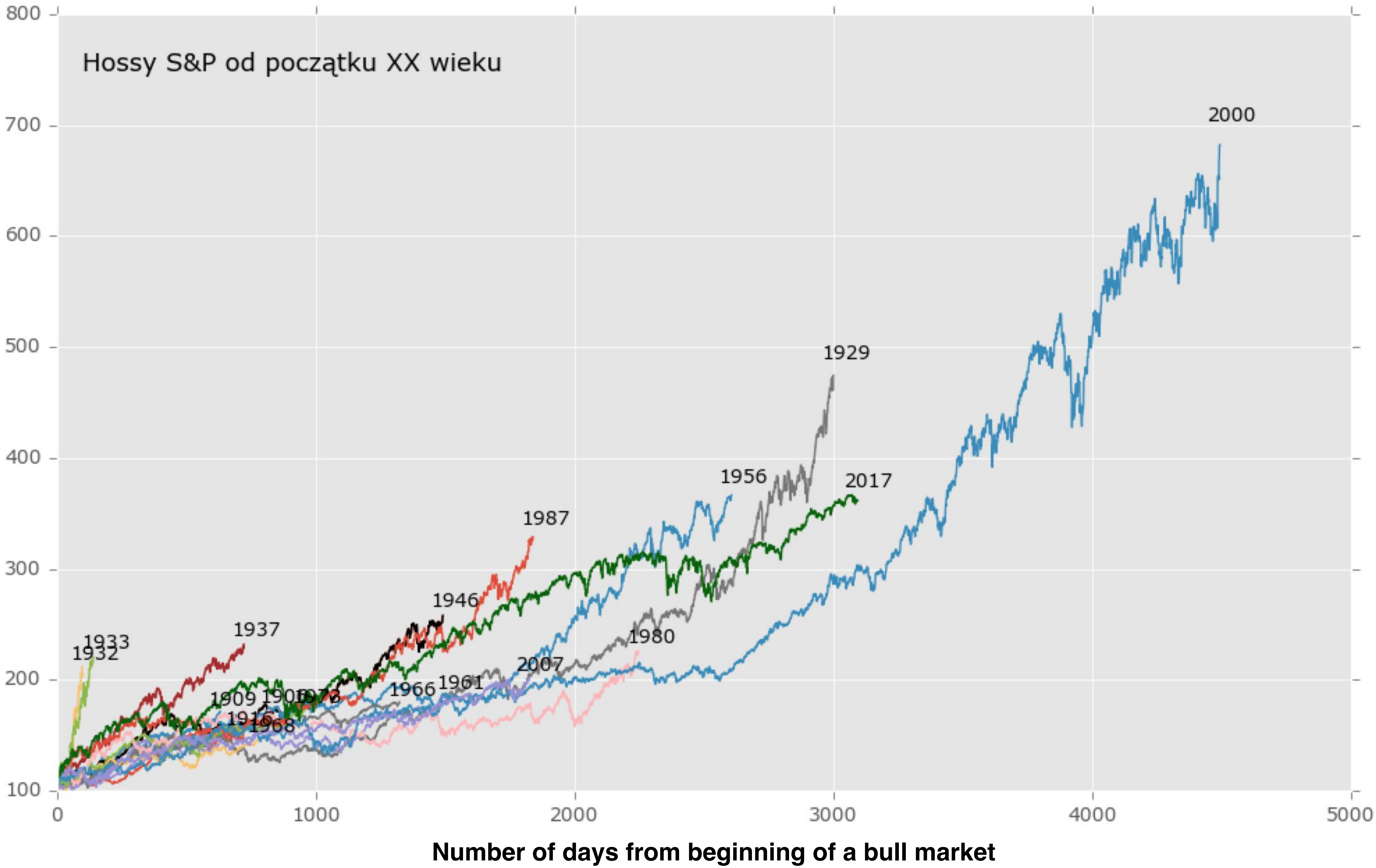
low cash allocations, but could be lower still

Current state of the stock market



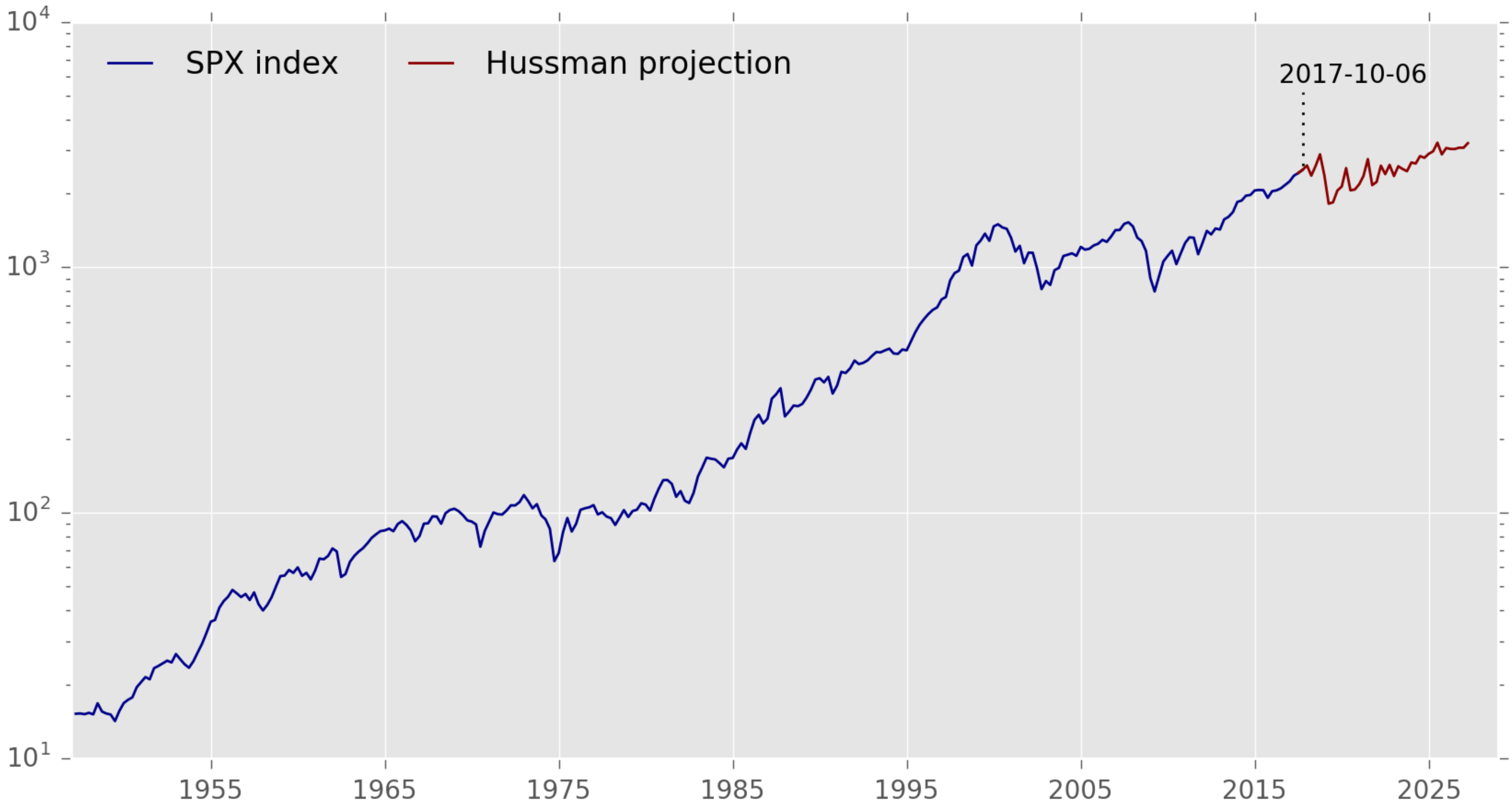
record low volatility; own work, updated at http://www.fuw.edu.pl/~glink/sejsmograf/

Current state of the stock market



second longest bull market… but it's still far below the highest reaching

Current state of the stock market



Will this projection turn out correct? Probably not, nonetheless it's a reasonable guide so we should be prepared for weaker index performance in the upcoming years

Summary

Summary

Due to the complex nature of markets and their participants, there exist mispricings and regularities in price behaviors than can be studied deeper.

Summary

Due to the complex nature of markets and their participants, there exist mispricings and regularities in price behaviors than can be studied deeper.

Among these are investor sentiment dynamics, capital flows, the cyclicality and trending of markets and interdependence of asset classes

Summary

Due to the complex nature of markets and their participants, there exist mispricings and regularities in price behaviors than can be studied deeper.

Among these are investor sentiment dynamics, capital flows, the cyclicality and trending of markets and interdependence of asset classes

Financial markets are part stochastic, part deterministic. It's hard to predict the outcome of a single investment, but it's possible to outperform it the long run.

References

A great source of interesting market research is the blogger **Trystero** of bossa.pl, i.e.: https://blogi.bossa.pl/2015/09/14/kilka-procent-zwyciezcow-i-23-przegranych/

JPMorgan report, „The Agony and the Ecstasy — the Risks and Rewards of a Concentrated Stock Position" http://read.jpmorgan.com/i/371035-eotm-special-edition/5

Returns on the FX market: http://www.couriousgnu.com

2/3 of the average analysis: https://waitbutwhy.com/table/can-you-guess-what-other-readers-are-guessing-results

Investment styles of FX participants: https://blogi.bossa.pl/2015/02/20/forexowi-milionerzy-mroczny-zakatek/

Fund flows, cash allocations and COT positioning sizes: http://TheAtlasInvestor.com

FMS cash allocations and macroeconomic analysis: http://fat-pitch.blogspot.com

CAPE Shiller Data via https://www.investing.com/analysis/is-bubble-risk-elevated-for-us-stocks-200175650, also from the book *„Irrational Exuberance"* by prof. Shiller

References

Forward expected S&P500 returns and maximum loss, PensionPartners:
https://pensionpartners.com/is-this-1929-or-1997/

Hartford Funds (passive vs active returns) vis Morningstar data:
https://www.hartfordfunds.com/insights/featured-perspectives/TheCyclicalNatureofActiveandPassiveInvesting.html

A comparison of CAPE and market cap / GDP measures:
https://www.valuewalk.com/2014/09/forecasting-equity-returns-cape-vs-market-cap-to-gdp/

John Hussman's projections:
https://www.hussmanfunds.com; http://www.hussman.net/wmc/wmc160328.htm

…and a critique of the Hussman approach:
http://www.philosophicaleconomics.com/2014/06/critique/

Benjamin Graham, *„The Intelligent Investor"*, a rich source of sound investment rules and observations.

References

Thank you for your attention!

References

Thank you for your attention!

And please remember: none of this is investment advice. Investors invest at their own risk. All works cited are copyrighted to their respective owners and sources.