

The FCO Cockpit – Global Bubble Status Report

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Chair of Entrepreneurial Risk

September 1st, 2017

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What is this?

This monthly report discusses the historical evolution of bubbles in and between different asset classes and geographies.

It is the result of an extensive analysis done on the historical time series of 431 systemic assets and 855 single stocks. The systemic assets are bond, equity and commodity indices and a selection of currency pairs. The single stocks are mainly US and European, equities. The data is from Thomson Reuters.

In the first part of this report, we present the state of the world, based on the analysis of the systemic assets. In the second part, we zoom in on the bubble behavior of single stocks and discuss some specific cases.

^{*} For an intuitive explanation of the methodology and the specifics of the indicators that are used in this report, we refer to: D. Sornette and P. Cauwels, *Financial bubbles: mechanisms and diagnostics*. *Review of Behavioral Economics* 2 (3), 279- 305 (2015) (<http://arxiv.org/abs/1404.2140> and <http://ssrn.com/abstract=2423790>)

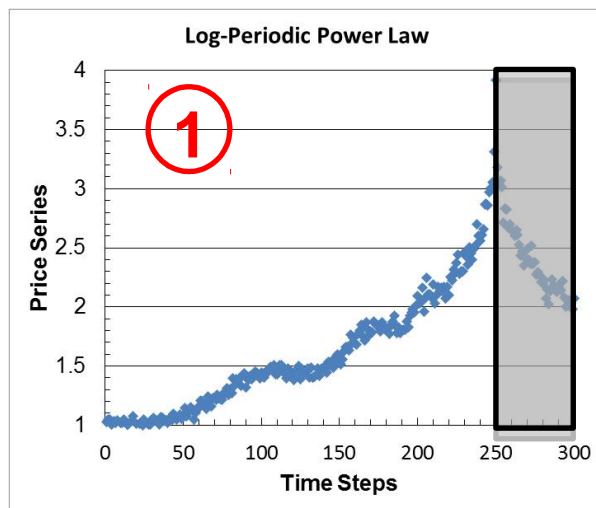
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How does it work?

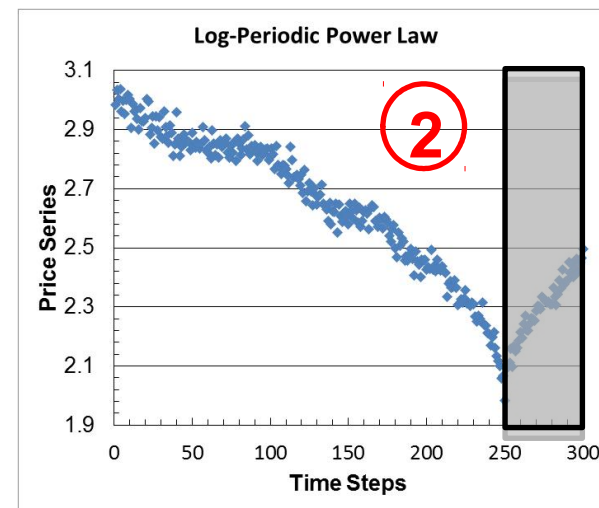
We use the Log-Periodic Power Law Singular (LPPLS) model to hunt for the distinct fingerprint of **Bubbles**:

1. The price rises **faster than exponentially**, so the logarithm of the price rises faster than linearly;
2. There are **accelerating oscillations**, with a distinct characteristic.

A bubble signal is identified if both of our bubble indicators, LPPL-Confidence and LPPL-Trust, are larger than 5%.



A **positive bubble** when
there is imitation in **buying**

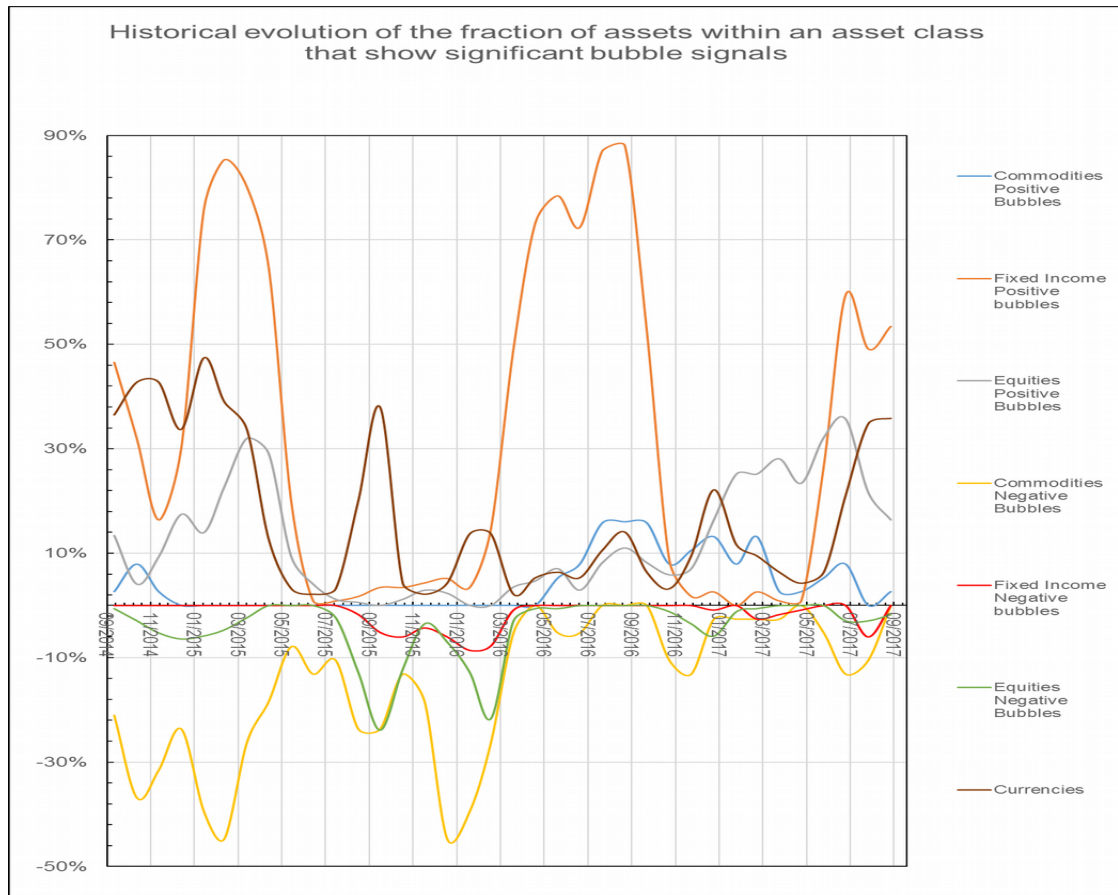


A **negative bubble** when
there is imitation in **selling**

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General Result

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The big picture

One can observe the stabilisation in the growth of positive bubbles in the fixed income asset class, with about 53% qualifying this month.

The fraction of stocks diagnosed in a positive bubble state decreased this month to 16% compared with 22% last month and 36% two months ago.

Only positive bubble signals are observed in one commodity index.

We again observe the continuation of the renewed bubble activity in currency pairs.

A positive bubble signal is an indication of herding when people start buying because prices go up.
A negative bubble signal is an indication of herding when people start selling because prices go down.

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Other interesting highlights from this report

- A consolidation in the bubble signals in currencies for the third month, specifically in Euro and its correlated European crosses, on the back of the improvement in the European macroeconomic and political atmosphere;
- The consolidation in positive bubble signals in the fixed income asset class for the fourth month (specifically in the financial bond indices), while no indices are showing negative bubble signals;
- Only one metal commodity index is showing positive bubble signals with no single index showing negative bubble signals;
- The cooling down in positive bubble signals in equities continued this month. This can be in part attributed to the devastating impact of Hurricane Harvey on Texas and its oil refineries, the political turmoil in the White House, the rise in the geopolitical uncertainty due to North Korea tensions, and the faltering of the strong start to 2017 for European equities due to the rise of the euro which is seen as a danger to the continent's competitiveness. Note that around 81% of the indices that are showing signs of bubbles this month are emerging markets;
- In our analysis of single stocks, we find this month that 17 out of 20 sectors have smaller bubble scores compared to last month. The sector Software & Services has a significant positive bubble with low value score, calling eventually for a contrarian buy position in this sector. The sector Energy we reported in the last two months has a more significant negative bubble score, reflecting that the recent drawdowns of energy prices are still continuing.

A positive bubble signal is an indication of herding when people start buying because prices go up.

A negative bubble signal is an indication of herding when people start selling because prices go down.

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Results per Asset Class

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Government bonds

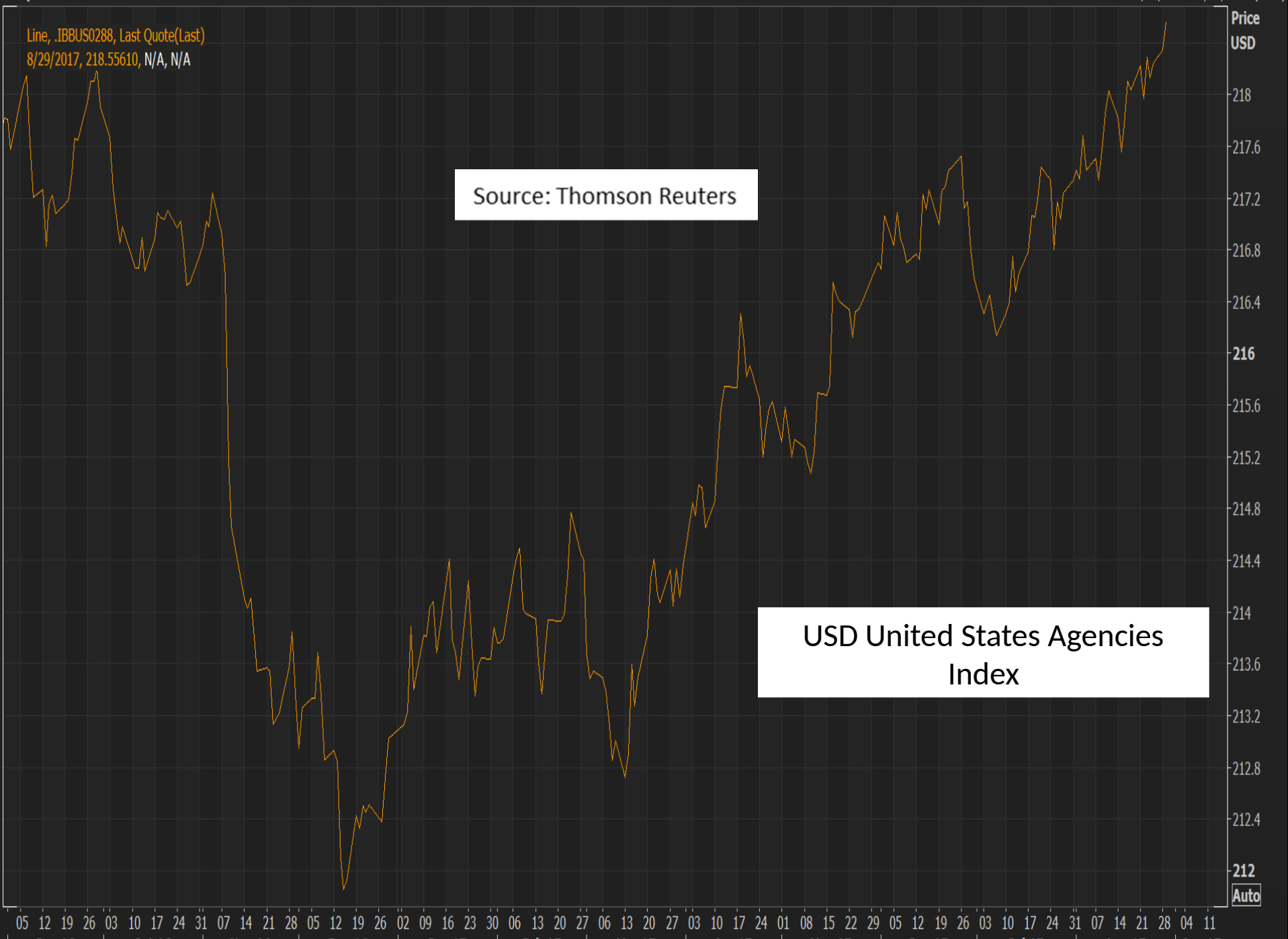
Countries Indices	Yearly Return	DS LPPL Trust	DS LPPL Confidence
Positive Bubbles			
iBoxx USD US Agencies Index	0.2%	12.3%	7.0%
Negative Bubbles			
None			

This month, we see positive bubble signals in only one of the 34 government bond indices that were analyzed, that is 3% of the set. On the other hand, there is no single index showing negative bubble signals. It is worth mentioning that the positive bubble signals in the USD Sovereigns index that were shown over the last three months disappeared.

Line, .IBBUS0288, Last Quote(Last)
8/29/2017, 218.55610, N/A, N/A

Source: Thomson Reuters

USD United States Agencies
Index



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Corporate bonds

Sector Indices	Yearly Return	DS LPPL Trust	DS LPPL Confidence
Positive Bubbles			
iBoxx EUR Insurance Subordinated Index	9.4%	33.7%	28.3%
iBoxx EUR Insurance Index	6.2%	28.3%	29.5%
iBoxx USD Banks Subordinated Index	4.2%	25.5%	18.9%
iBoxx USD Banks Index	2.3%	25.5%	11.7%
iBoxx USD Health Care Equipment & Services Index	1.4%	25.4%	13.4%
Negative Bubbles			
None			

The number of corporate bond indices that are showing positive bubble signals is close to last month level. Of the 82 government bond indices that were analyzed, 61 show positive bubble signals, that is 74% of the set. On the other hand, no single index is showing negative bubble signals. The table above shows the indices with the five strongest positive signals, four of them are financial indices.

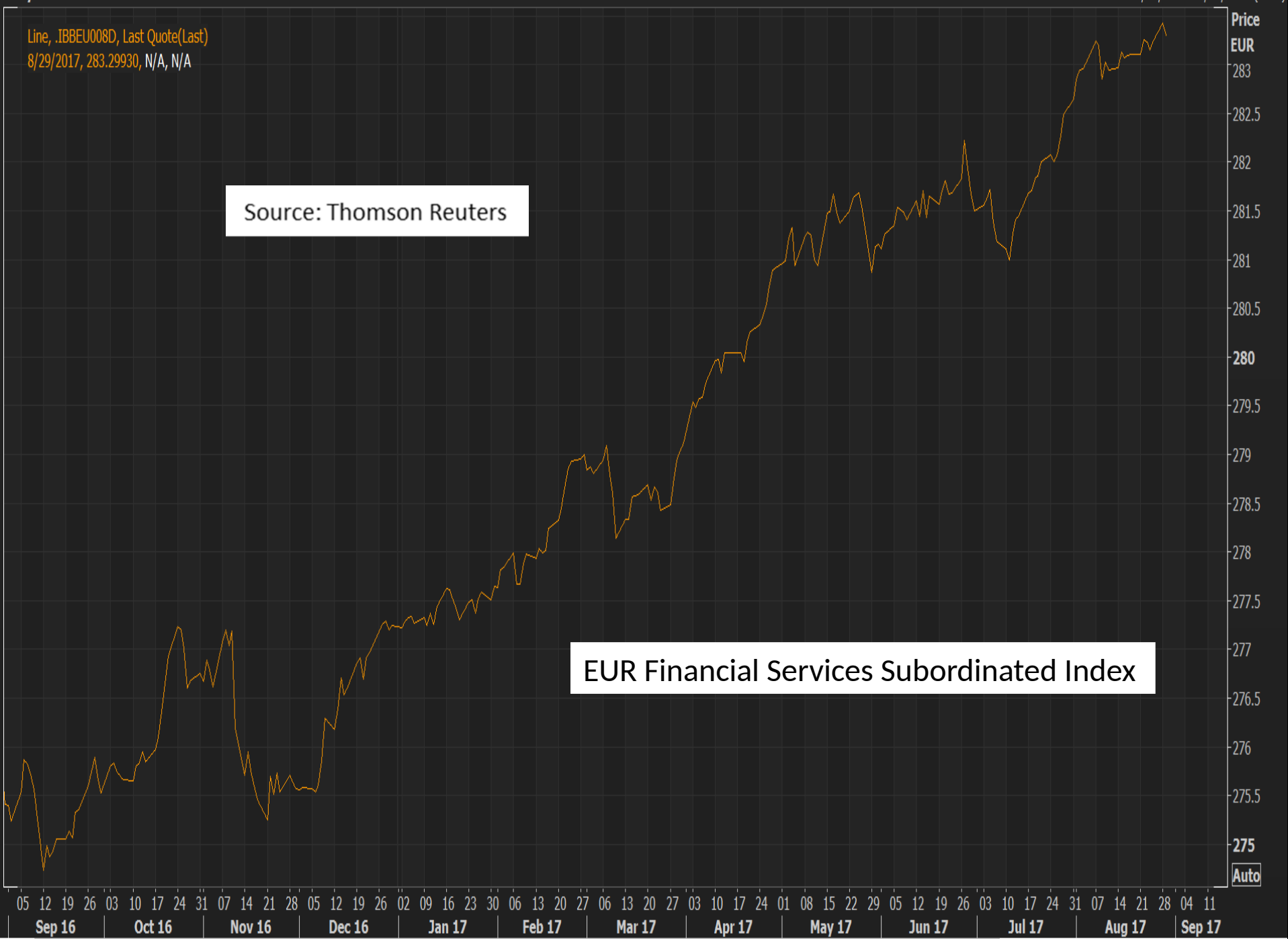
It is worth mentioning that the European financial subordinated index is still showing positive bubble signals for the sixth consecutive month while having the third strongest bubble signal. The figure on the next page shows the fast growing price trajectory is continuing with increased volatility.

Line, .IBBEU008D, Last Quote(Last)

8/29/2017, 283.29930, N/A, N/A

Source: Thomson Reuters

EUR Financial Services Subordinated Index



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Commodities

Commodities Indices	Yearly Return	DS LPPL Trust	DS LPPL Confidence
Positive Bubbles			
Palladium ER Index	33.9%	8.0%	32.5%
Negative Bubbles			
None			

This month, we see only positive bubble signals in one metal index. On the other hand, there are no indices showing negative bubble signals, in contrast with previous months.

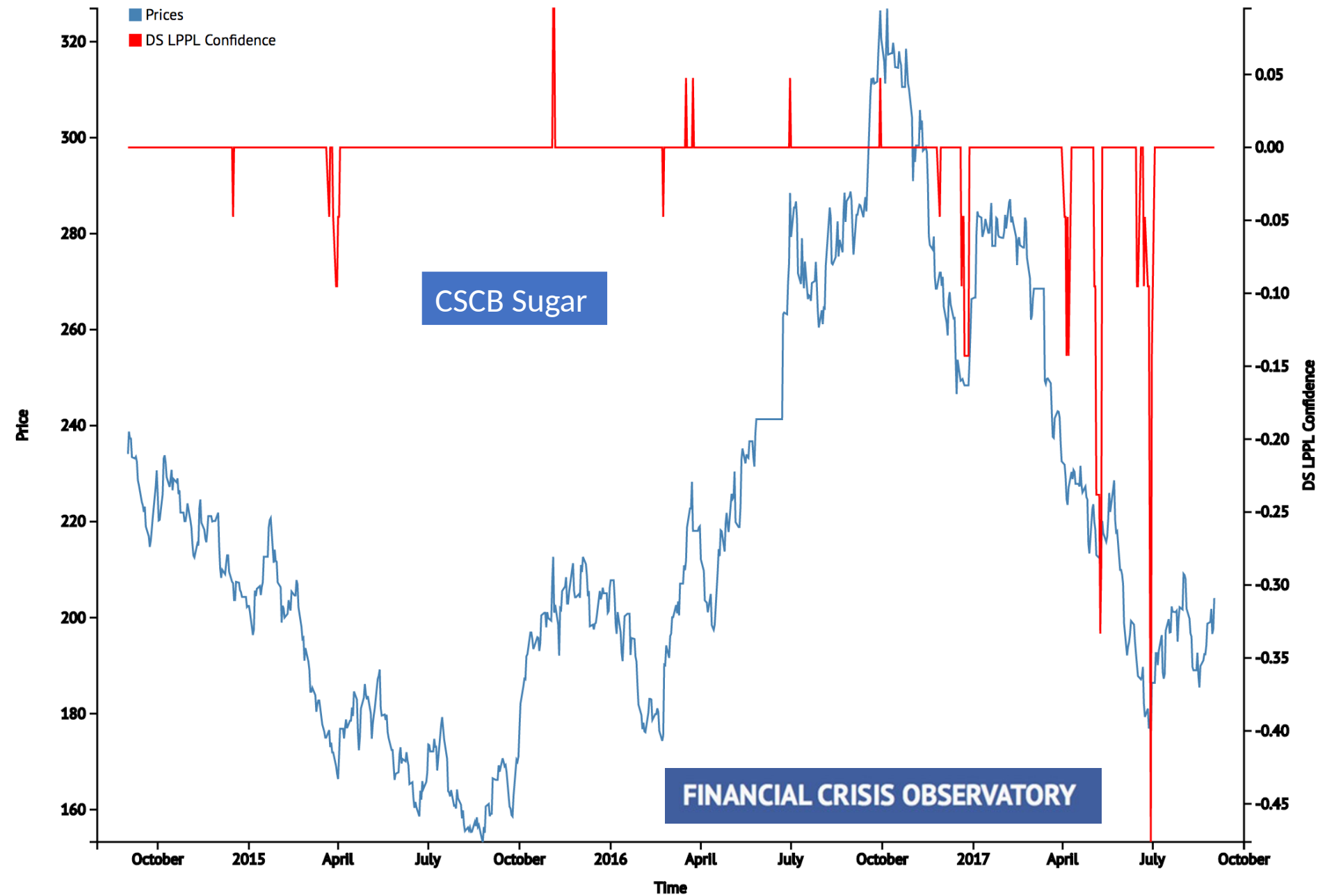
It is worth stressing that, after three months, the Softs and Sugar indices stopped showing negative bubble signals.

Date: 2017-09-01

Name: CSCB 01E Sugar #11 S_j

Indicator: DS LPPL Confidence

Bubble end flag - short time scale

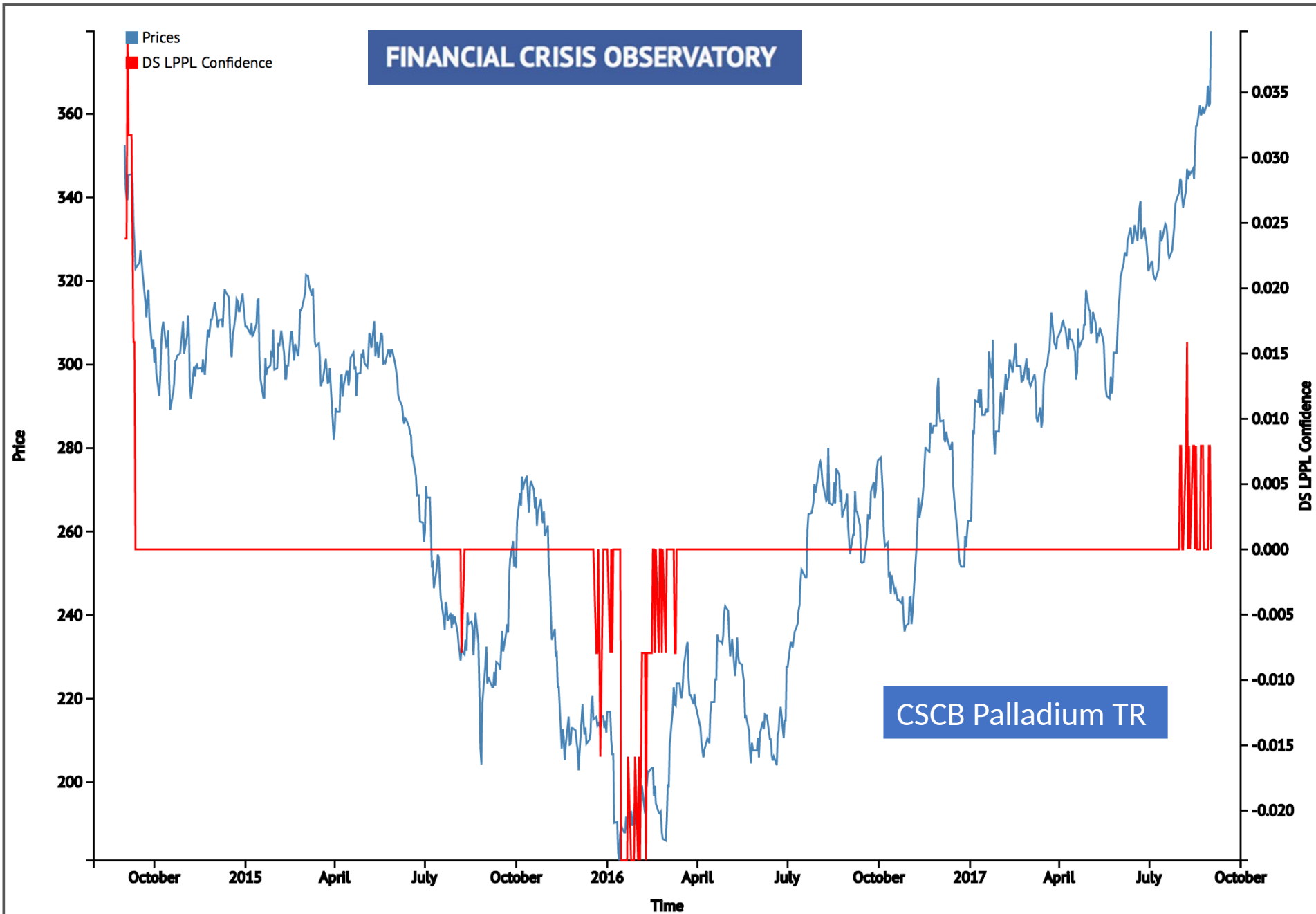


Date: 2017-09-01

Name: CSCB Palladium Curve

Indicator: DS LPPL Confidence

Bubble end flag - long time scale



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Currencies

FX	Yearly Return	DS LPPL Trust	DS LPPL Confidence
US Dollar/Hong Kong Dollar	0.8%	61.7%	64.7%
US Dollar/Czech Koruna	-9.4%	39.0%	37.6%
Czech Koruna/Swiss Franc	7.8%	37.1%	54.8%
Qatar Rial/Euro	-6.8%	30.5%	32.1%
Hong Kong Dollar/Euro	-6.8%	30.4%	50.6%
US Dollar/Danish Krone	-6.2%	27.8%	47.1%
Saudi Arabian Riyal/Euro	-6.1%	27.0%	45.7%
US Dollar/Bulgarian Lev	-6.1%	26.7%	45.3%
US Dollar/Romanian New Leu	-3.1%	26.7%	43.7%
Euro/US Dollar	6.5%	26.3%	45.4%
Argentine Peso/Euro	-18.3%	26.1%	31.1%
Taiwan Dollar/Euro	-0.9%	24.6%	29.7%
Indonesian Rupiah/Euro	-7.1%	24.6%	40.3%
US Dollar/Hungarian Forint	-7.4%	23.6%	38.1%
Korean Won/Euro	-6.0%	21.4%	28.5%
Chinese Renminbi/Euro	-5.8%	20.5%	25.0%
US Dollar/Chinese Renminbi	-0.3%	19.9%	54.5%
US Dollar/Swedish Krona	-6.0%	19.8%	28.0%
US Dollar/Polish Zloty	-7.7%	18.7%	16.0%
Argentine Peso/Swiss Franc	-15.0%	18.3%	23.8%
US Dollar/Singapore Dollar	-0.2%	17.1%	34.8%
US Dollar/Argentine Peso	14.9%	16.5%	18.3%
Danish Krone/Swiss Franc	4.1%	15.0%	33.1%
Euro/Swiss Franc	4.0%	14.3%	37.0%
Singapore Dollar/Euro	-5.8%	13.9%	32.7%
Hungarian Forint/Swiss Franc	5.5%	13.6%	27.3%
Russian Rouble/Euro	3.8%	13.2%	19.2%
US Dollar/Chilean Peso	-5.6%	8.6%	6.2%
UK Pound Sterling/Euro	-7.9%	7.2%	32.8%
Polish Zloty/Swiss Franc	5.9%	7.0%	17.7%
Romanian New Leu/Swiss Franc	0.7%	6.7%	25.2%
Indian Rupee/Euro	-1.5%	6.2%	17.3%
US Dollar/Norwegian Krone	-6.2%	6.1%	16.9%
Japanese Yen/Euro	-12.5%	5.1%	6.7%

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Currencies

The main theme of the currency market this quarter has been a strong rally in the Euro (and its correlated crosses) and the weakness of the Dollar. This trend has accelerated this month after the Jackson Hole annual meeting of central bankers as it didn't carry any hint from the Federal reserve and ECB chiefs that would support the dollar or talk down the euro. It is important to keep monitoring the ECB early-September meeting to see whether its attempt, if any, to talk the Euro lower would be successful.

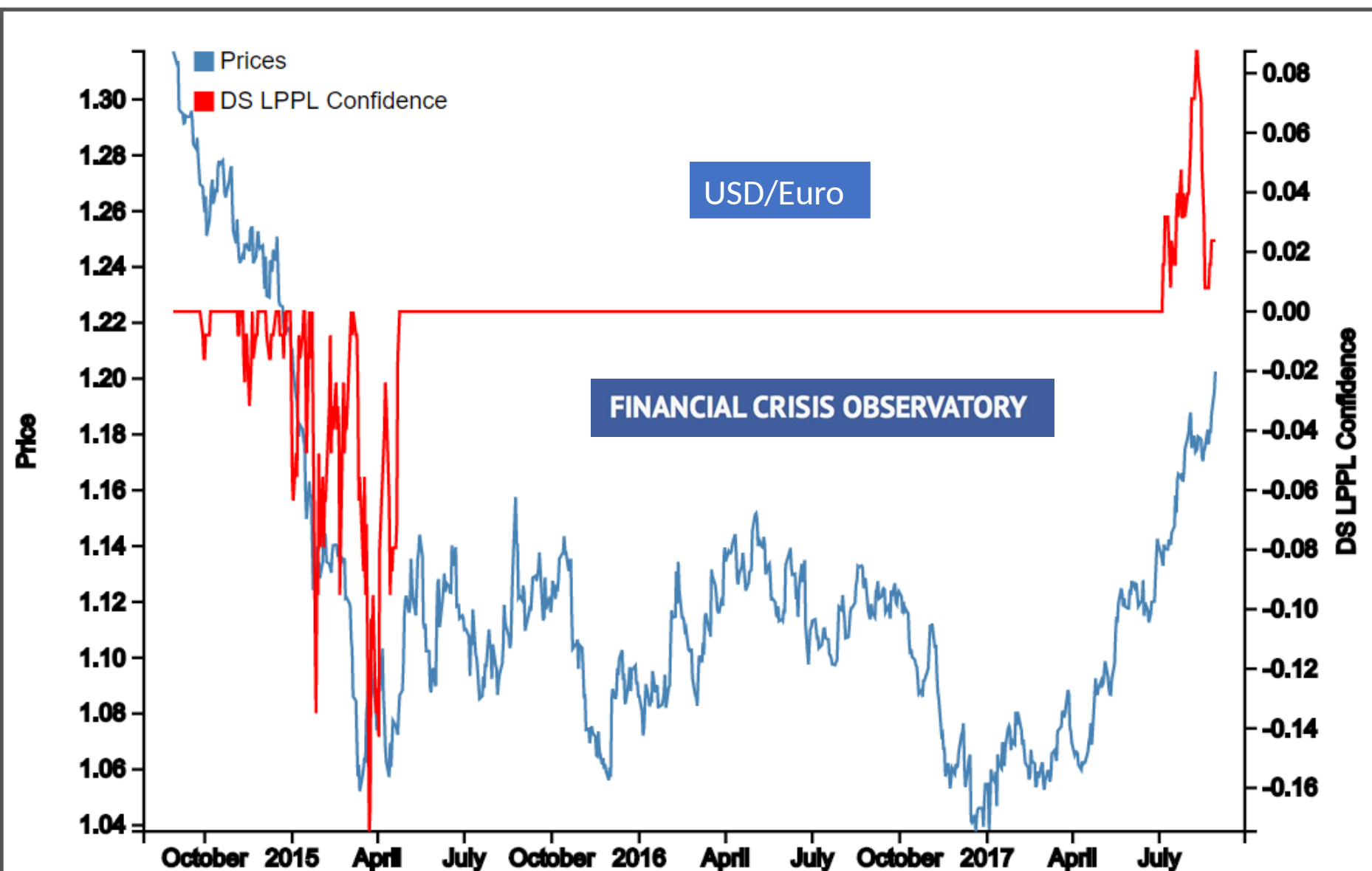
There are signs of a positive bubble in the Polish Zloty, Czech Koruna and Hong Kong Dollar for the fourth consecutive month. Six of the 33 pairs that are showing bubble signals are crossed with these three pairs. On the other hand, the Argentine Peso is showing negative bubble signals for the second consecutive month, which may be related to the political uncertainty rising from the senate elections.

Date: 2017-08-29

Name: US \$ TO EURO (WMR&D\$

Indicator: DS LPPL Confidence ▼

Bubble end flag - long time scale ▼

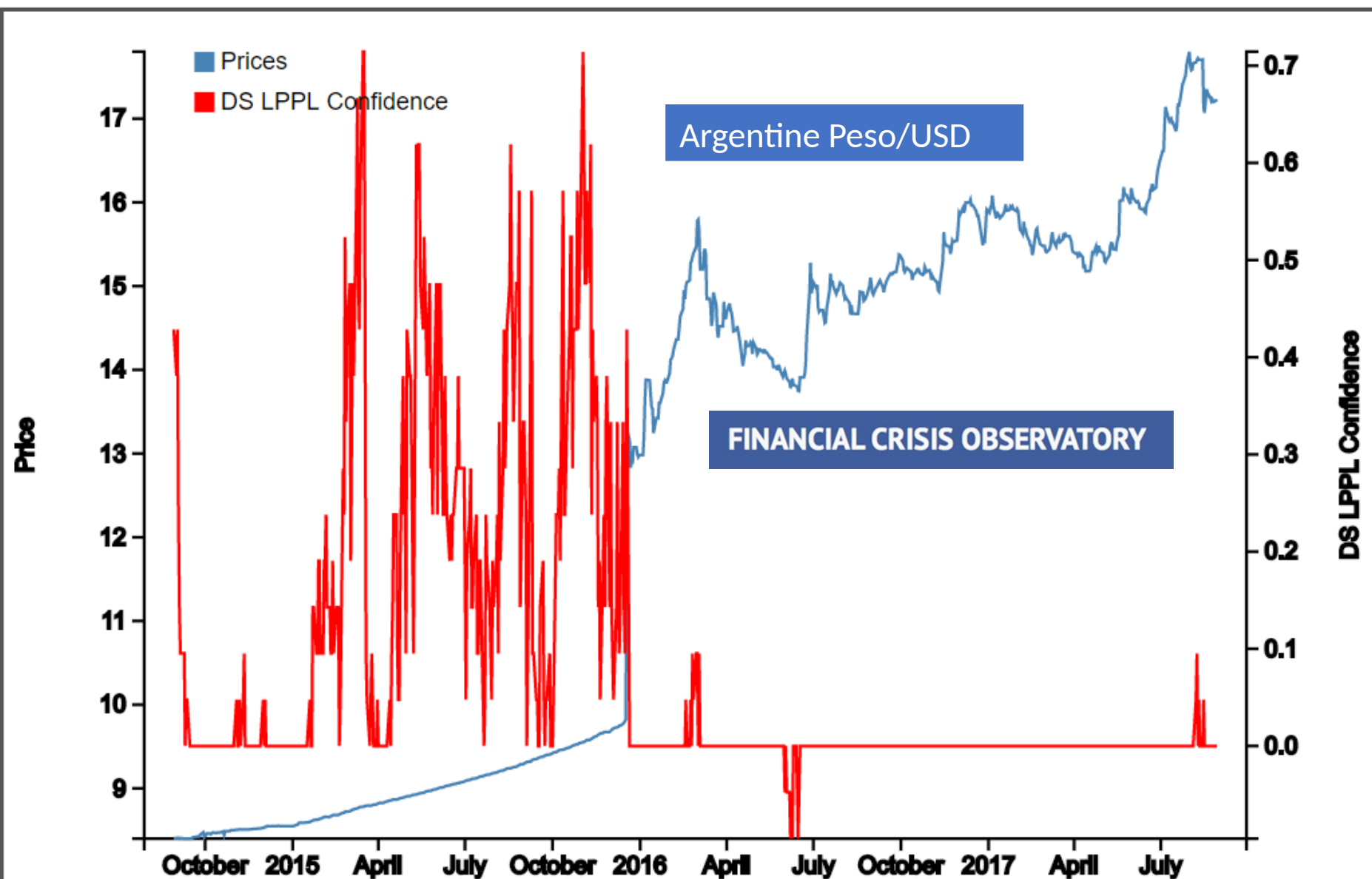


Date: 2017-08-29

Name: ARGENTINE PESO TO US

Indicator: DS LPPL Confidence ▼

Bubble end flag - short time scale ▼

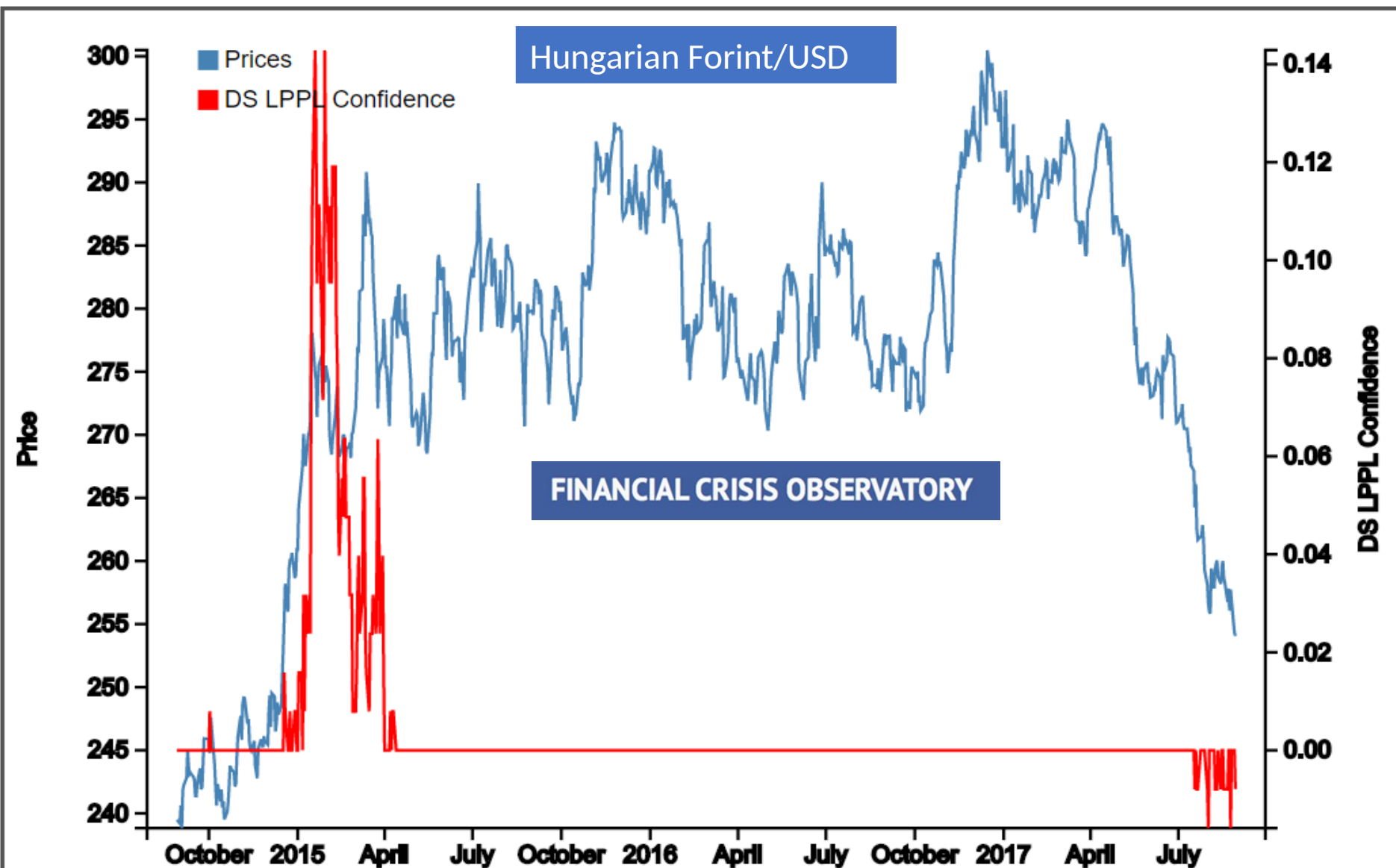


Date: 2017-08-29

Name: HUNGARIAN FORINT TO

Indicator: DS LPPL Confidence ▼

Bubble end flag - long time scale ▼



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Stocks country indices

Equities Countries Indices	Yearly Return	DS LPPL Trust	DS LPPL Confidence	
Positive Bubbles				
OMX Riga_GI	60.2%	53.6%	26.5%	Latvia
OMX Vilnius_GI	21.5%	46.2%	55.8%	Lithuania
BIST 100 Index	42.3%	42.7%	39.1%	Turkey
Bursatl Index	1596.1%	40.8%	14.1%	Venezuela
New Zealand Se Top50 Free Index	6.3%	40.5%	54.6%	New Zealand
Vietnam Index	15.6%	31.9%	18.9%	Vietnam
PFTS Index	29.8%	30.9%	20.8%	Ukraine
Hang Seng Index	21.6%	27.8%	50.1%	Hong Kong
Taiwan SE Weighted Index	15.2%	27.0%	15.3%	Taiwan
OMX Tallinn_GI	28.0%	17.0%	37.0%	Estonia
Shanghai SE 50 Index	21.9%	15.6%	16.3%	China
Dow Jones Industrial Average Index	18.6%	15.6%	36.5%	United States
Dow Jones Composite Index	16.9%	14.6%	15.9%	United States
Budapest SE Index	37.1%	12.7%	13.2%	Hungary
CNX Nifty Index	15.0%	10.9%	12.3%	India
FTSE China 25 Index	19.8%	9.3%	38.0%	China
IPC Index	8.5%	8.6%	12.6%	Mexico
SZSE 100 Index	11.4%	6.8%	19.2%	China
S&P BSE Sensex Index	13.7%	6.5%	6.4%	India
FTSE Straits Times Index	14.1%	5.0%	12.6%	Singapore
Negative Bubbles				
Muscat SE General Index	-14.5%	37.5%	34.2%	Oman

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Stocks country indices

The number of indices that are showing positive bubbles declined significantly again this month. This may be related to the devastating impact of Hurricane Harvey on Texas and its oil refineries, political turmoil in the White House, the rise in the geopolitical uncertainty due to the tensions with North Korea, and the faltering of the strong start of 2017 for European equities due to the rise of the euro which is seen crimping the continent's competitiveness. In addition, Oman stock market index is still showing negative bubble signals for the third consecutive month.

It is worth mentioning that around 81% of the indices that are showing signs of bubbles are emerging markets. This is propelled by the Dollar weakness and the signs of resilience in the emerging markets and their currencies.

Date: 2017-08-29

Name: OMX RIGA (OMXR)

Indicator: DS LPPL Confidence ▼

Bubble end flag - long time scale ▼



Date: 2017-08-29

Name: TAIWAN SE WEIGHED TA

Indicator: DS LPPL Confidence ▼

Bubble end flag - long time scale ▼



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Single Stocks

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What is this?

For 855 stocks, we calculate the bubble warning indicators as well as two financial strength indicators, which indicate the fundamental value of the stock and the growth capability respectively.

The stocks are the constituents of the Stoxx Europe 600, the S&P 500 and the Nasdaq 100 indices. From these, all doubles and stocks with incomplete data are removed. Because our financial strength indicators are specifically designed for corporates, all financial institutions are taken out of the set as well.

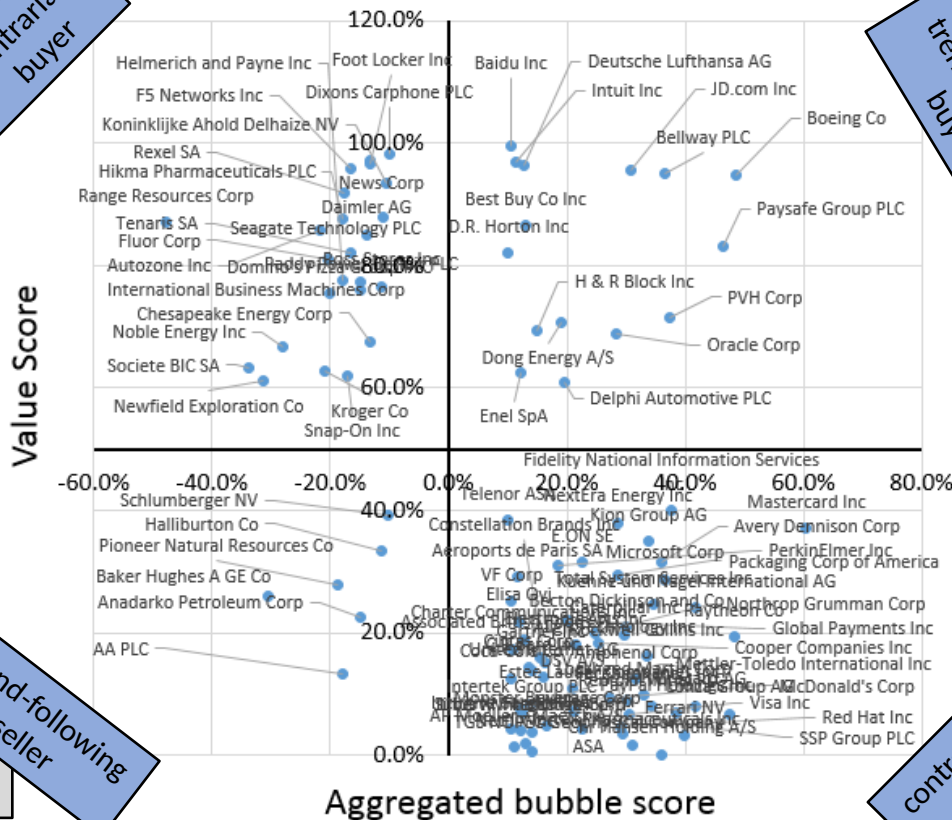
The two financial strength indicators are:

- A value score that is based on the ROIC (Return on Invested Capital) taking into account the EV (Enterprise Value) to normalize for high/low market valuations and/or high/low debt;
- A growth score that has characteristics similar to the PEG ratio, which is the Price to Earnings ratio normalized for expected EPS-growth (Earnings per Share).

Both scores give a value between zero and one, one being the best of the set and zero the worst, so the higher the score, the higher the financial strength.

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The four quadrants: value versus bubble score



By plotting the value score against the aggregated bubble score, we can divide the stocks into four quadrants*:

1. [Quadrant 1](#): Stocks with a strong positive bubble score and a strong value score (e.g. Baidu Inc);
2. [Quadrant 2](#): Stocks with a strong positive bubble score and a weak value score (e.g. Red Hat Inc);
3. [Quadrant 3](#): Stocks with a strong negative bubble score and a weak value score (e.g. AA PLC);
4. [Quadrant 4](#): Stocks with strong negative bubble score and a strong financial strength (e.g. Rexel SA)

*A strong positive bubble signal is identified if bubble score is larger than 10%, and a strong negative bubble signal is identified if bubble score is smaller than -10%.
A strong value score is identified if value score is larger than 60%, and a weak value score is identified if value score is smaller than 40%.

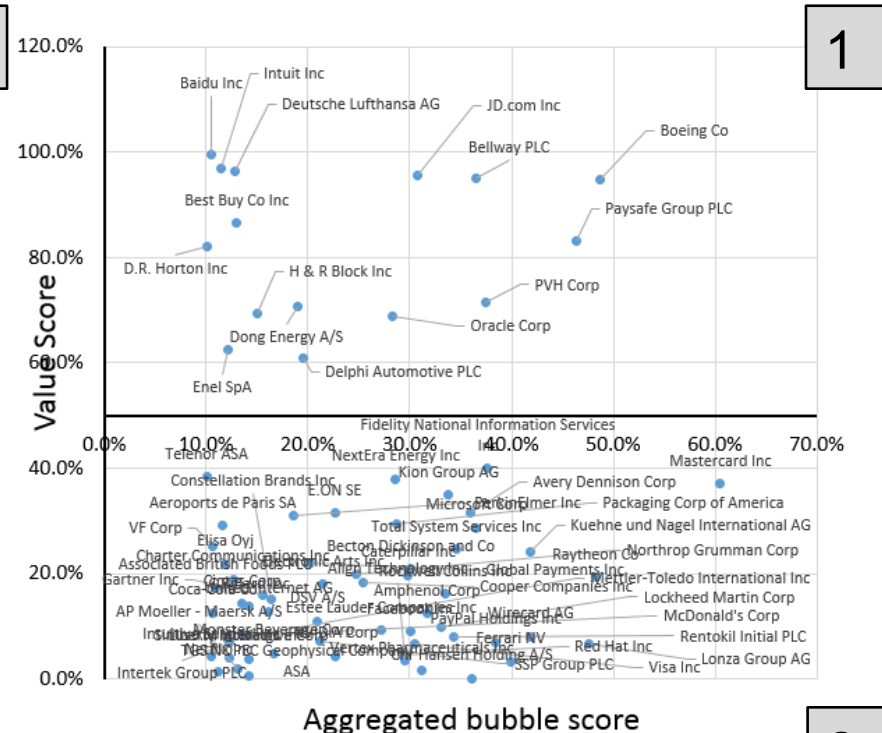
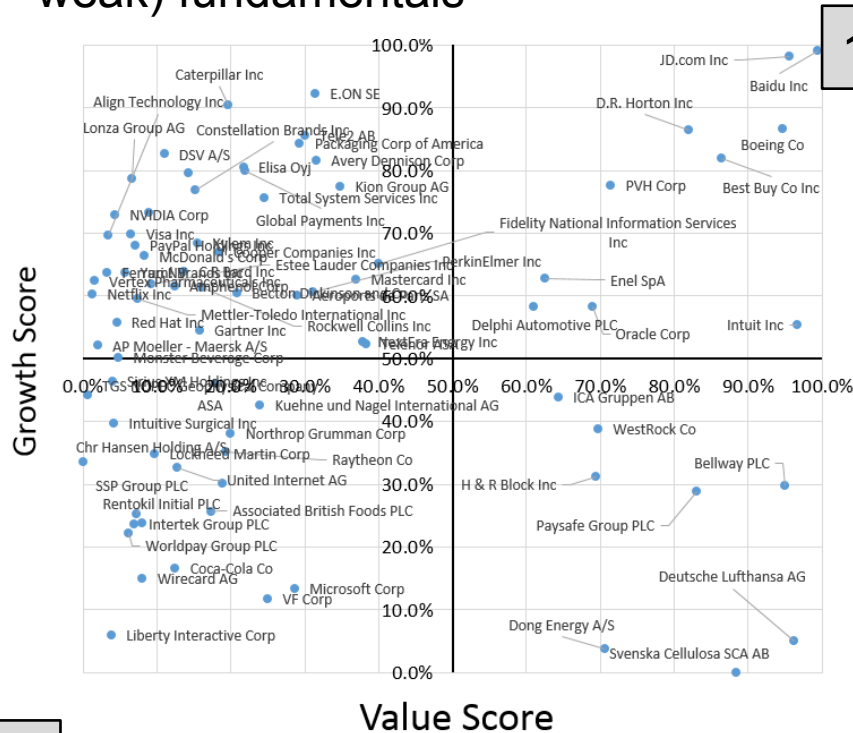
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Each quadrant has its own specs:

1. [Quadrant 1](#): Stocks with a strong value score are cheap relative to their earnings potential. The strong positive bubble signal should be interpreted as a momentum indicator possibly the consequence of a repricing based on the fundamentals. **As an investor, one could be a trend-following buyer.**
2. [Quadrant 2](#): Stocks with a weak value score are expensive relative to their earnings potential. The strong positive bubble signal is an indication of sentiment and herding increasing the price until it is not linked to fundamentals anymore. **As an investor, one could be a contrarian seller.**
3. [Quadrant 3](#): These stocks are expensive relative to their earnings potential. On top of that, there are clear negative bubble signals. Such stocks should be considered as falling knives. **As an investor, one could be a trend-following seller.**
4. [Quadrant 4](#): These stocks are cheap relative to their financial performance. The strong negative bubble signal is an indication of sentiment and herding. These stocks can be considered as over-sold. **As an investor, one could be a contrarian buyer.**

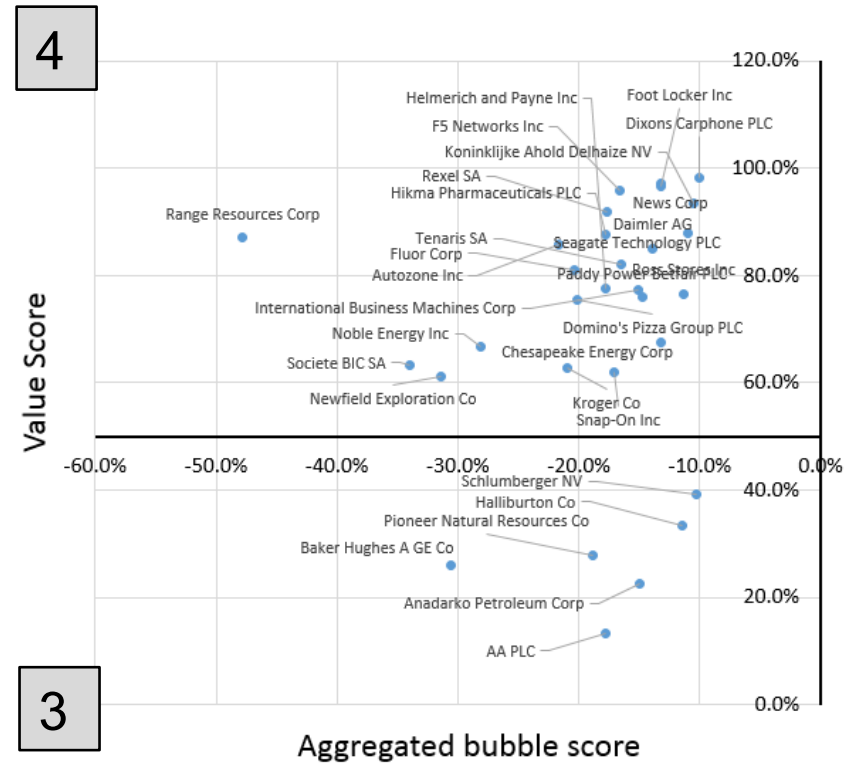
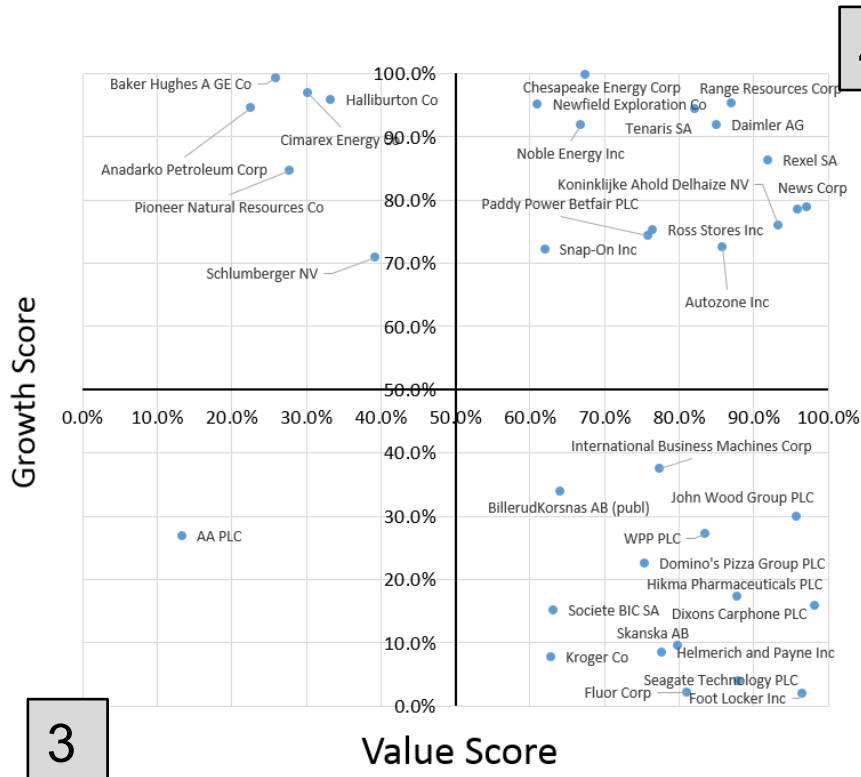
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Quadrant 1 and 2 stocks: strong positive bubble signals with strong (respectively weak) fundamentals



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Quadrant 3 and 4 stocks: strong negative bubble signals with weak respectively strong fundamentals



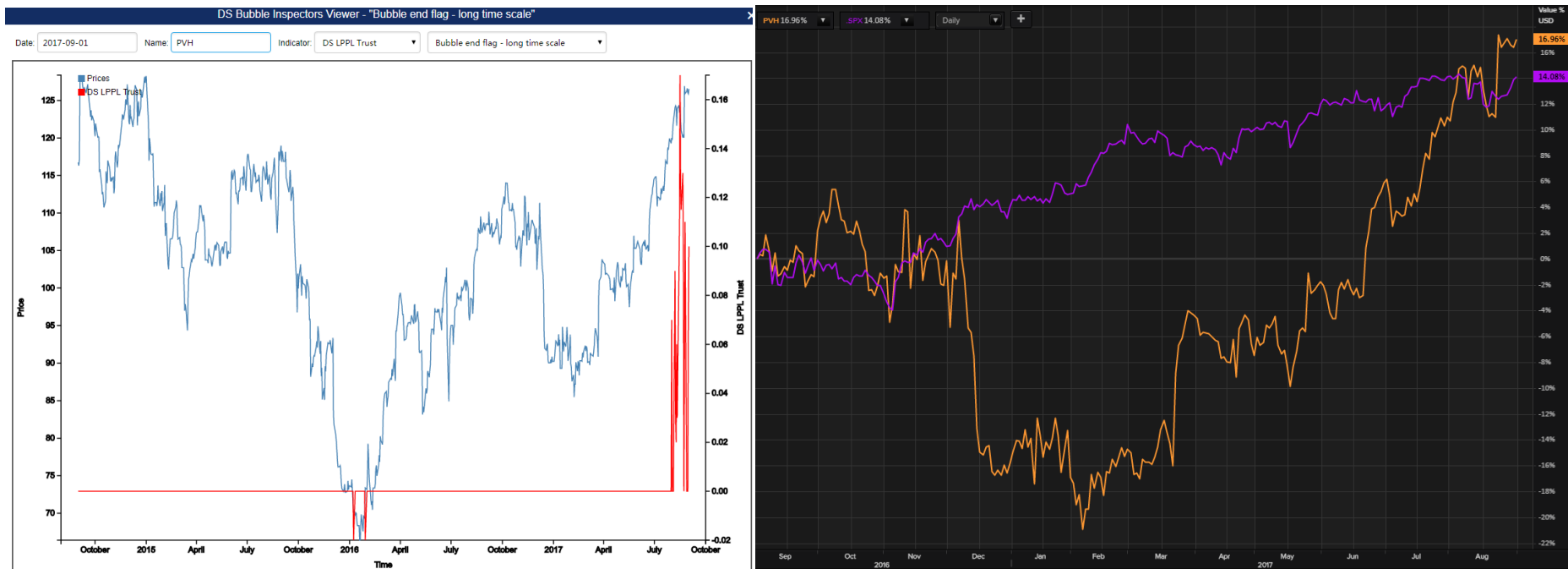
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Quadrant 1 stocks: strong positive bubble signals with strong fundamentals

Company Name	Country of Headquarters	GICS Sector Name	GICS Industry Group Name	Yearly Return	Bubble Score	Value Score	Growth Score
Baidu Inc	China	Information Technology	Software & Services	33.3%	10.5%	99.4%	99.1%
Intuit Inc	United States of America	Information Technology	Software & Services	26.9%	11.5%	96.7%	55.4%
JD.com Inc	China	Consumer Discretionary	Retailing	64.9%	30.8%	95.6%	98.2%
Bellway PLC	United Kingdom	Consumer Discretionary	Consumer Durables & Apparel	37.5%	36.4%	95.0%	29.7%
Deutsche Lufthansa AG	Germany	Industrials	Transportation	101.7%	12.8%	96.3%	5.0%
Dong Energy A/S	Denmark	Utilities	Utilities	22.9%	19.0%	70.6%	3.7%
Enel SpA	Italy	Utilities	Utilities	28.5%	12.1%	62.6%	62.8%
Paysafe Group PLC	Isle of Man	Information Technology	Software & Services	34.2%	46.3%	83.0%	28.9%
Boeing Co	United States of America	Industrials	Capital Goods	85.1%	48.7%	94.7%	86.5%
Best Buy Co Inc	United States of America	Consumer Discretionary	Retailing	41.0%	13.0%	86.4%	81.9%
D.R. Horton Inc	United States of America	Consumer Discretionary	Consumer Durables & Apparel	12.8%	10.1%	82.0%	86.4%
Delphi Automotive PLC	United Kingdom	Consumer Discretionary	Automobiles & Components	36.4%	19.5%	60.9%	58.2%
H & R Block Inc	United States of America	Consumer Discretionary	Consumer Services	23.5%	15.0%	69.4%	31.1%
Oracle Corp	United States of America	Information Technology	Software & Services	22.1%	28.2%	68.9%	58.4%
PVH Corp	United States of America	Consumer Discretionary	Consumer Durables & Apparel	16.8%	37.4%	71.5%	77.5%
WestRock Co	United States of America	Materials	Materials	18.8%	10.9%	69.7%	38.7%
ICA Gruppen AB	Sweden	Consumer Staples	Food & Staples Retailing	8.2%	19.7%	64.3%	43.9%
Svenska Cellulosa SCA AB	Sweden	Materials	Materials	41.9%	32.1%	88.4%	0.0%

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Quadrant 1 stocks: strong positive bubble signals with strong fundamentals, example PVH Corp.



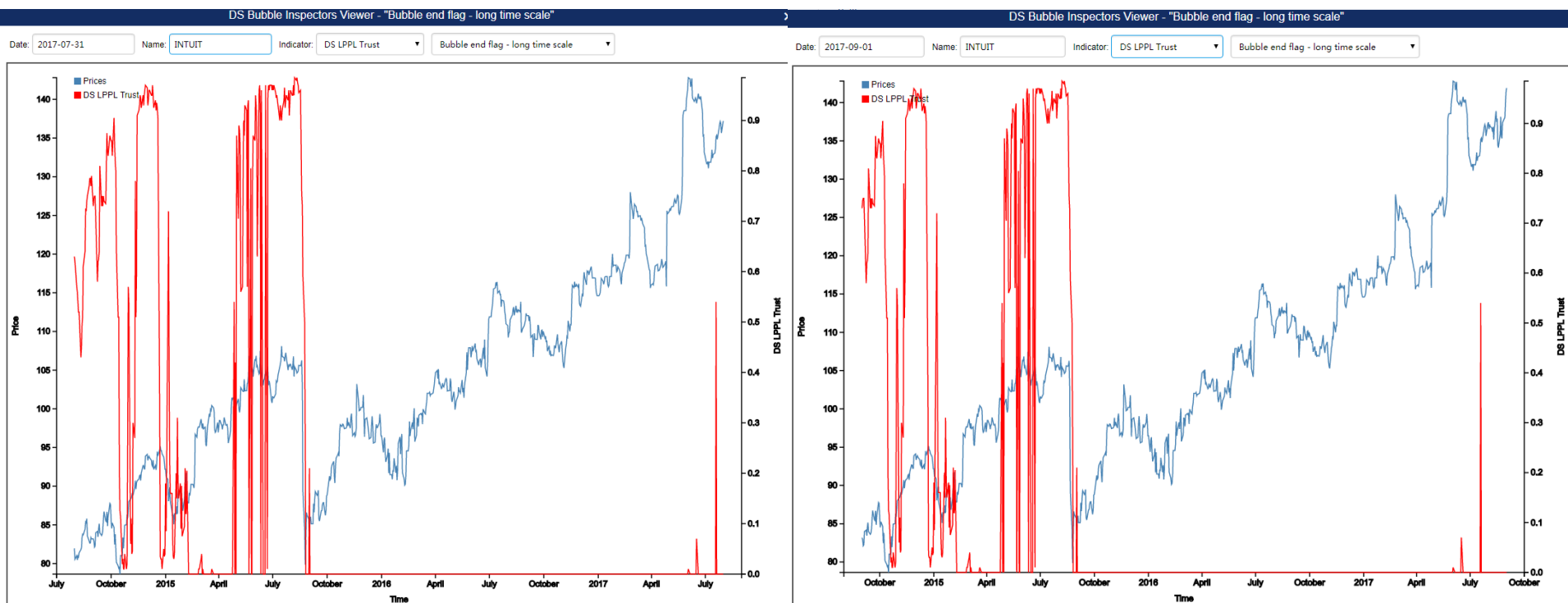
The left graph is a standard output from the Financial Crisis Observatory. It shows the historical price evolution of the stock in blue (left hand scale) and the calculated bubble warning index DS LPPL Trust in red (right hand scale). We can see a clearly spiking warning, indicating the convergence towards the end of a bubble-like regime. The right graph shows the outperformance of the stock over the last year (orange) with respect to the S&P 500 benchmark (purple), which is almost 3%.

Last month example: strong positive bubble signals with strong fundamentals, Intuit Inc.

Note that the stock went up again after a few days oscillations, in synchrony with the strong fundamentals, notwithstanding our DS LPPL trust indicator. One should remain cautious as this stock is still identified with strong bubble signal this month.

Last month signal (1st Aug. 2017)

This month signal (1st Sep. 2017)



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Quadrant 2 stocks: strong positive bubble signals with weak fundamentals

This month we again observe an abnormally large number of stocks in this Quadrant, although the number of stocks in this Quadrant has declined a bit.

This suggests that the fundamentals are still dominantly weak while there is a general positive investment sentiment, possibly in denial of the weakness of the existing recovery.

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Quadrant 2 stocks: strong positive bubble signals with weak fundamentals

Company Name	Country of Headquarters	GICS Sector Name	GICS Industry Group Name	Yearly Return	Bubble Score	Value Score	Growth Score
Align Technology Inc	United States of America	Health Care	Health Care Equipment & Services	90.2%	29.6%	3.4%	69.6%
Charter Communications Inc	United States of America	Consumer Discretionary	Media	54.9%	12.6%	18.8%	30.1%
Cintas Corp	United States of America	Industrials	Commercial & Professional Services	14.9%	13.5%	14.3%	79.6%
Electronic Arts Inc	United States of America	Information Technology	Software & Services	49.6%	21.5%	17.9%	46.0%
Facebook Inc	United States of America	Information Technology	Software & Services	36.4%	30.1%	8.9%	73.2%
Intuitive Surgical Inc	United States of America	Health Care	Health Care Equipment & Services	46.4%	10.5%	4.2%	39.6%
Liberty Interactive Corp	United States of America	Consumer Discretionary	Retailing	59.7%	14.1%	3.9%	5.8%
Monster Beverage Corp	United States of America	Consumer Staples	Food, Beverage & Tobacco	8.8%	16.6%	4.8%	50.2%
Microsoft Corp	United States of America	Information Technology	Software & Services	30.1%	36.6%	28.7%	13.3%
Netflix Inc	United States of America	Consumer Discretionary	Retailing	79.3%	11.2%	1.3%	60.2%
NVIDIA Corp	United States of America	Information Technology	Semiconductors & Semiconductor Equipment	176.2%	22.7%	4.3%	72.9%
PayPal Holdings Inc	United States of America	Information Technology	Software & Services	66.0%	38.5%	7.0%	68.1%
Sirius XM Holdings Inc	United States of America	Consumer Discretionary	Media	38.9%	12.2%	4.0%	46.3%
Vertex Pharmaceuticals Inc	United States of America	Health Care	Pharmaceuticals, Biotechnology & Life Sciences	69.9%	31.2%	1.5%	62.3%
Associated British Foods PLC	United Kingdom	Consumer Staples	Food, Beverage & Tobacco	9.2%	10.9%	17.3%	25.5%
E.ON SE	Germany	Utilities	Utilities	31.1%	22.6%	31.5%	92.3%
Kion Group AG	Germany	Industrials	Capital Goods	50.0%	33.8%	34.9%	77.4%
United Internet AG	Germany	Information Technology	Software & Services	35.2%	16.1%	12.7%	32.6%
Wirecard AG	Germany	Information Technology	Software & Services	61.4%	41.9%	8.1%	15.0%
Chr Hansen Holding A/S	Denmark	Materials	Materials	32.8%	36.1%	0.1%	33.5%
AP Moeller - Maersk A/S	Denmark	Industrials	Transportation	29.1%	13.1%	2.0%	52.0%

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Quadrant 2 stocks: strong positive bubble signals with weak fundamentals (cont'd)

Company Name	Country of Headquarters	GICS Sector Name	GICS Industry Group Name	Yearly Return	Bubble Score	Value Score	Growth Score
DSV A/S	Denmark	Industrials	Transportation	33.9%	20.9%	11.0%	82.6%
Aéroports de Paris SA	France	Industrials	Transportation	62.0%	11.6%	29.0%	60.1%
Ferrari NV	Italy	Consumer Discretionary	Automobiles & Components	122.5%	39.9%	3.3%	63.7%
Intertek Group PLC	United Kingdom	Industrials	Commercial & Professional Services	46.4%	12.3%	6.9%	23.6%
Elisa Oyj	Finland	Telecommunication Services	Telecommunication Services	16.4%	11.9%	21.8%	80.5%
Telenor ASA	Norway	Telecommunication Services	Telecommunication Services	8.0%	10.0%	38.4%	52.3%
TGS NOPEC Geophysical Company ASA	Norway	Energy	Energy	14.6%	14.1%	0.6%	44.2%
Rentokil Initial PLC	United Kingdom	Industrials	Commercial & Professional Services	42.4%	34.3%	8.0%	23.7%
Kuehne und Nagel International AG	Switzerland	Industrials	Transportation	26.5%	41.9%	24.0%	42.6%
Lonza Group AG	Switzerland	Health Care	Pharmaceuticals, Biotechnology & Life Sciences	40.6%	47.6%	6.7%	78.6%
SSP Group PLC	United Kingdom	Consumer Discretionary	Consumer Services	69.7%	21.2%	7.3%	25.3%
Amphenol Corp	United States of America	Information Technology	Technology Hardware & Equipment	29.9%	31.7%	12.4%	61.5%
Avery Dennison Corp	United States of America	Materials	Materials	21.7%	36.0%	31.6%	81.5%
C R Bard Inc	United States of America	Health Care	Health Care Equipment & Services	45.3%	14.2%	13.7%	63.9%
Becton Dickinson and Co	United States of America	Health Care	Health Care Equipment & Services	12.5%	30.1%	20.8%	60.5%
Caterpillar Inc	United States of America	Industrials	Capital Goods	43.4%	29.8%	19.6%	90.4%
Rockwell Collins Inc	United States of America	Industrials	Capital Goods	56.6%	33.5%	16.1%	61.3%
Cooper Companies Inc	United States of America	Health Care	Health Care Equipment & Services	34.9%	25.4%	18.4%	67.0%
Estee Lauder Companies Inc	United States of America	Consumer Staples	Household & Personal Products	19.9%	27.2%	9.2%	61.9%
Fidelity National Information Services Inc	United States of America	Information Technology	Software & Services	17.1%	37.7%	40.0%	65.1%
Global Payments Inc	United States of America	Information Technology	Software & Services	25.7%	20.2%	21.9%	80.0%

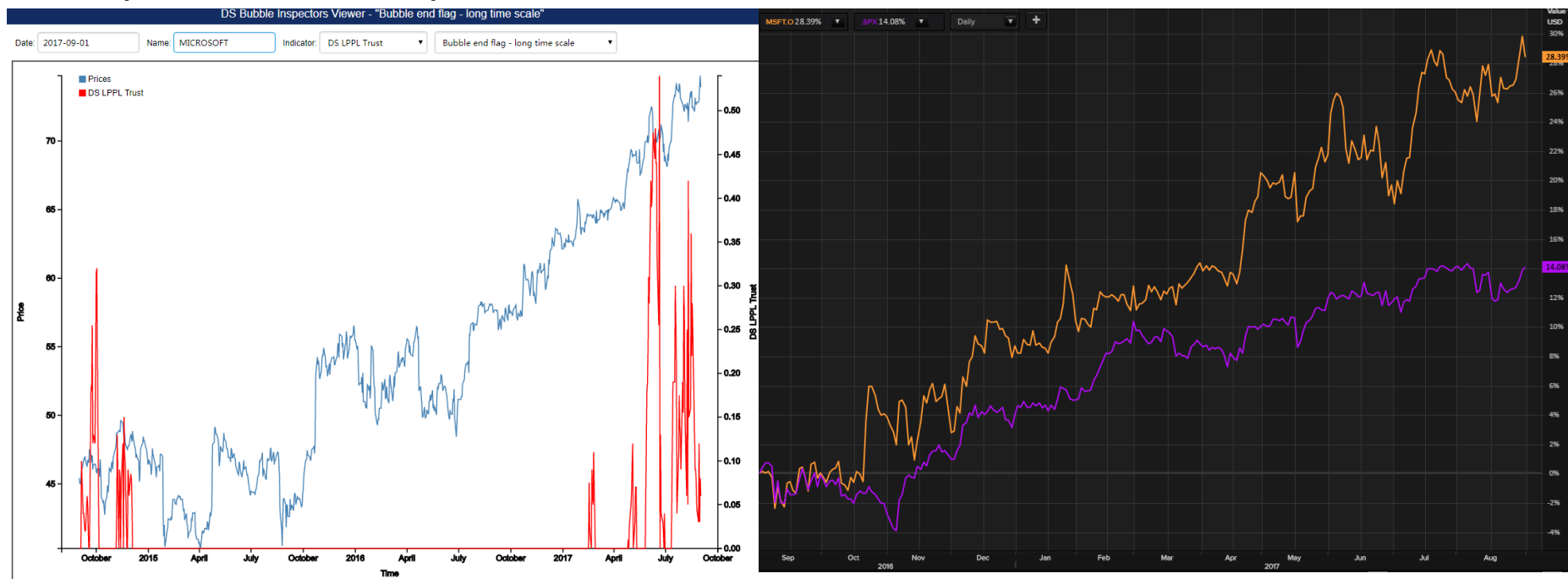
The FCO Cockpit – Global Bubble Status September 1st, 2017

Quadrant 2 stocks: strong positive bubble signals with weak fundamentals (cont'd)

Company Name	Country of Headquarters	GICS Sector Name	GICS Industry Group Name	Yearly Return	Bubble Score	Value Score	Growth Score
Gartner Inc	United States of America	Information Technology	Software & Services	32.5%	15.6%	15.8%	54.5%
Coca-Cola Co	United States of America	Consumer Staples	Food, Beverage & Tobacco	4.9%	10.7%	12.5%	16.5%
Lockheed Martin Corp	United States of America	Industrials	Capital Goods	25.7%	33.0%	9.7%	34.9%
Mastercard Inc	United States of America	Information Technology	Software & Services	37.9%	60.5%	37.0%	62.6%
McDonald's Corp	United States of America	Consumer Discretionary	Consumer Services	38.3%	13.7%	8.3%	66.3%
Mettler-Toledo International Inc	United States of America	Health Care	Pharmaceuticals, Biotechnology & Life Sciences	50.1%	12.2%	7.4%	59.5%
NextEra Energy Inc	United States of America	Utilities	Utilities	24.5%	28.6%	37.9%	52.7%
Northrop Grumman Corp	United States of America	Industrials	Capital Goods	28.4%	24.7%	20.0%	38.1%
Packaging Corp of America	United States of America	Materials	Materials	43.0%	28.6%	29.4%	84.3%
PerkinElmer Inc	United States of America	Health Care	Pharmaceuticals, Biotechnology & Life Sciences	25.8%	18.6%	31.1%	60.6%
Red Hat Inc	United States of America	Information Technology	Software & Services	47.3%	29.2%	4.6%	55.7%
Raytheon Co	United States of America	Industrials	Capital Goods	29.9%	48.3%	19.3%	35.2%
Constellation Brands Inc	United States of America	Consumer Staples	Food, Beverage & Tobacco	22.0%	16.4%	15.2%	76.8%
Total System Services Inc	United States of America	Information Technology	Software & Services	40.3%	34.6%	24.6%	75.6%
Visa Inc	United States of America	Information Technology	Software & Services	28.0%	30.4%	6.5%	69.8%
VF Corp	United States of America	Consumer Discretionary	Consumer Durables & Apparel	1.3%	10.7%	25.0%	11.7%
Xylem Inc	United States of America	Industrials	Capital Goods	22.0%	32.8%	15.6%	68.4%
Yum! Brands Inc	United States of America	Consumer Discretionary	Consumer Services	17.8%	18.3%	5.7%	63.6%
Tele2 AB	Sweden	Telecommunication Services	Telecommunication Services	34.7%	10.3%	30.1%	85.6%
Worldpay Group PLC	United Kingdom	Information Technology	Software & Services	39.6%	25.0%	6.2%	22.1%

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Quadrant 2 stocks: strong positive bubble signals with weak fundamentals, example Microsoft Corp.



The left graph is a standard output from the Financial Crisis Observatory. It shows the historical price evolution of the stock in blue (left hand scale) and the calculated bubble warning index DS LPPL Trust in red (right hand scale). We can see a clearly spiking warning. The right graph shows the outperformance of the stock over the last year (orange) with respect to the S&P500 benchmark (purple), it is almost 14% up. The strong positive bubble signals and weak fundamentals indicate a high probability of correction in the future.

Last month example: strong positive bubble signals with weak fundamentals, Autodesk Inc.

Note that the stock went down and then up again, closing almost at the same value at the end of August. This volatility, together with our DS LPPL trust indicator and weak fundamentals, suggests continuing to get out of a long position on this stock.

Last month signal (1st Aug. 2017)

This month signal (1st Sep. 2017)



The FCO Cockpit – Global Bubble Status September 1st, 2017

Quadrant 3 stocks: strong negative bubble signals with weak fundamentals

Company Name	Country of Headquarters	GICS Sector Name	GICS Industry Group Name	Yearly Return	Bubble Score	Value Score	Growth Score
AA PLC	United Kingdom	Consumer Discretionary	Consumer Services	-40.8%	-17.8%	13.3%	26.8%
Anadarko Petroleum Corp	United States of America	Energy	Energy	-23.5%	-15.0%	22.6%	94.5%
Baker Hughes A GE Co	United States of America	Energy	Energy	-0.9%	-30.6%	25.8%	99.2%
Halliburton Co	United States of America	Energy	Energy	-9.4%	-11.4%	33.3%	95.9%
Pioneer Natural Resources Co	United States of America	Energy	Energy	-27.6%	-18.9%	27.7%	84.7%
Schlumberger NV	United States of America	Energy	Energy	-19.6%	-10.3%	39.3%	70.9%
Cimarex Energy Co	United States of America	Energy	Energy	-24.6%	-24.4%	30.2%	97.0%

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Quadrant 3 stocks: strong negative bubble signals with weak fundamentals, example Halliburton Co.



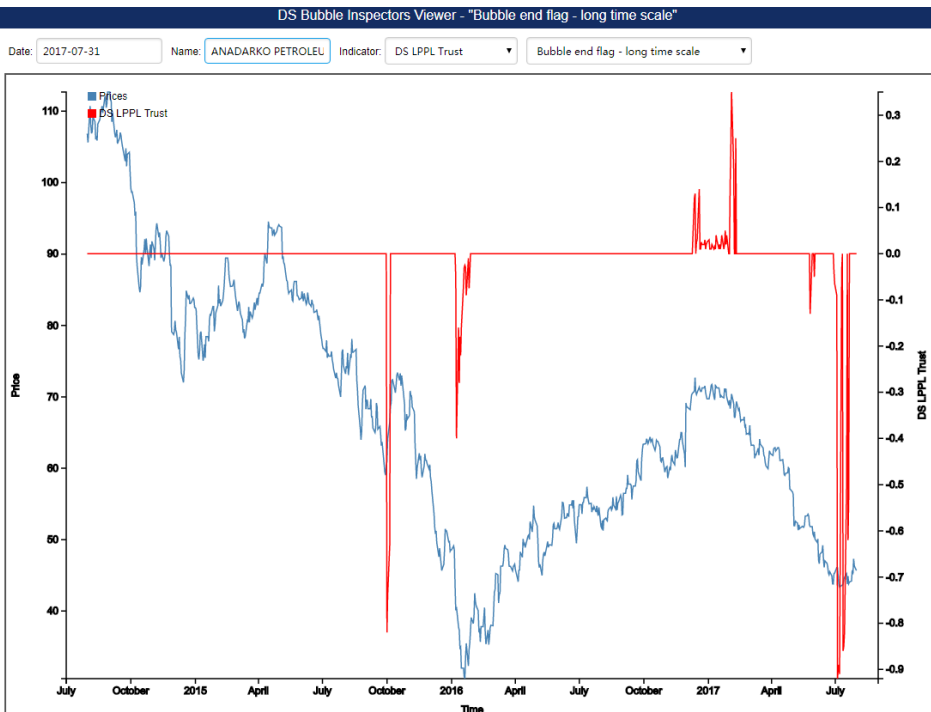
Left graph is a standard output from the Financial Crisis Observatory. It shows the historical price evolution of the stock in blue (left hand scale) and the calculated bubble warning index DS LPPL Trust in red (right hand scale). We can see a clearly spiking warning of the negative bubble. The right graph shows the performance of the stock over the last year (orange) with respect to the S&P 500 benchmark (purple), it is roughly -24%.

Last month example: strong negative bubble signals with weak fundamentals, Anadarko Petroleum Corp.

Note that the stock went down again after a small correction, in synchrony with our DS LPPL trust indicator and the weak fundamentals. Before buying back, one should remain cautious as there is still downward risk for this stock, which has been again identified with a strong negative bubble signal in this month.

Last month signal (1st Aug. 2017)

This month signal (1st Sep. 2017)



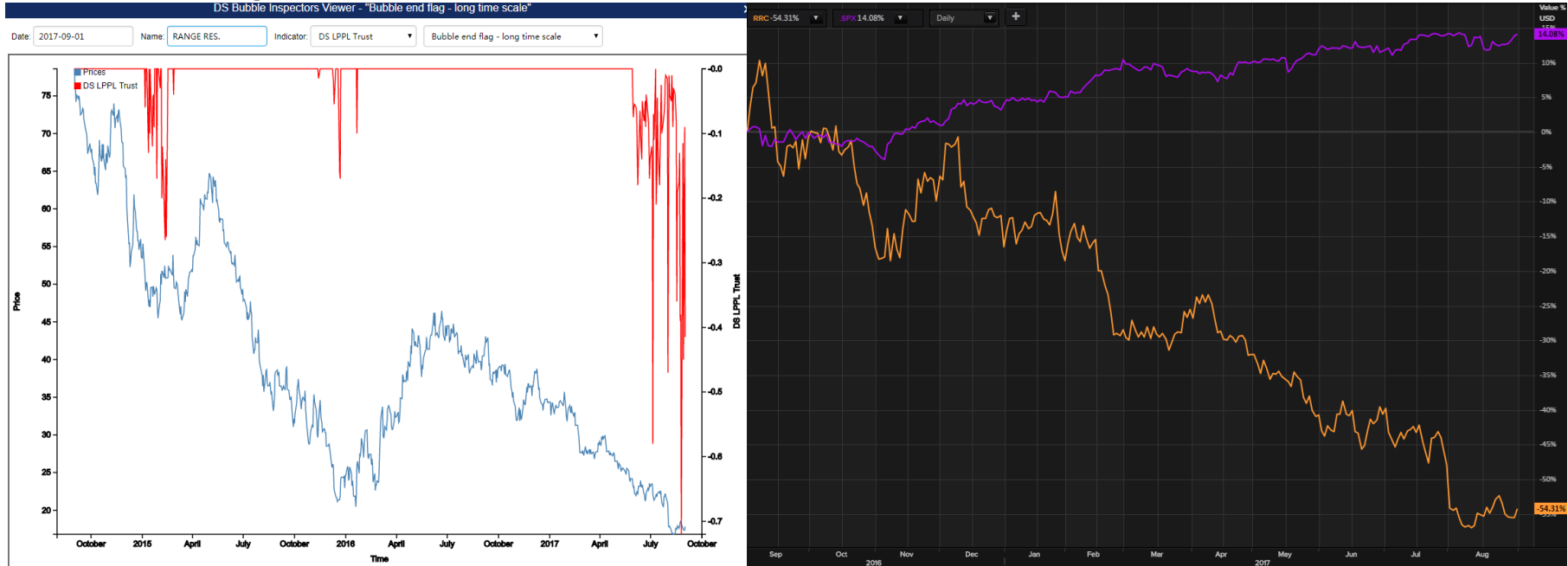
The FCO Cockpit – Global Bubble Status September 1st, 2017

Quadrant 4 stocks: strong negative bubble signals with strong fundamentals

Company Name	Country of Headquarters	GICS Sector Name	GICS Industry Group Name	Yearly Return	Bubble Score	Value Score	Growth Score
F5 Networks Inc	United States of America	Information Technology	Technology Hardware & Equipment	-2.7%	-16.6%	95.9%	78.5%
News Corp	United States of America	Consumer Discretionary	Media	-5.1%	-13.2%	97.2%	78.9%
Ross Stores Inc	United States of America	Consumer Discretionary	Retailing	-6.1%	-11.3%	76.5%	75.2%
Seagate Technology PLC	Ireland; Republic of	Information Technology	Technology Hardware & Equipment	-6.6%	-11.0%	88.0%	3.9%
Daimler AG	Germany	Consumer Discretionary	Automobiles & Components	-1.4%	-13.9%	85.0%	91.9%
Dixons Carphone PLC	United Kingdom	Consumer Discretionary	Retailing	-53.2%	-10.1%	98.2%	15.9%
Domino's Pizza Group PLC	United Kingdom	Consumer Discretionary	Consumer Services	-24.6%	-20.1%	75.3%	22.5%
Societe BIC SA	France	Industrials	Commercial & Professional Services	-22.9%	-33.9%	63.2%	15.1%
Rexel SA	France	Industrials	Capital Goods	-12.9%	-17.7%	91.9%	86.2%
Koninklijke Ahold Delhaize NV	Netherlands	Consumer Staples	Food & Staples Retailing	-29.7%	-10.5%	93.3%	75.9%
Hikma Pharmaceuticals PLC	United Kingdom	Health Care	Pharmaceuticals, Biotechnology & Life Sciences	-41.5%	-17.8%	87.7%	17.3%
Tenaris SA	Luxembourg	Energy	Energy	-8.8%	-16.5%	82.1%	94.4%
Paddy Power Betfair PLC	Ireland; Republic of	Consumer Discretionary	Consumer Services	-31.1%	-14.8%	75.9%	74.4%
Autozone Inc	United States of America	Consumer Discretionary	Retailing	-28.8%	-21.6%	85.8%	72.5%
Chesapeake Energy Corp	United States of America	Energy	Energy	-42.7%	-13.2%	67.4%	99.8%
Foot Locker Inc	United States of America	Consumer Discretionary	Retailing	-46.3%	-13.3%	96.5%	2.0%
Fluor Corp	United States of America	Industrials	Capital Goods	-25.7%	-20.4%	81.1%	2.1%
Helmerich and Payne Inc	United States of America	Energy	Energy	-30.0%	-17.8%	77.7%	8.4%
International Business Machines Corp	United States of America	Information Technology	Software & Services	-10.0%	-15.0%	77.3%	37.5%
Kroger Co	United States of America	Consumer Staples	Food & Staples Retailing	-31.6%	-21.0%	62.8%	7.7%
Noble Energy Inc	United States of America	Energy	Energy	-31.1%	-28.1%	66.8%	91.8%
Newfield Exploration Co	United States of America	Energy	Energy	-39.7%	-31.5%	61.1%	95.1%
Range Resources Corp	United States of America	Energy	Energy	-55.0%	-47.8%	87.0%	95.2%
Snap-On Inc	United States of America	Industrials	Capital Goods	-3.7%	-17.0%	62.0%	72.2%
BillerudKorsnas AB (publ)	Sweden	Materials	Materials	-9.3%	-20.8%	64.1%	33.9%
Skanska AB	Sweden	Industrials	Capital Goods	-4.4%	-13.3%	79.8%	9.6%
John Wood Group PLC	United Kingdom	Energy	Energy	-18.7%	-17.6%	95.8%	29.9%
WPP PLC	United Kingdom	Consumer Discretionary	Media	-19.1%	-12.6%	83.5%	27.3%

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Quadrant 4 stocks: strong negative bubble signals with strong fundamentals, example Range Resources Corp.



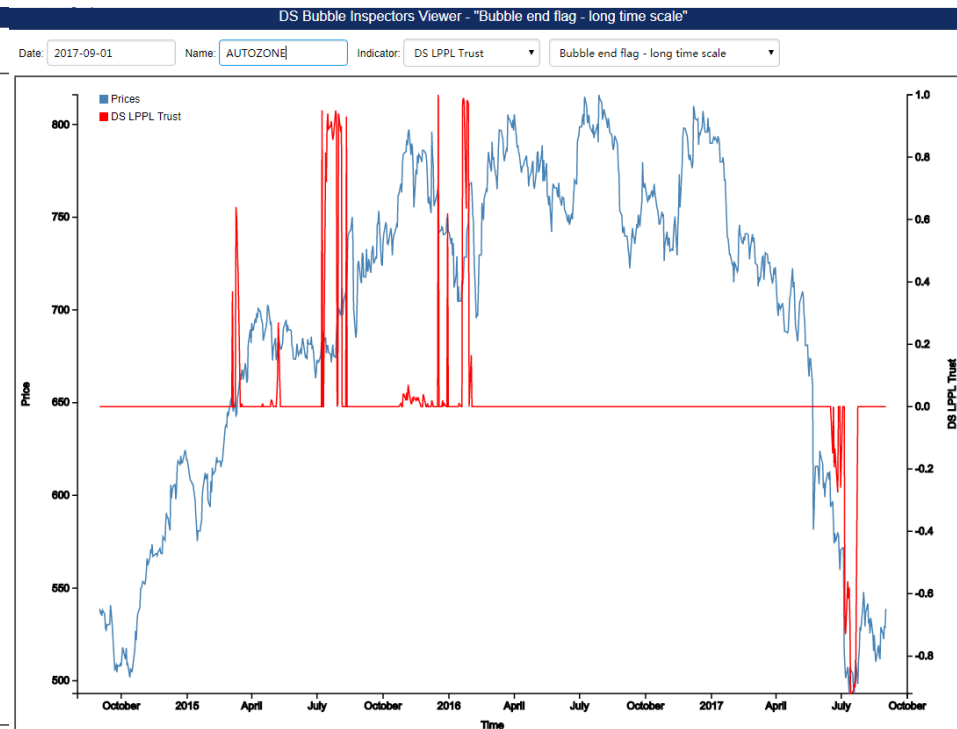
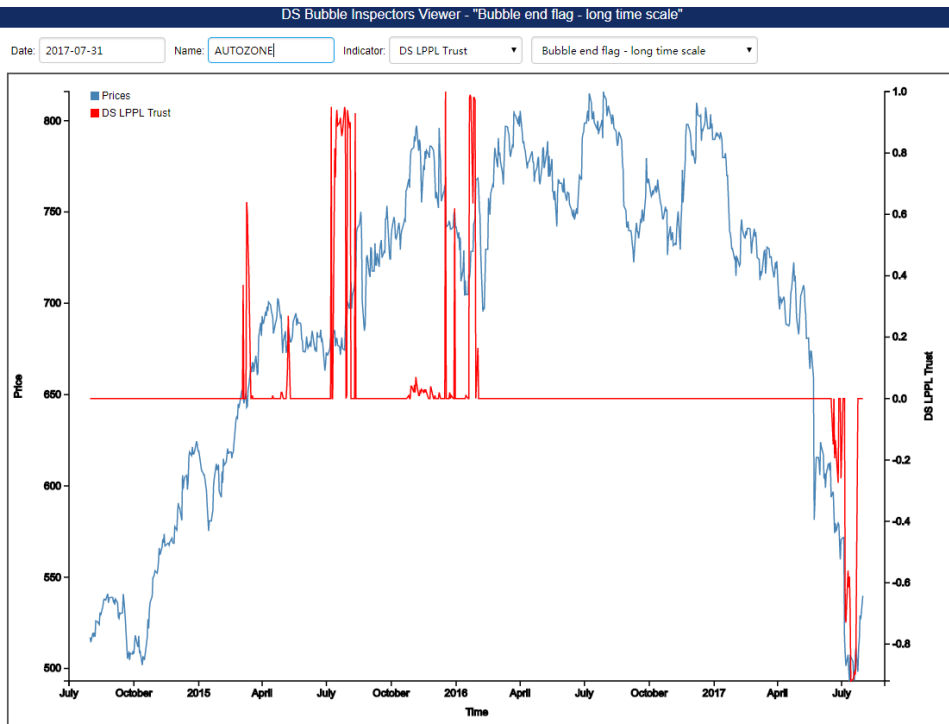
Left graph is a standard output from the Financial Crisis Observatory. It shows the historical price evolution of the stock in blue (left hand scale) and the calculated bubble warning index DS LPPL Trust in red (right hand scale). We can see a clearly spiking warning of the negative bubble. The right graph shows the performance of the stock over the last year (orange) with respect to the S&P 500 benchmark (purple), it is -68%. We expect a future rebound, which is due to our diagnostic of a negative bubble signal with strong fundamentals, calling for a contrarian buyer position.

Last month example: strong negative bubble signals with strong fundamentals, Autozone Inc.

Note that the stock started a rebound again after a recent small decline this month, which is in synchrony with our DS LPPL trust indicator and the strong fundamentals. We expect this stock to appreciate in the future due to the strong fundamentals and following its neglect by investors in previous months.

Last month signal (1st Aug. 2017)

This month signal (1st Sep. 2017)



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Sectors

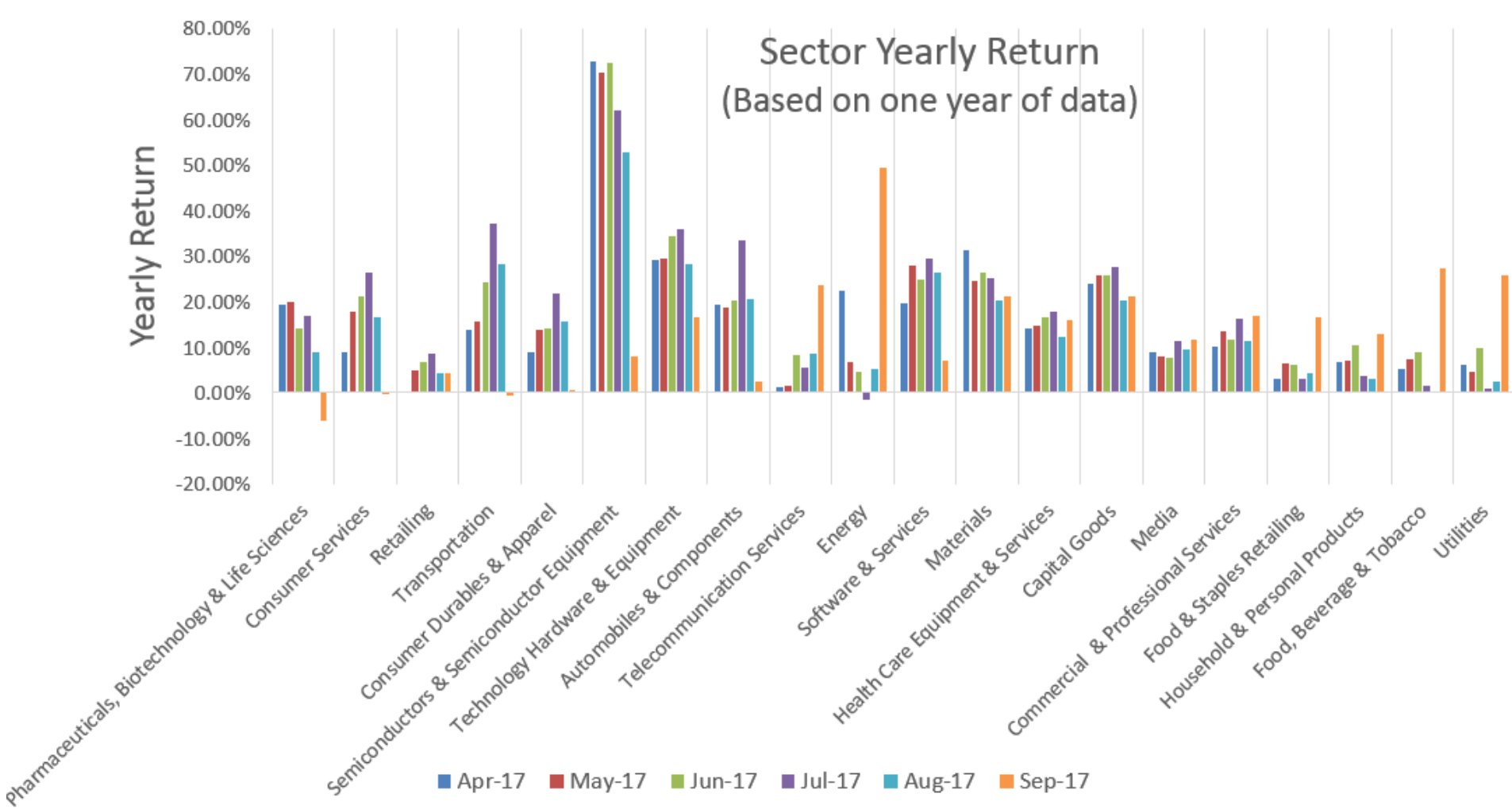
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GICS Industry Group Name	Yearly Return		Bubble Score		Value Score		Growth Score	
	Sep 1st	Aug 1st	Sep 1st	Aug 1st	Sep 1st	Aug 1st	Sep 1st	Aug 1st
Pharmaceuticals, Biotechnology & Life Sciences	16.6%	8.9%	3.3%	6.5%	42.1%	42.6%	51.2%	51.7%
Consumer Services	16.4%	16.6%	1.3%	8.0%	45.1%	45.3%	47.2%	47.0%
Retailing	-0.2%	4.4%	-1.2%	-1.6%	55.4%	54.3%	43.1%	42.4%
Transportation	27.4%	28.3%	4.9%	7.7%	53.1%	54.6%	41.6%	41.7%
Consumer Durables & Apparel	16.0%	15.6%	2.4%	2.6%	53.6%	53.6%	52.2%	51.9%
Semiconductors & Semiconductor Equipment	49.4%	52.7%	1.7%	3.0%	58.4%	59.0%	76.9%	76.2%
Technology Hardware & Equipment	23.5%	28.2%	1.7%	4.4%	62.5%	62.0%	49.0%	47.6%
Automobiles & Components	21.2%	20.6%	1.9%	2.6%	74.4%	75.3%	62.7%	61.6%
Telecommunication Services	7.1%	8.6%	1.9%	0.8%	53.5%	53.2%	41.3%	38.9%
Energy	-6.3%	5.2%	-5.9%	-3.0%	55.2%	52.2%	67.4%	67.4%
Software & Services	25.8%	26.4%	9.7%	8.6%	39.7%	41.4%	47.9%	47.8%
Materials	21.1%	20.2%	2.7%	4.1%	54.4%	55.2%	53.0%	54.4%
Health Care Equipment & Services	12.9%	12.3%	4.2%	8.9%	39.7%	38.4%	50.4%	52.1%
Capital Goods	16.8%	20.3%	2.8%	6.2%	45.4%	46.0%	51.4%	50.9%
Media	4.2%	9.6%	-1.2%	0.5%	55.9%	53.5%	48.5%	48.2%
Commercial & Professional Services	8.0%	11.4%	0.6%	1.1%	41.2%	41.2%	40.9%	41.7%
Food & Staples Retailing	-0.5%	4.2%	-0.4%	1.5%	58.5%	56.6%	38.3%	40.9%
Household & Personal Products	2.3%	2.9%	1.6%	3.2%	30.1%	23.3%	47.8%	42.2%
Food, Beverage & Tobacco	0.7%	0.4%	0.0%	0.6%	40.8%	40.5%	46.2%	49.1%
Utilities	11.7%	2.4%	2.8%	2.9%	60.7%	63.2%	38.6%	37.7%

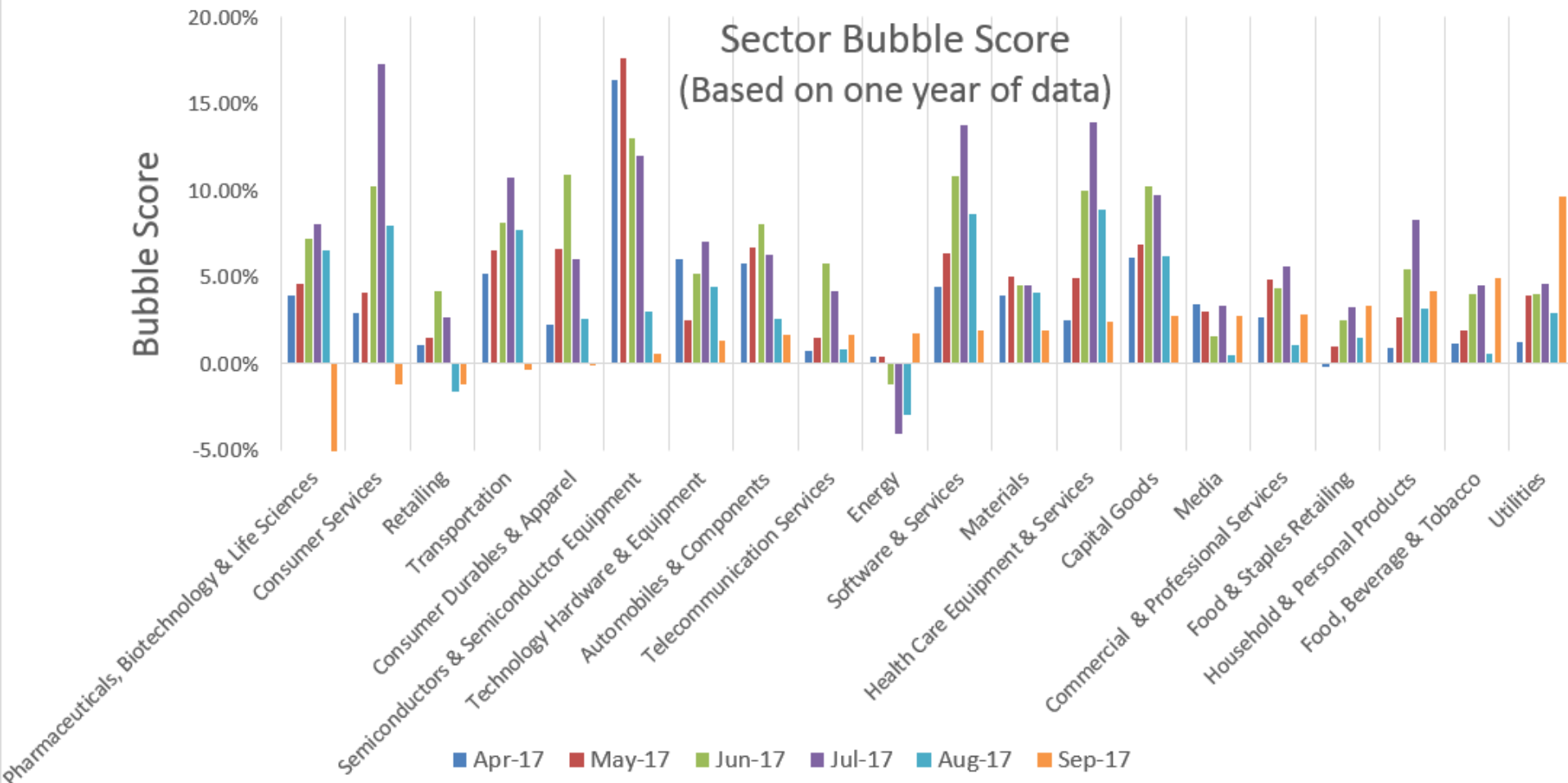
By aggregating the calculations that were done at the single stock level in the previous section, we can see the bubble, value and growth score at the sector level. The results in the previous report are also presented here for comparison.

- This month 17 out of 20 sectors have smaller bubble scores compared to last month. The sector *Software & Services* has a significant positive bubble with low value score, calling for a contrarian buy position in this sector.
- The sector *Energy* we reported in the last two months has a more significant negative bubble score, reflecting that the recent drawdowns of energy prices are still continuing.

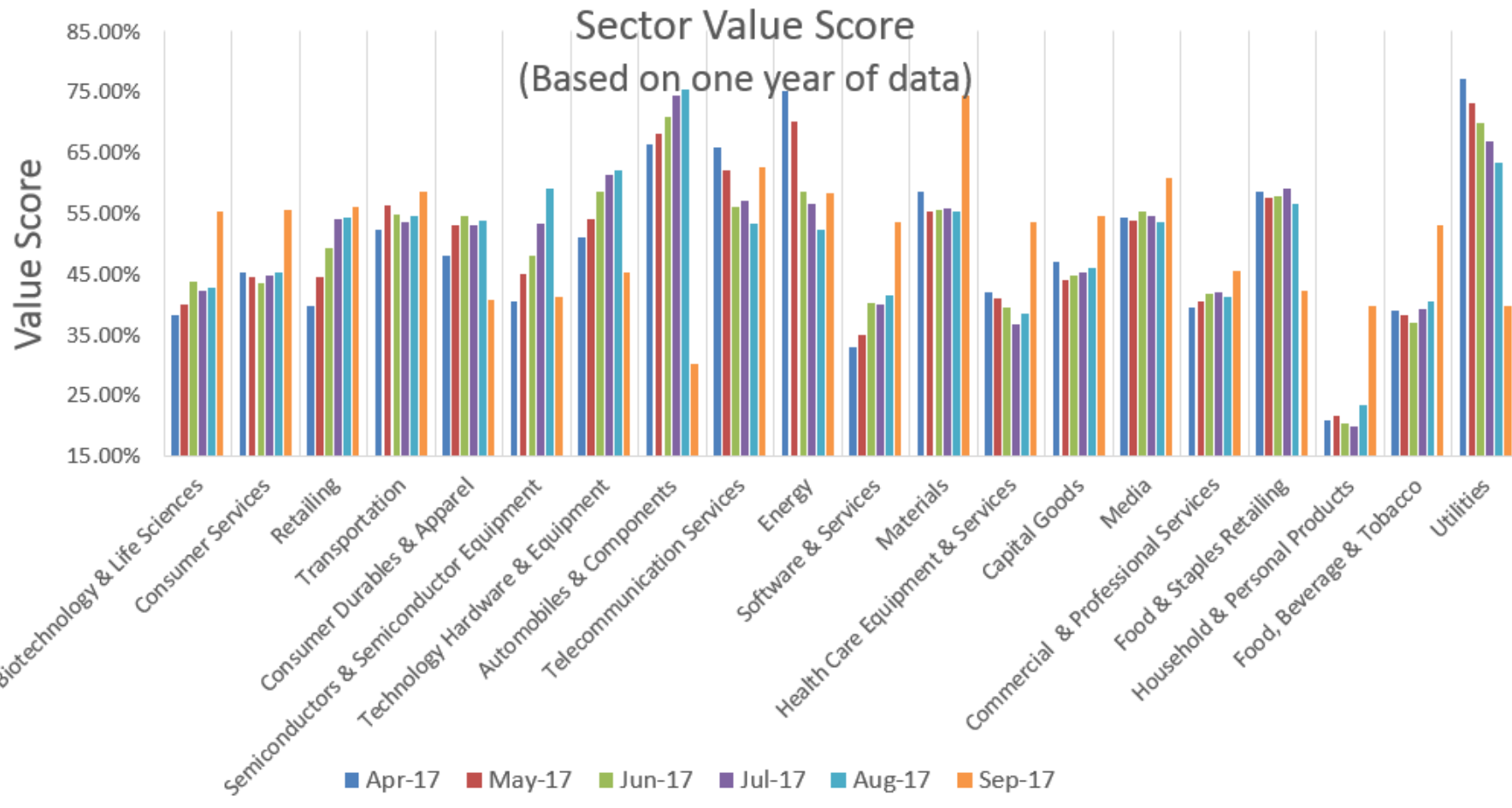
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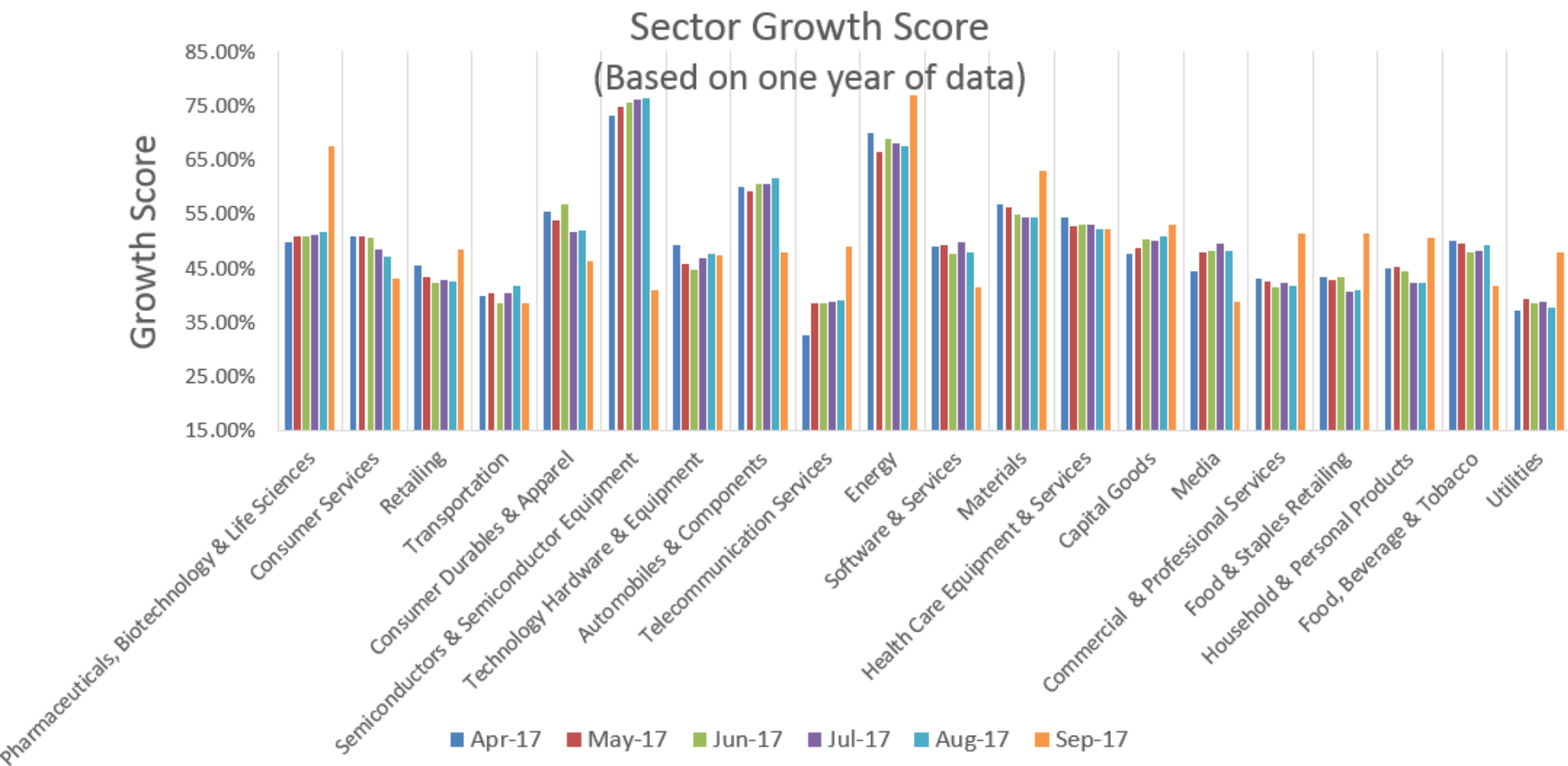
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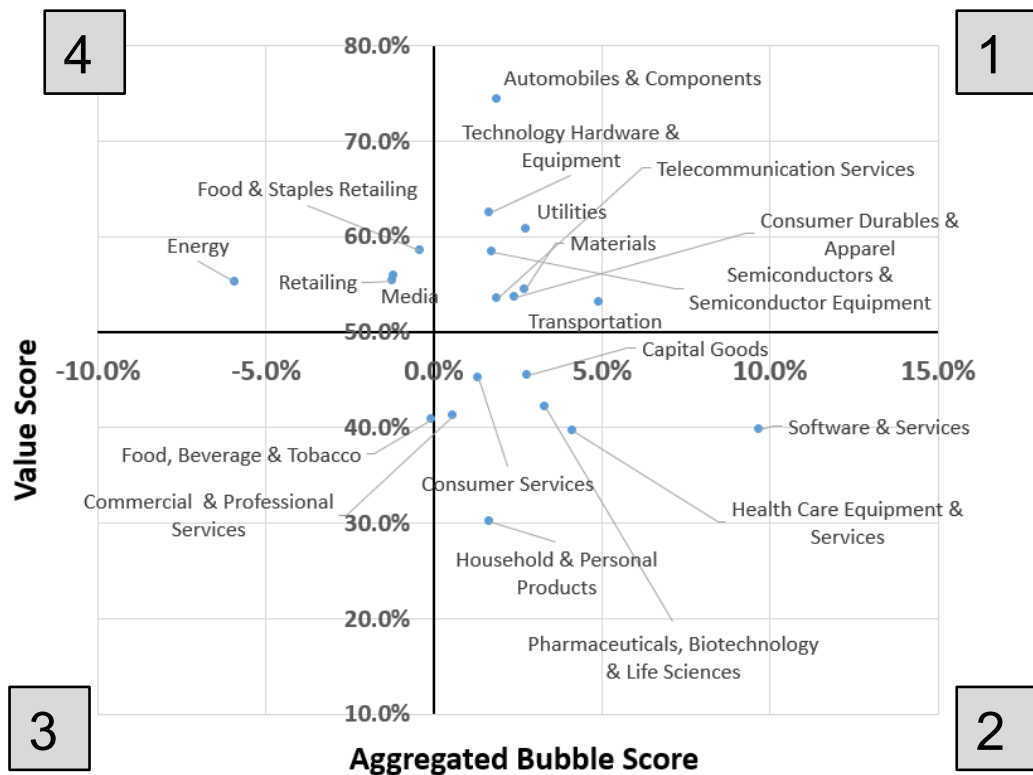
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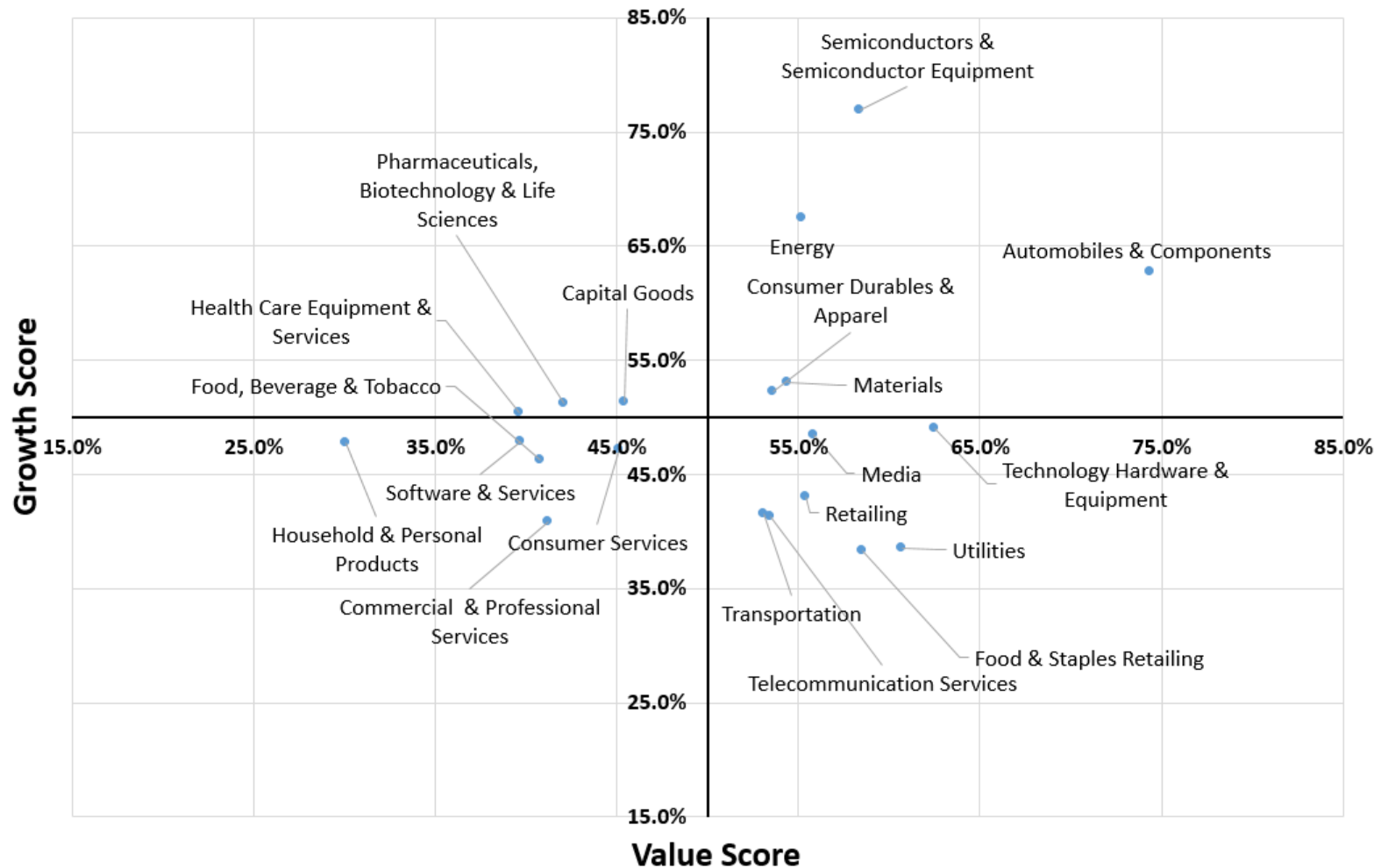


By plotting the value score versus the aggregated bubble score, we can also divide the sectors into four quadrants*:

1. [Quadrant 1](#): Sectors with an average positive bubble score and a strong value score;
2. [Quadrant 2](#): Sectors with an average positive bubble score and a weak value score;
3. [Quadrant 3](#): Sectors with an average negative bubble score and a weak value score;
4. [Quadrant 4](#): Sectors with an average negative bubble score and a strong value score.

*For sectors, a strong value score is identified if value score is larger than 50%, and a weak value score is identified if else.

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Portfolio Construction and Performance

Here we illustrate the methodology of the portfolio construction process based on the results of our previous analyses.

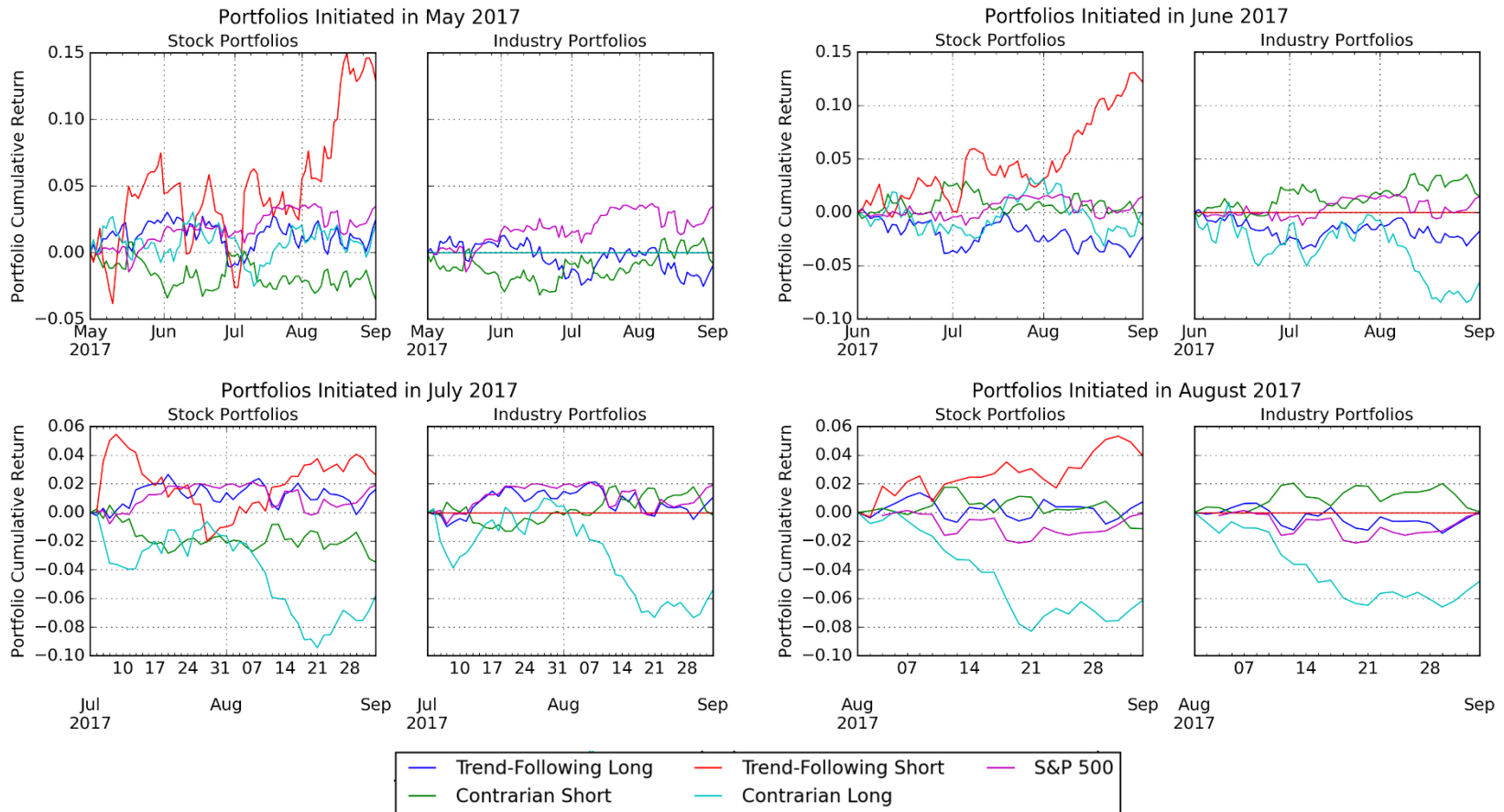
For individual stocks that we identified in the 4 quadrants, we constructed 4 portfolios based on the 4 quadrants defined in the last report. Each portfolio consists of all the stocks listed in the corresponding quadrant.

- (1) Trend-Following Long Stock Portfolio (TFLSP) is made of the stocks that have a **strong** bubble signal as well as a **strong** value score. For instance, TFLSP June consists of all the stocks listed in quadrant 1, identified in slide 25 of June FCO Report.
- (2) Trend-Following Short Stock Portfolio (TFSSP) is made of the stocks that have a **strong** bubble signal as well as a **weak** value score.
- (3) Contrarian Long Stock Portfolio (CLSP) is made of the stocks that have a **weak** bubble signal as well as a **strong** value score.
- (4) and Contrarian Short Stock Portfolio (CSSP) is made of the stocks that have a **weak** bubble signal as well as a **weak** value score.

At the same time, we also classified 20 industries into 4 quadrants. We also constructed 4 type of industry portfolios based on the 4 industry quadrants. Each portfolio consists of all the stocks in the industries listed in the corresponding quadrant. Following the same definitions as above, we have Trend-Following Long Industry Portfolio (TFLIP), Trend-Following Short Industry Portfolio (TFSIP), Contrarian Long Industry Portfolio (CLIP), and Contrarian Short Industry Portfolio (CSIP). For example, Trend-Following Long Industry Portfolio June consists of all the stocks in the industries listed in quadrant 1, identified in slide 39 of the June 2016 FCO Report.

In each month, we initiated 8 new portfolios based on the updated results. The performance of every 8 portfolios we initiated in each month since April 2016 are presented in the next slide. All of the stocks in our portfolios have the same weights and we don't consider transaction cost in the portfolio performance.

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This month, we find that most Short portfolios, especially Trend-Following Short ones, initiated in May, June, July and August 2017 have good performances. This is mainly due to the continuing declines in energy stocks that we identified in Quadrant 3 in recent months. Contrarian Portfolios are more delicate to use due to their sensitivity to timing the expected reversal and exhibit very volatile performances, indicating that most of bubbles in the market are still dominating and that fundamentals have not yet played out. We expect trend-following positions to perform in the months following the position set-up and then contrarian positions to over-perform over longer time scales as the predicted corrections play out.

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For information, see

<http://www.er.ethz.ch/financial-crisis-observatory.html>