



Francesco Filia: Positive Feedback Loops Threaten Systemic Risk Escalation

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Erik: Joining me next on the program is Francesco Filia from [Fasanara Capital](#) in London. Francesco, I'm really excited to get you on the program, because, as an engineer, I think in terms of things like feedback loops, and I know that you look at finance and some terminology that's very familiar to me.

You've sent us a wonderful slide deck that I strongly encourage our listeners to refer to. Registered users, you'll find the download link in your Research Roundup email. If you're not yet registered, just go to [macrovoices.com](#) and look for the red button above Francesco's picture that says [Looking for the Download](#). And you'll get instructions to get registered and get the download.

Let's go ahead and jump right into your presentation. Why don't we start with Page 3 here? You're talking about an equity bubble, very much something that's near and dear to my heart. And, just so you know, we've tried to position – we had a guest last week who was saying don't worry about the bubble, don't worry about valuations. We wanted to bring you in to give the contrasting view.

So tell us about the equity bubble and what you see on the horizon.

Francesco: Thank you, Erik. I think the equity bubble is quite uncontroversial, is quite unambiguous. There are a lot of different valuation metrics for those that care to look into them. They've been valid for over a hundred years of modern financial markets. And this time is no different in that respect.

There are the usual metrics that the valuation guys are looking at, like financial assets to disposable income that shows that this market is way more expensive than at any point in history including the big dot com bubble and the Lehman moment in 2007-2008.

But there are other metrics like the Buffett Indicator (market cap on GDP), the median debt on total assets, the corporate debt to GDP, the price on sales, the price to book, enterprise value on sales, enterprise value on EBITDA – there are a number of different metrics. They all convene that this is a market bubble that has not been seen before in history.

The only one metric that makes it a little bit less acceptable and tolerable is the comparison to bonds, which, unfortunately, are themselves into a bubble. And so they don't provide much help in this respect. We will go through that in a moment.

But we at Fasanara, we developed our own indicator just to try to add something to what was available already. And we started with one of the most famous of all the indicators in this respect, which is the Shiller adjusted PE ratio, or the CAPE ratio. This is the most famous of them. Professor Shiller got a Nobel Prize in 2013 for it. And for his studies on market inefficiencies and for the ability to infer future expected returns from valuation metrics such as the Shiller PE.

And, based on the Shiller PE, what it does is simply to compare current prices not to spot earnings or forward earnings, but to a more reliable measure of the average of the last ten years, adjusted for inflation. So the average of the last ten years of real earnings. And on the basis of this index, we find out that the market is just a little bit less expensive than it was in 1929 during the Great Depression, the peak of the market before the biggest collapse in equity prices ever seen, and the year 2000.

From that point onward – you know, that index itself has got a few critics. They say, yes, but wait a minute. Because of the great financial crisis in 2007-2008, what you have, you have the distorting effect of those low earnings. So if you do the average, the average is impacted by those low earnings.

So what other people like John Hussman very famously came out with – what they do is they adjust this PE ratio for peak earnings instead of average earnings. So to defuse the most common criticism of the Shiller adjusted ratio. On the basis of the Hussman ratio (if you want to call it that), the market has never been so expensive, except in year 2000. So on the basis of the Hussman ratio, the market is more expensive than 1929 but is not as expensive as in year 2000 (as yet).

John Hussman also looks at the adjusted ratio for profit margins and finds out that this market is yet more expensive than in year 2000. But, on the basis of his indicator based on peak earnings, you could still argue that this market is not as expensive as in year 2000.

What we do is an evolution of the Hussman PE ratio (which is taken from the Shiller ratio) which is to compare – kind of putting all in one basket. So we put the peak earnings as opposed to average earnings, and for peak earnings we really mean the peak. We take the two top quarters over the last 40 quarters. So we cannot really be seen as being any more generous to the current markets, we take the two peak quarters of the last 40 quarters. And then what we do is we compare these peak earnings to potential growth, or trend growth.

Because the point here is that what you pay in terms of stocks, should compare, not just to the past capacity to produce earnings, but also to the overall economy generally. Because if the overall economy has a lower potential growth you should be expecting to be willing to pay less in terms of multiples than otherwise. The overall economy has a big correlation to earnings and to profit margins, so you should expect the potential growth rate of the economy to be quite relevant when it comes to PE multiples.

Erik: I particularly want to focus on Page 4 where you talk about the bond bubble as well. Because this is something that I think so many investors in the US are not adequately focused on. We have not only a bubble in equities, but a bubble in bonds. And this, to some extent, flies in the face of traditional wisdom, which says assets flow from the equity market back and forth to the bond market – depending on investor sentiment about risk.

But we've got bubbles in both at the same time. How is that possible? What's driven it? And what does it mean?

Francesco: Absolutely. The only point that you could say in justification of equity market's multiples is to look at interest rates. Interest rates are so low that they justify this eagerness of investors to pay these high multiples on stocks. And our point is, look at bonds and look at their valuation, and how they compare to metrics such as inflation and GDP – to which historically they are very well correlated – and you find out what this chart on this page, which is showing that we are in totally uncharted territory at present.

What is this chart? This chart compares nominal rates on German bunds – which are some of the most expensive government bonds on earth and in history – to both Inflation and GDP growth currently experienced by Germany. So the idea – and you see that also in the next slide – the idea is that the real rates in Germany are heavily negative at present.

Because what you had was that, at the turn of the year, at the end of 2016, inflation started to resurface. So you had deflation turning into inflation you had a pickup in inflation, which is exactly what you see on the next slide.

You see that inflation picked up, whereas nominal rates on German bunds continued their descent. And they continued deeper into negative territory because, obviously, of the ECB policy, of the policies of the central bank. At what point you had a gap opening up between nominal rates and inflation, which means that the real yields were becoming very, very negative. And you see here a table with the negative yields being minus 2.5% on average.

Now, rates typically are correlated with inflation. So this is a disconnect that, in itself, is very difficult to justify from the viewpoint of central banks.

And the other thing that interest rates are correlated to is growth. We know that very well, that long-term interest rates, they tend to converge to nominal growth expectations for the economy. So here, in this one indicator which we call the "real rate to growth ratio", we put it all together, so we compare the nominal rate to inflation to growth. And we end up seeing this. That these bonds have never been so expensive, because real rates are in deep negative territory – despite a GDP which has resurfaced. It's not anymore zero or negative; it is close to 2% as far as Germany is concerned.

Why is this the case? Obviously, this is the case because of flows. Passive flows from central

banks. Every month, still, as we speak, \$300 billion (equivalent) of safe assets, and some risky assets, are bought by major central banks. \$300 billion dollars still!

A lot is being planned in terms of tapering – the ECB will move from 60bn to 30bn in January. The Federal Reserve has already said that next year they will wind it down and they will tighten the balance sheet for the first time. And we know about the possibility that the Bank of England will do the same. But, as we speak, we live through “peak quantitative easing”, \$300 billion per month. Which means that in 2017 alone \$3.7 trillion have been printed just to buy government bonds, and some mortgages, corporate bonds – and, in some countries, also some equities – like in Switzerland and Japan.

So bonds are in a definitive bubble and uncontroversial bubble here as well. And when you compare equity to bonds you kind of fool yourself a little. It’s really not so much about valuations. It’s really about flows. And the flows that come from the central banks first make the bonds expensive. And, as a consequence, they make equity expensive. But now both have become so expensive that it is really striking.

The point that I would like to make here is that we have seen many crises in the past – many moments of big adjustments and downfalls in markets – in 1929, in 2000, 2007, 1987, 1966. But this will be the first one, if it does go down in the way that we expect, where you don’t find bonds expensive at the outset of the movement. In all those years, rates were not that low in proximity to zero.

In all those years, rates were still quite fat. So you could have, in all those moments, a moment in time in which equity could lose 50% – but at least bonds were making quite a lot of money. So the balanced portfolios around the world were still fine. Or just not damaged as much as they could be today when equity is expensive, and bonds are expensive as well – to the point that they can never be more expensive than this, because they already trade for the most part at negative rates.

Erik: Now I want to push back on this with a hypothetical question. What if I said to you, look, Francesco, you’re absolutely right that both equities and bonds are in a bubble. I couldn’t agree more. But I could have told you that two years ago. And guess what? That bubble has just continued to inflate more and more.

As you said, we have unprecedented quantitative easing that’s been fueling all of this. So a momentum-oriented investor would say, why not jump on board the long side of this and ride the ride up? This bubble keeps on getting bigger.

What’s the proximal trigger? What’s the catalyst that’s going to pop the bubble and eventually cause this massive market move to reverse direction?

Francesco: There can be a catalyst. Or there can be no catalyst. If you talk about catalysts, I could argue that a catalyst could be inflation, for example. At the moment, we have seen that

inflation resurfaced. We have seen some tightness in the job market. It has not translated yet into wages growth and therefore sustained inflation. But we could just be about to see that. And, in that case, rates would rise and they would provoke, as a catalyst, the kind of downfall that we expect.

Or the catalyst could be political. A lot of quantitative easing is being created and it is benefiting only the top 1% of the population. And it is resulting in this so-called "income inequality" concept. And, so much, the central banks are pushing the "wealth effect" as they try to make it easier for people to spend more in the economy. But in reality what they are really triggering is "inequality effect".

The consequence of income inequality is populism. Populism can provoke a regime change. Regime change can then affect quantitative easing if the result was not to help the real economy and the middle classes but only the top 1%. So the catalyst could be political.

But I can also argue the catalyst could be China. China has a huge problem of over-indebtedness. It is said to be between 300% and 600% of GDP. GDP is \$11 trillion. So it is a monumental credit bubble that could give troubles at any point. And if it gives troubles you can expect the whole world to listen carefully, like it did in August of 2015 and January of 2016, and even more than that.

I think that it can be also no catalyst. And why is it no catalyst? Because at moments in which the market is overvalued you can never know for sure how much further the bubble can go. But at some point it reaches a tipping point, a critical mass, where the probability is higher and higher for it to fall down under its own weight.

I would refer to a concept like the "Minsky point", tipping point, after which new credit doesn't achieve nothing more in terms of generation of growth, but not even in terms of ability to pay for the interest rate payments on previous debt. And the same is true also for the prices in the stock market, for example.

I could argue that the valuations are so full – they can get fuller, but at some point they become so irrational that they make no sense and the risk is there for them to fall off a cliff. You know, like, Claudio Borio at the BIS, has recently said that "financial booms don't go on indefinitely, at some point they fall under their own weight."

And, to use an analogy, you could say – nothing is here to say that the economy is doing badly, the economy is beautiful. If you compare the economy to a washing machine, I can say this is a beautiful washing machine. But, still, I'm not prepared to pay \$10,000 for it. So, at some point, you reach a level at which you say this is enough. And then for a catalyst or no catalyst, you know, you have in front of you a moment of big adjustment.

Erik: Your next section here in your presentation is titled Market Fragility. Talk us through this diagram on Page 10. What's going on here with the fake market cycle?

Francesco: The fake market cycle is one where, basically, economic narratives are utilized to justify whatever happens in the market, good or bad, in retrospect. So, say the market doesn't go down on Brexit much and then immediately recovers, and goes into new highs. The market doesn't go down much on a Trump event, immediately recovers, and then goes into new highs. And basically what we expose here is those fake narratives.

So, narratives in retrospect that are able to justify a movement in the market that was not due, really, to investors interpreting the event all of a sudden in a totally different manner – but rather a market which is primarily driven by flows, where these flows are primarily passive from central banks and then primarily passive from the private investment community.

In the fake market cycle, what we try to say is ignore narratives that are very elusive, and they are overfitting. They always come as handy explanations ex-post.. Try to challenge them. And try not to, really, fall in the “induction trap”, which is one of the most prominent psychological biases, but look at money flows instead. And you will see, if you read the markets from the viewpoint of money flows, that they are justifying every single movement in the market over the past several years.

In the fake market cycles we see markets going up because of central banks, which are joined by passive strategies – and I think our next slide will be exactly on that – trying to understand the relationship between central bank flows and the passive private investment community. They truly reinforce each other. They push the market higher. At some point you have bad data, and those bad data they get interpreted in different manners. There was a moment in the market a couple of years ago where, whenever we saw bad data, the market was rallying, because they were expecting more monetary printing and more interventionism from the side of central banks.

A little bit later, when rates were falling because of deflation, the narrative was chasing yields. So the narrative was not that there is deflation, therefore there will be a recession, therefore there will be a deflationary bust. The narrative was that there will be a deflationary boom. So the narrative was “chasing yields”. So go into bonds even if the yields are low (whenever there is some yields left), go into equity to get some yield, and so make equities more expensive.

Then later on, pretty much about when Mr. Trump won the elections, you had a new narrative coming in, which was “chasing growth and chasing reflation”. And the whole market was repositioning to that, going long banks and short utilities, and so forth.

So at this point the market was not worried, as it could have been, about higher rates – the impact that higher rates could have had on Italy, for example, which is spending 3.6% of GDP in just interest rate payments on government bonds. But the narrative was positive. It was about reflation.

At some point the reflation story was challenged, because it was all too clear that it was not

really happening. You could see that the big pickup in soft data was closing the gap down to the downside on hard data. And you could see that the hard data were always very weak, and soft data went up and then came back down. So the reflation story was not there anymore.

But then there was another story that could convince investors that what was happening was making sense, which was to “chase earnings”. Earnings around the middle of this year, after the second quarter, they were the one bit of positive information out there. So the market was focusing a laser focus on that only, and that was becoming the driving narrative. But it was a fake narrative. Because, in reality, it was really about flows, in our opinion.

The current narrative nowadays is “synchronized global GDP growth”. How many times have you heard that? And then, we see it all the time, and that is justifying the fact that the indices are reaching new heights. Except nobody is discussing about how this growth is achieved, through massive additional debt. And the debt on GDP that is on the shoulders of governments, that is unheard of in modern financial history.

So our point in this slide is that the fake market cycle is trying to prove that it is not really about narratives. The narratives are exposed and they're just handy excuses. But the point of this – market is about flows: the passive flows from the public central banks, from the private investment community, from the EFTs, to all the new investment strategies. And our point here is to challenge your assumptions about the market and be prudent because, you know, the future is really wide open. Anything could happen now that flows are coming back and for the first time we see tapering and quantitative tightening.

Erik: It should come as no surprise that there's synchronized GDP growth when you have synchronized money printing all around the world.

My background is in engineering, so I always think about systems in terms of whether or not they are inherently stable. And an inherently stable system has feedback loops where when something gets out of whack it fixes itself. And an unstable system is one where the feedback loops end up resulting in the situation getting worse rather than better.

So I was delighted to see your emphasis using some engineering terminology, which is rare in finance.

Please tell us about Slide 12. What are you talking about here with positive feedback loops and how they affect this whole cycle?

Francesco: Exactly as you said. Whenever there are positive feedback loops – and that is true in engineering, in cybernetics, in chemistry, in biology – whenever you have that you have the possibility of a self-fulfilling prophecy and a reinforcing process. You have reflexivity. You have a number of things that provoke a further diversion from fundamentals, or call it from “general equilibrium”, and the resulting “system instability”.

And this is the case right now, in my opinion. The system instability is further defined as a state in the markets in which a small disturbance is able to produce a very large adjustment.

So whenever – you said before what is the catalyst? And I said there could also not be a catalyst, that things could happen all of a sudden because of this very fragile state of affairs and because of the fact that it's very unstable, this equilibrium.

And, to use an analogy, when you talk about an unstable equilibrium, you should think of a pendulum which is held in the vertical position. And the pendulum that is held in the vertical position stands still, it looks really stable. But a small disturbance is able to crash it down left or right.

When the equilibrium is stable instead of unstable, you should think of it as a painting which is attached to the nail – and it can move a little bit left and then goes back to the original position, a little bit right and then goes back to the original position. The market is like a pendulum held in vertical position, in our opinion.

So what happens? There are these massive public passive flows, these are central banks. In the last ten years, roughly, they printed \$15 trillion. And they've spent that money to buy financial assets. Primarily government bonds, but also some risky assets like mortgages. And in some countries, as I said, Switzerland and Japan, also directly equities. Japan owns the majority of the ETF industry in Japan for \$200 billion (equivalent). And the Swiss central bank owns \$100 billion worth of stocks, primarily US stocks.

Now, we live through the peak QE. What are the two major factors that were originated by this \$15 trillion printing and these huge monumental money flows? There are two. There is a "Factor Trend" and there is a "Factor Volatility". The two consequences of those flows were trending markets – upward, obviously, because of all those flows. And financial repression of volatility, which means, really, volatility being killed to the ground and going into new all-time lows. Those are two consequences of those monumental money flows.

Those two factors have an impact. A reflective impact on the private community. Because the whole private community adjusts to those two factors.

So here we have a cursory look at all the players involved – some of the players involved – going from ETF and positive index funds to all the fashionable investment strategies nowadays of Risk Parity, Risk Premia, algorithmic funds, short volatility vehicles, machine learning, etc. And you can see that 90% of the investment community is affected by either one of those factors – volatility or trend – or both of them. 90% of the most fashionable investment community, and the most successful at present, is either going long trend – so long only – or it is shorting volatility, or benefiting from low levels of volatility.

So, the day that either one of those two factors changes direction – if volatility goes up or the trend goes down – you can expect the whole community to move in one shot. So this slide is

intended to prove that the whole market looks like one large big position, which is long only, fully invested when it's not leveraged, which is short volatility. And the short volatility also results in a short Gamma and short Convexity position. And it is exposed to the benefit of lower interest rates. So it is going to be damaged if interest rates go up.

So, if I can spend a minute on this, a minute more, I will say that ETFs are the most – what you would expect – rates are going down, so it is very difficult for managers to make a performance and to justify fears. Therefore, there is from the investment community an obsession for fees. Therefore these ETFs are able, obviously, to be produced for very little cost, for total expense ratios of less than half a point and for management fees of 9 basis points or even smaller than that. We have even seen some ETFs for 3 basis points of management fees only. So they are a byproduct of the current environment of lower and lower interest rates which is produced by central banks.

What do they do, the ETFs? They obviously go long only. By definition. They don't price any risk inside portfolios. ETFs, when you buy a certain subset of the market through an ETF, that ETF will not decide to be underweight for any reason. Not because there is a big election coming up, not because there is a potential nuclear strike in North Korea, not because there is a valuation problem – that investment will be mindless and will be long only and will be fully invested.

And this is number one: Now the ETFs alone represent close to 90% of the equity flows daily on the S&P these days. And this is an estimation coming from Vanguard, which is the number one shopper for ETFs. A different estimation from Bank of America sees 70% of the flows due to ETFs. But, you know, you are talking about a very big percentage.

Now why is it that they are so dominant? Because of the turnover of ETFs. In total, they are \$4 trillion globally. But their turnover is ten times bigger than the turnover of their underlying stocks. On average they have indeed a ten times turnover. So they move, just in the US, \$15 trillion dollars worth of assets every year.

Now, the next asset class is Risk Parity- Target Volatility funds, Vol levers. They benefit from upward trend and they benefit from down movements in volatility. What is a Risk Parity fund? A Risk Parity fund is a balanced portfolio, pretty much, which goes long bonds and equity and allocates on the basis of risk. So on the basis of expected volatility for both asset classes. The lower yield – the lower volatility – the more size they put and the more leverage they put on bonds, and the more leverage they put on the overall portfolio.

So you should know whenever volatility is low that, in order to maintain their return expectations, they're utilizing leverage. And the leverage doesn't look like that risky, because volatility is low. Except volatility is a byproduct of central bank activity, so you cannot really rely on it as much as you are doing right now.

Risk Parity funds have been working for 20 years. So they have seen some bear markets on bonds, especially in 1994, but very little ones. Bonds have really been rallying all the way

through the last 40 years. So this could be the first market where, for the first time, risk parity funds see a combined selloff in equities and bonds, for which they are just not designed.

How big are they? The whole market, when they quote the numbers on Risk Parity funds, they speak of low numbers, less than a trillion dollars. What is often not taken into account is that the leverage of those funds is two to three times, and therefore the full size is much bigger than it looks when looking purely at the assets under management of those strategies.

In addition to this, the risk parity funds are not in a vacuum. There are a lot of other vehicles which are short volatility, or which specifically targets volatility, or where volatility is the lever on the basis of which asset allocation is decided.

So if you put everything in one basket, you reach the staggering amount of \$3.75 trillion of AUM, after leverage. Which is really, really big. And you can expect it to really behave badly if bonds start to sell off violently, together with equity.

Then you have another market, which is an interesting one – and I think we will touch upon it in the next few slides – which is the short vol ETFs. For the purposes of this slide, I will say that we have found out that if a vol doubles up from current levels, so the VIX goes from 9 to 20 (18–20), some of these ETFs are going to be wiped out. They are going to trigger “termination events” on some of these notes, so this is really an accident waiting to happen. And it is linked to volatility.

Then you have trend-chasing algorithmic funds – like, you count around \$750 billion around the world, 2/3rd of it is trend-following. And this does exactly what it says. Whenever the trend inverts, they will follow the trend. So at least they say the truth and they don’t put up any story.

Then you have a number of strategies, which probably don’t say the full truth. They probably are nice commercial disguises for being long and selling volatility. And in this market I consider – in addition to Risk Parity funds – also Alternative Risk Premia, and Machine Learning and Artificial Intelligence. Here we are talking about a market in total of \$350 billion of AUM. It’s a very big market nowadays.

And, you know, I speak about a commercial disguise for something which is full long and short vol, because, in reality, momentum is a key factor in a lot of risk premia funds. In machine learning, the whole point is to try to detect a certain investment pattern and try to take advantage of it. But the reality of the matter is that a lot of the big data created is only two years or three years old. So a lot of it has been detected upon the time series of the last few years, which is heavily manipulated by central bank activity.

So, if you are a machine learning enterprise and you try to detect something in the last 36 months of data, what is there to know, if not that “buy the dip” was able to beat even “buy and hold” as a strategy? So it doesn’t take much to understand that that will be the conclusion of the sophisticated technology being put at work. And whatever is not that is probably not as

successful as that at producing returns.

So I'm not saying that these are all fake in terms of an investment sector. I think Machine Learning will definitely be the future in so many industries, including finance. Risk Premia is also great technology. But what I'm trying to say here is that there is a crowding effect, there is a very high probability that there has been a dissemination of two factors – the "Volatility Factor" and "Trend Factor" across strategies, because of the time series that has been created due to the manipulation of flows from central banks.

My point here is that the passive players are not incontinent to the artificial flows which have been generated by central banks. And so, if they all look at the manipulated time series, they are going to be very likely to derive a manipulated model output from it. And that is the source of my skepticism.

So all of this to conclude that this market structure is dangerous. The positive feedback loops are created in such a way in which the public flows – that only buy, they never sell, they only buy - create this investment community which is successful because they kind of chase and turtle trade those central bank flows, in going long only, fully invested when not leveraged, and shorting volatility.

So they help the public flows in creating more and more higher valuations for markets. So they are all going in the same direction. And they reinforce each other. And they create further diversion from equilibrium. And they create also an illusion of liquidity and an illusion of diversification in the process.

Erik: I see, looking to the next slide, you're emphasizing that systemic risk comes not just from banks but also from funds. Please tell us more. What kind of funds are we talking about?

Francesco: Here, basically, our point is that – there has been some discussion in the past to whether or not systemic risk institutions (G-SIFI) should include also funds and not just banks. And the point was, no, they should not, because it's the balance sheet of the bank that matters when banks go under.

But in reality what we should see is that the link is those positive feedback loops that I discussed before, and the impact that they have on the asset management industry and how much they manage to create a one-sided investment community.

And so the point that we try to do in this slide is that, at present, 90% of the investment strategies out there are either "trend-linked" or "volatility-linked". So they are pointing in the same direction. That transforms a market risk in a systemic risk. Because the day the market falls, or the day volatility rises for any reason, that is going to exacerbate the market reaction. Not just because of valuations themselves only, but also because of the market structure itself. And how much the market structure itself is changed on the basis of that market dominated by

central banks.

And the other point is the concentration of risk on a few top players. You know, this is the month where BlackRock exceeds \$6 trillion in assets under management. And it's not just BlackRock. If you total the first eight players, you reach the staggering amount of \$22 trillion. It was only \$8 trillion in 2006. At the moment, the top eight players, which are all from the US, they total \$22 trillion. If you take just the first three or four, you are already at \$15 trillion, on a total global AM industry of \$29trn. So it's already a huge concentration.

And finally, because of leverage and because of turnover, 90% of the flows in equities are dominated by these "passive or quasi-passive" players. Which really wants to say that there is a huge concentration of risk in the markets right now, which is underestimated, and which transforms a market risk into a systemic risk.

Erik: Looking ahead to Page 15 – This slide really caught my eye, because what you're showing here is that European high-yield (that's junk bonds) are yielding less than US Treasuries. And it just blows my mind to understand. I mean, the notion of how it's possible that we've got negative-yielding sovereign debt around the world.

Well, you can explain that. You can say that there are people – some institutions by mandate have to invest in sovereign debt at any price. That pushes the price up to the point where the yield is negative. But nobody's mandated to have to buy junk bonds.

So who in the world is buying junk bonds and paying a price for them so high that they yield less than US Treasuries. How is that occurring?

Francesco: Well, it's flows, right? The answer is the flows from central banks. And the reflexive impact of flows from the private sector is exactly the positive feedback loops that I was referring to. Nowadays, whoever tries as an investment manager to price risk inside the portfolio, even in a mild format – like underweight the index, so, not being invested as much as they could - or, in a stronger fashion, being short like we do for example, because we want to stick our neck out and capitalize on the big adjustment coming at some point, underperforms. And therefore gets rewarded with outflows and redemptions. And those moneys go into players which don't price risk within the portfolio, at all. And they go long only, fully invested, very often with leverage, and being short volatility.

And this is what happens also in high-yield. You know, those flows, together with the positive feedback loops, is what justifies this level of high-yield. Nobody in his right mind would justify – you know, high-yield in Europe can be beautiful, but the price is wrong. The price could never be a better price than the price on a US Treasury.

And not only the price. But also what you get for a certain price. You know, like those high-yields nowadays – and the loans, you know, like part of the same market – they are lite-covenants. And they've got the lowest recovery rates in ages. So not only you get very little

yield for the exposure that you take, but you also have less covenant protection as an investor, and less recovery potential, expected in case of waterfall.

So it's really a poor investment if you look at the next ten years and not just at the next six months.

Erik: Moving ahead to Slide 17 – This is a topic that absolutely fascinates me, which is buybacks. The amount of easy money in the system that has allowed so many CEOs to just say, hey, I know how to push the stock price up of my own company, which is what I get bonused on. I'll just take advantage of the easy money and buy my own shares.

So the thing that really keeps echoing in my mind is when does the easy money get cut off so that these buybacks are not allowed to continue? Because, to me, if you want to know what's a catalyst that might change the direction of the equity market, it's when the companies that issue the stocks no longer have the secret weapon of being able to prop up their own shares by borrowing money in order to buy them.

When does this come to an end?

Francesco: You can argue, first of all, that it does not need to come to an end for the market to go down. The market should go down already because, at the moment, the market has even run ahead of itself in terms of the linkage to buybacks. As you can see in the chart, buybacks have already decelerated since last year, and the market has kept riding higher and higher. So it's even running ahead of itself on the passive flows that were pushing it in the first place.

The other thing that you see in the chart is that, funnily enough, the amount of yearly buybacks peaked at a very similar level to where it peaked in 2007. And in 2007, when it went down it went down in a very glorious fashion, with the overall market. So you could also look at the chart from different viewpoints, and like it from different viewpoints, if you are bearish like I am.

And then I would say, yes, they could probably stop. They will stop, I think. Or they will very heavily decelerate because of rising interest rates. Interest rates are rising. For so much that we heard from Janet Yellen in forward guidance, interest rates in the short-end part of the curve kept rising over the last two months. We saw two-year Treasuries yield moving up by 40–50 basis points in yields, actually, as of today – in just a month and a half, two months.

So things are moving. With higher rates, you can expect corporations to be less inclined to lever up to do buybacks.

The other thing I would like to say is that buybacks have got a linkage also to “income inequality”. And, like so much we have seen in the recent past, that can also be taken from a viewpoint of income inequality. You know, we have seen companies, like Microsoft for example, that in 2016 were able to do buybacks for \$40 billion. So you would imagine this is a

very healthy moment for the company's health. They were able to boost dividends. And, at the same time, within the same year, they were also able to lay off 10,000 people.

So, you see no positive spillover from buybacks and, for example, the real economy and the middle class. This is just an example, but there is a long list of companies that happened to have very similar outcomes.

So I would say there are a lot of reasons for which buybacks will probably fade away.

The first one is interest rates. The second one is income inequality. And the third one is the historical parallel to previous peaks in buybacks and what happens next.

Erik: Moving on, I see a topic that's very much near and dear to my heart. Which is this whole short vol trade. When this started there were a few institutions that should have known better that were shorting vol to take advantage of that contango yield in the futures curve.

Now we've gotten to the point where people I know tell me that they go to the restaurant and the waitress in the restaurant is short vol, through the ETF. That's one of those moments where you know there's a problem, is when the waitress in the restaurant is short vol and clearly doesn't have a thorough understanding of what risk is inherent to that.

Tell us – you've got several slides here – tell us the highlights of this short vol situation. And what could go wrong.

Francesco: The short vol situation is really like a pressure cooker in the market nowadays. It is not as big in terms of the number of billions involved with the strategy, but it is big in terms of the closeness that you got to a wipeout event. So what is surprising here is not so much that you can lose money – anything can lose money – but how quickly you can lose 100% of the money invested in the strategy.

The theory goes, for whenever you want to short volatility, that for you to really run into troubles you need to have volatility doubling up from current levels in a short manner. And the theory goes that this never happened in the past. And now the problem is that, at the moment, volatility as measured by the VIX, the S&P, is only 9.

So for it to double up it only requires for it to go to 20, right? And, guess what? 20 is the historical average. 20 is no less, no more than the historical average. So for it to move quickly into 20 it wouldn't be able to surprise anybody, because that's just where it's been most of the time in history. It's just the norm. It's not the exception.

So here you have a point in time in which if it ever was able to go to 20 – and to go to 20 just really takes the S&P to drop for any reason on a number of days, a short number of days, by 5% – so it doesn't take much.

And if it ever was to go to 20 – we calculate it here in this slide – that a number of ETFs linked to short volatility positions will get close to being wiped out. And wipeout is defined as losing more than 75% of the capital. And, sometimes, within contracts you have imbedded “liquidity gates” and “termination events”. Which means if you lose more than that, the note gets withdrawn.

So it is a really big problem. And the closest analogy I would find is the one of a pressure cooker, at present.

Erik: Well, in the interest of time we are not able to go into every single one of your slides in this deck, but I know a lot of our listeners are going to be interested in finding out more about your work. As well as what you do at Fasanara Capital. So please tell us, what do you do at Fasanara Capital?

And, for people who are interested in following more of your work, is there a website or a blog? What’s the best place to follow what you do?

Francesco: Fasanara Capital is a fund, a hedge fund, involved into a number of strategies. We have different vehicles, open-ended SICAV vehicles which are multi-strategy funds. And then Thematic Funds which look at specific investment opportunities.

At the moment our open funds, SICAV funds, are bearish. So we want to bank on the coming adjustment in risky assets that we see coming. We think this is an amazing opportunity as a fund manager. It must be great to live in a moment in time in which there are so great imbalances. It’s not for free, it’s not popular at the moment, it takes you to go through periods of underperformance. But, at the same time, that is the price you pay for you to be able to see the end of the movie. And we think the end of the movie will be a big moment of adjustment.

You can find information about us on our portal which is www.fasanara.com. We put our research up there, so you can find our most recent notes. And we will be happy to hear your thoughts on the ideas presented today.

Erik: Well, Francesco, I cannot thank you enough for a fantastic interview. Patrick Ceresna and I will be back as MacroVoices continues right here at macrovoices.com.