



Francesco Filia: Stock market CRASH entirely possible February 14th 2019

Erik: Joining me next on the program is [Francesco Filia](#) from [Fasanara Capital](#). Francesco, thank you so much for coming back on the program. Before we get into your slide deck, which listeners can find the download link for in the Research Roundup email, or on the home page you can look next to Francesco's picture. If you're not yet registered, look for the button that says [Looking for the Downloads](#).

We do have a great slide deck coming up. But before we even get into that, I want to just remind our listeners that the first time that we interviewed Francesco on this program, his prediction was a blowup in the VIX complex. Now, we tend to give a lot of credit to Chris Cole for making that call. Really, Chris is the guy who made that call the week before it happened, on this program, and it just felt so timely.

But if you go back and listen to Francesco's interview from several months earlier, he really predicted the same thing. So, Francesco, congratulations, you got the call right on the volatility complex blowing up as it did back in February of 2018.

Now, as I begin to look at your slide deck, as I get into Slide 3 here, you're really looking for what sounds like not just maybe things are going to weaken, but you're really looking for significant downside. A crash or a serious bear market.

First of all, am I correct to characterize that that is what you're saying here? And, if so, why do you see that coming?

Francesco: Thank you, Erik, for inviting me again. It's great to be back.

And, yes, it's correct. We are particularly bearish these days in the market. We are really being bearish already for two years. We see the probability rising of a major market correction. And you hear from various market participants that there is the risk of a recession hitting the United States and there is the risk of a multi-quarter bear market emanating out of it. And I believe it is a clear possibility.

But our own theory is more dramatic than that and it's got to do with the market downfall which happens in a more limited amount of time, which could really be a market crash.

According to our theories, the markets in December of last year were really going very close to the cliff and they could have seen a much more violent downturn. And for a much more violent

downturn, we speak about a market event, defining the market event as a drop in the S&P by more than 40% from the peak – the peak being around 2,900, which was touched in September of last year.

Such a market event was very close to happening. It would have equated to S&P diving fast below 2,000. And at levels as low as 1,500, possibly. So we're seeing and retesting the lows of a few years back.

I think that our view was wrong in December – because it did not happen. But it could happen again. You know, what we saw in December. And also what we saw in February was really a preview, a spoiler alert in a way, of what may come later on. Within the market, the setup is preparing for such a potential downfall.

Most of our bearishness is not linked to any specific trigger in the market. But it's more got to do with the structure itself of the market, which we see and which we have analyzed to be very, very inflammable, very concentrated across a small number of positions, and all being very long beta and very short volatility.

And the consequence of that high inter-correlation between investment strategies on a few large juggernaut actors in the asset-management industry resulting to a very deep and definitive market fragility – which we think may play out soon at some point over the next year or two and may lead to a market downfall.

The typical investor behavior is to look for triggers and for the cause-effect relationship. What we try to do is a little bit different. So, in addition to looking at each of the components of the market – going from overvaluations for bonds and equities, to over-indebtedness of the system, going into the end of effectiveness for quantitative easing, in addition to looking at the companies – we tend to apply a conceptual framework, which is using a complexity theory. So the analysis of complex dynamic systems.

And by analyzing the system of a whole, as opposed to its components, we think there is a lot that can be learned. And, in particular, what one can learn is tools that can help predict the proximity to a market crash – so the proximity to a major downfall – utilizing some of the teachings of complexity theory.

And this is what this presentation is all about and the slide deck that I sent through.

Erik: Well, I want to push back on one aspect of this. First of all, with respect to being bearish on the stock market, you're preaching to the choir. And certainly a lot of our smartest guests that we've had on this program have said a lot of the same things: end of the business cycle, late-cycle dynamics, so many signs in terms of the yield curve almost inverting and then bouncing as it typically does before you get into real trouble. There are so many reasons to be bearish. So you're preaching to the choir there.

But you're not just bearish. You're talking about an event which you believe would be short duration, a sudden crash as opposed to, let's say, a multi-year bear market.

Why specifically do you think that the ingredients are there for a crash that plays out quickly as opposed to a period of several years of weakening market conditions?

Francesco: Again, I'm a bearish and I would also be fine with a multi-quarter, a multi-year bearish market of the classical type. But I believe that we are into a market situation which resembles what we have seen during the Lehman years, what we have seen during into 1929, to a lesser extent what we have seen during 1987, and to a lesser extent, also, to what we have seen in 2007 during the so-called Quant Quake.

So what we have in front of us is a one-of-a-kind market environment which has got common features to all of those big market crashes in the market which have happened in a fast fashion. And I think, therefore, that the shape and can be similar to those unfolding very quickly and very violently.

If you remember – you know, most of our bearishness, again, is based on the market structure. The fact that there is so much of low diversity. Everybody in the market doing the same things. After a prolonged period of rigged markets, really, you know, heavily affected by quantitative monetary policies but also by negative interest rate policies and zero interest rate policies.

And this monumental intervention in the market has created all sorts of positive feedback loops, all sorts of reflexive behavior on the side of private investors, including also the passive strategies – that, effectively, a lot of these strategies have become passive or quasi-passive with different levels of stiffness to their decision-making process.

So they are all quite automatic, based on what happens. And this goes from risk parity to risk premium to ETFs to low volatility to CTA, trend following, factor investing, and all of these sorts.

So we think that if you look at the market structure itself, in a way it is really very close to a tipping point and we think that these could cause the most severity of the issue.

And if you look at the past, the analogy that we like the most is the one of 2007 – although it didn't survive for very long at the time – but in 2007 there was this so-called Quant Quake. It was a point in time in which some quant-driven strategies lost 30% in a very short fashion, in a matter of a few days. They were very lucky to then recover that fallout.

But, still, to date nobody really exactly knows why they lost so much so quickly. Including also the very famed Goldman Sachs "quant" fund.

And that gives the idea on a small scale of what can happen when the structure of the market is concentrated and is overexposed to a few trades only. Something happens on one corner of the world and there are implications and effects all across and within the pieces is very relevant

right now.

On the other end, we apply complexity theory. I am not a theorist, but I'm really only trying to be a complexity thinker in a way, which is really the analysis of systems in transition. And so you should read the system in transition as the probability of materializing systemic risk. Systemic risk is really the probability for the market system to go into a transition. Which means that a very sudden change, a chaos outburst, something really violent and really material.

And if you look at this market system as a whole, forgetting about the single components of the system, you can recognize a few of these commonalities to systems in transition. In our analysis and in our also quant research we have analyzed a few of these features, and so there are quite a few things that tick the box of systems in transition.

This is really something which is non-traditional. You know, the traditional way of looking at the markets is to look at indicators such as P/E, price earnings multiples, when it comes to equity. Or other traditional measures when it comes to the debt market in terms of net debt on EBITDA or debt on the GDP metrics when you talk about the government.

And all of those are quite traditional measures that can always be taken into account. But what we think is really dangerous today is that you have a synchronicity across a number of potential dimensions of expansion of the system.

And when the system cannot expand any more – in terms of valuations, in terms of over-indebtedness, in terms of quantitative easing – when the system cannot expand any longer it starts to behave very weirdly. So it starts to show problems, and then goes into trouble, and potentially into a phase transition zone which is what can really give most of the trouble.

So just to make an example, you have today a twin bubble. So you have simultaneously a bubble in equities in the US and a bubble in bonds in Europe and Japan. Bonds in Europe and Japan, they are trading at negative yields or zero yields. Equities in the US are still trading the CAPE multiples, Shiller adjusted multiples, which are very close to 30. So they are still very, very expensive.

So differently than into 1929, for example, or differently than in 2007, here you have a moment of overvaluations which combines equities and bonds. In 2007, you had one or two buffers that they could soften the impact of market turbulence, indeed of a big market crash.

The first buffer in 2007 was bonds themselves. The valuation on bonds could expand further. So the yields could drop and therefore the price of bonds could rise. And that was a buffer for portfolios. It was a buffer for balanced portfolios. Because, at that time, in which investors were losing on the equity side, they could make money on the bond side. And that, in systems theory parlance, is a buffer. It's something that saves the day at a moment of great panic.

The same was true also, by the way, in 1987 when the market fell by 20% and then 30%. Interest rates that had just gone to 10%, they dropped to 7%. So there was a rally on bonds as the equity market materialized.

The other thing that could happen in 2007 that cannot happen today – or the other couple of things – one is quantitative easing. At the time it could be introduced, such an extraordinary monetary policy lever. Today, it wouldn't be the same because it would be QE4 – already the 4th edition for something which has got a very famous decreasing marginal capacity to impact growth and also the stock market itself.

And three, in 2007, you had the debt that could expand further, especially at the public entities level. It was a problem having to do with the private sector. And now the problem got transferred into the public sector. But, at the same time, you had the expansion potential on the debt side, which today you don't have.

So, today, if there is a market crash in equities, it's going to be much more damaging to everybody, to most of the balanced portfolios. Because of the bonds they cannot rally. Because the central bank cannot intervene in the same shape and fashion – or, it can still, but not yielding the same type of effectiveness and results. And, at the same time, debt is also a problem of its own, so even the dimension of expansion into over-indebtedness is not available.

And that's why we are looking at systemic risk today in a very serious way. And we think the systemic risk today is higher than it has been in the past, including the Lehman crisis.

Erik: You've got an excellent series of charts and graphs to support the many excellent points that you're making. I encourage our listeners to peruse them at their leisure. But I'm going to skip ahead in the interest of time to Slide 16 in your deck where you talk on the title about Tipping Points, Crash Hallmarks, and Butterflies.

Talk us through this. If we take the arguments that you've just made, it looks like what you're saying here is you've got to really look for where are the signals and triggers that are going to tell you when a big move is likely to happen.

Talk us through this and maybe the next couple of slides where you describe this process.

Francesco: This is our conceptual framework. So it is utilizing complexity theory, as I said. I would probably term it complexity markets or complexity finance. And in terms of why is it relevant? I would say that we are used in the market parlance to utilize the traditional asset-based metrics. And that is really a result of, if you wish, the efficient market hypothesis.

The efficient market hypothesis has been with us for more than a century, but was really introduced in the '60s. And, according to the efficient market hypothesis, all information is embedded into market prices. And you can look at investor behavior as being efficient and rational.

In thinking about the efficient market hypothesis, you get into a territory where you can think of P/E multiples for equities, you can think of net debt on EBITDA or debt on equity ratios for public debt, for example. And so on and so forth. Thinking about it, for example, you can identify today that there is a huge problem with leveraged loans in the US, for example. Or junk bonds plus leveraged loans plus CLOs.

But that is still a very traditional way to look at the markets. Efficient market hypothesis has been proven to be flawed, because they could really not justify what happened, for example, during the Lehman crisis.

A big improvement to the efficient market hypothesis has occurred with behavioral finance. The last five or six Nobel prizes for economics have often been behavioral scientists like Robert Shiller, George Akerlof, Kahneman, Thaler (the most recent one) – and they clearly do something about enriching the efficient market hypothesis because they talk about mental quirks in the investor community – things like the recency barriers, the Monte Carlo barriers, the hot hand barriers, and things like that. They can justify investors doing irrational things.

What we think is still missing, moving from the efficient market hypothesis to behavioral finance, is complexity theory. Complexity theory helps a great deal, because you look at the whole all of a sudden. And the components of the systems are no longer the primary focus. You look at the whole.

Looking at the whole means you should look saturation points for the system as a whole. Once you have reasons to believe that the system has reached a saturation point, then you look at the early warning signals. So you look at those signals that can come in confirmation of your theory.

If they do confirm your theory, then only at the end you look for the triggers that can kick in the autolytic effect, so they can kick in a market crash, for example. And the triggers are of the traditional nature. So they can be leveraged loans in the US. It can be the Fed hiking interest rates. It can be China going into trouble, as they have more than a trillion-dollar-denominated of foreign-denominated bonds to roll within the next year or two.

But all of those are traditional indicators and they come only at the end of the analysis. Before everything else, you look at the system. And this is what the tipping point analysis does.

What Slide 17 does is the tipping point analysis. So to look at the potential direction of expansion of a system, those directions of expansion, they can allow a system to not go into transition for a while longer – to postpone the day of acknowledgement, the day of reckoning for the market saturation.

But the problem is when all of those happen at the same time. And this is to provide a framework to understand, what are those dimensional expansions? What is able to buy time for

the market system as a whole?

And, obviously, you have things like valuations. For example, as I said during the Lehman crash, bonds could save the day because bonds could still expand in valuation terms. They could still rally. Yields could still fall.

Today you have the problem twin bubbles. You have not only equities which are overvalued, especially the largest equity bucket in the world, which is US equities. But also bonds are overvalued, especially the largest bond universe in the world after the US, which is Japan and the European markets.

And so you have a problem of valuations. These alone could be a reason for many market participants to call the bubble, and therefore the risk of a selloff. But this is not to be taken in isolation. What really matters is the synchronicity of this risk on valuation when coupled with, for example, debt.

Debt on its own is dangerous enough. Here you have many metrics that can be called upon. You have the Rogoff and Reinhart debt saturation points and debt tolerance limits, you have the BIS debt metrics, you have the Minsky points, the Hyman Minsky of 1977. And obviously they also give a sense of where over-indebtedness cannot expand anymore because we cannot even pay for the interest payments on the previous debt, let alone debt repayment.

All of those metrics are relevant. But I believe that they are even more relevant when they are coupled with the valuations, and then when they are coupled also with the rest.

What could save the day if valuations are too expansive, if debt is too high? Quantitative easing. Quantitative easing is an external agent. And if you look at it from the viewpoint of systems theory, it's really the second law of thermodynamics which says that *within an isolated system, entropy always rises, or never falls*. Which means, really, that things tend to become more chaotic over time.

Unless there is an external agent like quantitative easing after the Lehman crash. What you have seen is that after the Lehman crash there was a big rally because QE could be introduced.

Bonds in the meantime had rallied, so they had saved some of the pain. And debt could still expand.

Today you have a problem because all of the three, they seem to be hitting capacity constraint. So the system becomes saturated and, at some point, keeps a lot of potential energy. At some point, after the tipping point, the critical threshold has been surpassed. Then there is a problem, because there is a potential for transition.

Cash – as the end, cash is also another potential expansion of the system. If you want to save the day, maybe you should spend some of that cash that is on the sidelines. And here, in our

research, we have tried to show that there is not as much cash on the sidelines, as it is often portrayed.

On Slide 18, you have the basin of attraction. If you look at the market as a complex system, in systems theory, you typically indicate the state of the market as a red bowl within a basin of attraction.

And if you look at the left-hand side, you have the basin of attraction after Lehman, you could say, where there was a valuation expansion capacity provided by bonds, and when there was also debt expansion capacity. So that potential for expansion made for a very wide basin of attraction, which means a very stable system. And a system that was not easy to go into trouble again.

At some point, you have the QE tsunami that was pushing the state of the systems into an unstable equilibrium, which is the picture on the right, where you don't have any more potential expansions for bonds because bonds have hit zero bound. So there is very little to argue around it. Bonds cannot rally. That is already by itself, for most balanced portfolios, they have lost a big measure of buffer against systemic risk.

Not many retail investors, for example, have appreciated how much of a problem there is in that space. They are still seeing from the last couple of years capital gains on the bond portfolios, which are purely the result of rates having gone below zero. And they still expect those capital gains to be able to reproduce themselves in the future, which is never going to happen for mathematical reasons. Because rates cannot deepen below zero by much and for long.

And then the other measure of expansion is debt deleverage. That cannot expand any further. And the cash is, for the most part, spent.

Which means, from systems theory, that there is low resilience and a high risk of critical transformation. And this is what the tipping point analysis does. And, effectively, it is a way to visualize the systemic risk in the systems by looking at these various potential directions of expansion.

Erik: Okay, help me understand specifically why the tipping points or the triggers are right now. If I go back to Slide 17 and look at these various different bubbles you have here, okay cash stretched, everybody is all in. That's been true for two or three years. Valuations stretched to ridiculous levels. That's been true for two or three years. Debt stretched beyond belief. That's been true for two or three years. Fed's out of bullets. That's been true for two or three years.

And, to my astonishment, the market hasn't crashed yet. So it seems like you think something has changed and it's finally upon us. What specifically is telling you that now is the time?

Francesco: I thought the time was last year or even the year before. I was wrong, obviously. But the reason why I was wrong, I believe (to justify myself), is because of the tax cuts from the Trump administration.

For example, on Slide 29 we speak about that and we equate that to doping. The tax cuts had an effect to impact the market in a way in which, indeed, by boosting earnings for companies and therefore mathematically pushing stocks even higher and buying time for the market to postpone further this day of reckoning.

You see in this chart, for example, this amazing disconnect between the unemployment rate and the fiscal deficit as % of GDP, which is something that is not easy to see. This chart dates back 70 years, and there has always been a pretty decent correlation between the two. And it's amazing, astonishing, the spread-out, the disconnect that we are currently seeing.

It has got to do, in my personal opinion, in addition to monetary steroids – late in the cycle you had the fiscal steroids and the market took it in and the immediate effect was also, for example, the tax reform had the further effect on buybacks. Buybacks in total within the last several years in the US have been in excess of \$5 trillion. So it is a very decent measure.

Now buybacks have probably run out of steam because the leverage ratio of the US corporates are worse than in the pre-Lehman period, and also because valuations are more excessive. But I believe that, for the last couple of years, that you can make the point that that was really what was keeping the market afloat and postponing the day of reckoning.

On Slide 27, this is the slide that we call Early Warning Signals. We go into describing why we think this is going to be ahead of us, and not too far in time. I wouldn't say imminent, because, to me, if it happens this month or next year is irrelevant. If it is about to happen, whatever you do in between times is going to be like picking up dimes in front of a steam roller.

So, to me, not to be sure about the day and the week and the month is irrelevant. It's still – if your determination is that we live within a systemic risk, the rational decision should be to step out – if you are most of the market's participants – or to be short if you are somebody like us that want to capitalize and bank on the market event.

But surely not to keep being long.

The fact that most of the institutionalized, the management, world stays long is not really because they don't believe in this view. It's because they are not paid to spot a bubble, which is part of the reason why systemic risk typically tends to compound and reach the stage until which the bubble goes into deflation – and it can be a deflationary bust.

Erik: Let's talk about how this would actually play out and what the consequences would be in other markets – let's suppose your scenario of a stock market, either a dramatic bear market selloff or an outright crash where we go dramatically lower in equity prices. Now,

historically, the normal situation when that happens is that bonds rally just tremendously because the safety trade is out of equities and into Treasury bonds.

But when Treasury bonds are already in a bubble, as you described earlier in this interview, where does that leave us? Does that still mean that bonds are the benefactor? Or is there a potential that they both end up selling off? And if they're both selling off, where does the money go? What goes up?

Francesco: First of all, typically, when the equity market sells off the bonds rally. Unless bonds have rallied the most already and the last most of the rally is potentially behind them, which is typically the case for bonds in Europe and in Japan.

In the US, you can argue that bonds can still rally because they can reach the zero level and also go negative. The US is the largest bond market, but not by far when compared with the European bond market and the Japanese bond market.

So for a lot of balanced portfolios globally, the bond rally is not able to help by much. A.

And B, it could even be, as you say, that the bonds don't rally. Because let's not forget that bonds – given a fundamental analysis of bonds – they should have reacted to where GDP is, to where inflation and inflation expectations and inflation premiums on top of it are. And these days you could make the argument that the deflationary boom and then the deflationary bust have already occurred. And there could be a moment in time in which we see inflation picking up.

If anybody is to judge by the Taylor rule, or if anybody is to judge by the job market, there could be a case to be made that inflation has bottomed. Also what I like to mention is that obviously you had that time when inflation seemed dead and then, all of a sudden, it was on a rising path. It was at the end of the 19th century when, similarly to today, you had de-globalization.

Globalization was losing steam and all of a sudden you were talking about trade barriers, trade wars, and trade confrontations – a period that eventually led to the First World War. And you see that in a moment of time like this it could well be that inflation picks up.

The other possibility for inflation to pick up and therefore forbidding bonds from saving the day and so provoking a selloff in bonds at the same time as equities sell off, it clearly has got to do with quantitative easing.

It has been rumored by various parties that the next shape and form of QE may not be money to banks for them to buy all these mortgages and sometimes equities like in Switzerland and Japan, but it may be people's QE, so a QE which is more intended to provide for a universal basic income, for example – given the shape that populism is taking across the globe, including most recently in France.

And I believe that also possibly, if the market was ever to discount that in advance, it would definitely equate to more inflation across the globe.

And a big inflation scare could definitely be one of the all-bets-are-off-type scenarios. If, for any reason, tomorrow there was a bad inflation print out of the US or Japan or Europe, I believe it would be serious trouble for the markets because all of a sudden bonds would be in the doghouse and equities would surely, in my opinion, react very negatively to that.

Erik: Francesco, for aggressive investors like yourself who are comfortable speculating on the short side of equities, where do you think the play is? Is it in the S&P? Is it in the Nasdaq? Is it individual issues like Tesla, say, that a lot of people think is very overvalued?

How do you play this if you are willing to speculate on the short side?

Francesco: There are a few things that you can do. Now, we believe that the market may fall in a fashion where it's going to be very difficult to capture the moment. What we have is a five-pillars investment strategy which tries to cover all potential scenarios, or at least these five potential scenarios where the big downfall materializes.

And some of them have got to do with shorts outright. And those short outright, yes, they are involved primarily in equities on the US markets. So we look at the S&P, we look at the Nasdaq, outside of it we look at the Nikkei, and we look at the DAX in Europe. So I would say pretty much scattered across.

And we also have idiosyncratic stories in the commodities space, in the energy and power space, which have got to do with single stocks.

And then we have another couple of pillars which have got to do with volatility. So we have longer volatility because, typically, in a downward scenario, volatility picks up, except if it is a flash crash.

There is also the theoretical possibility that the market readjusts to the downside – let's say 20%-off–30%-off in a short fashion and does not pick up from it – which means that the volatility, yes, it picks up. But not by much, which is really what happened in the last quarter of last year.

Where differently, in February of last year, the market tanked but volatility did not pick up. The VIX was really only at 20%. And so it was not measuring much happening on the vol side. So that is also to say that we cannot trust vol alone to save the day if a big crash in the market materializes.

So then we do all sorts of different things. For example, we do what we call a gamma replica. So we try to replicate the provides of puts by replicating the building blocks of puts in the markets without spending all of the premium up front.

And then we do also – and this is the fifth pillar of the strategy – we look for fragile ETFs. What are those? Those are ETF, instruments, or other passively traded instruments which are oversold liquidity and diversification. So the so-called ETFs that have fake liquidity and fake diversification.

Last year, for example, the XIV ETP was one such example where, in February, very quickly VIX went on a single day in February from 13 to 20, closing the day at 20. We expected at 20 to see the ETF had been withdrawn to have a major repeat event and an early termination event. And so it happened that the cash closed and, in the space of a quarter of an hour, VIX-traded contracts were in excess of 280,000 which was five times the previous peak historical – and that instrument was retired.

That ETF or ETP was a fragile ETP. So it was not designed to sustain a certain market event. And that is only one spoiler alert for many more things that could happen to a lot more instruments which have typically oversold diversification and liquidity.

And so we have a screening of 10–15 of them which are going to run to trouble if there is really a market environment for the market to go down 20–30% in a short duration.

Erik: There is a backdrop of changing politics behind all of this. If I look at what's going on in the United States now, we see younger generations favoring socialism over capitalism very openly. The Democratic Party is moving toward the Democratic Socialist Party of America. We see in Europe the yellow vest movement.

It seems like populism is on the rise and there is definitely a trend toward more socialist thinking in what younger generations want for government, an attitude of acceptance of larger government and more control by government.

How do these trends fit into your overall investment thesis and market outlook?

Francesco: They do very much because like in a way we thought quantitative easing was – well let me say that populism is definitely the elephant in the room.

I remember a trend line that we put in one of our research notes that was basically showing the linear trend of rising populism. Particularly in Europe at the time, but it's really a global phenomenon. It was a chart from 2015, and it was showing that by the following year, which was 2016, the trend line was expected to cross 50%.

And if you look at the chart, what happened in 2016 obviously, you had Trump in the US, you had Brexit in Europe, you had the failed Italian referendum already at the end of 2016 (if I'm not mistaken. And if you are to judge from that linear extrapolation, you would say that populism today is around 60–70%.

And guess what? In countries such as Italy, it is indeed at 60%. If you couple the voting polls for the Northern League and the other political party of the government, you sum them up at 60%, so you are well in excess of 60%. This is clearly a global phenomenon.

What I would say is that populism is due to some structure of forces at play. It has got to do with globalization, or the extreme version of globalization which has been proposed in the last 10 years.

It has to do with the forced industrial revolution – so this new world where a lot of the middle class is not anymore useful prospectively for the future.

But it has got also to do with monetary policy making.

It has got to do with the twin bubbles of equities and bonds.

It has got to do with the quantitative easing – creating all these financial assets and inflation and making the rich richer and the poor the same as before – so, relatively speaking, poorer than before.

And there are two measures for that, two examples for it. 2016 was a very good year for Microsoft because they could spend in buybacks \$40 billion. They could boost the dividends. And yet, during the same year, they shed 10,000 jobs. So this is an example that should be taken into account.

There are a long list of similar situations of companies where the trickle-down economics really failed. And where the portfolio channel theory of Ben Bernanke clearly failed. And these should be taken into account.

And the other example that I would put at disposal is the fact that today in the US the median house costs \$300,000. The median wage is only \$30,000. So it is 10 times the wage, what you need to spend to buy a house. It was only 2 times in 1950.

So, obviously, there is a problem today. And if you go out of the realm of politics and stick to market commentary, when it comes to market commentary and policy making, we should admit that at no point in recent years a certain decision of policy making has been linked to populism or to income inequality.

The policy makers, they never ask themselves, at this very stage, if a certain measure like QE4 or QE-forever out of the US, out of the Federal Reserve, for example, would increase or decrease income inequality. And I think it's about time that it does.

I think that those questions should be openly asked by policy makers. Or I think it should be in the utility functions of policy makers. and before they decide to do something, to ask themselves: Am I going to increase one of the big fault lines of the system right now? Which is

income inequality. Or am I going to decrease it? And the decisions should be taken only once that is taken into account. Which is not clearly happening right now.

So, definitely, social risk in the form of populism can create regime change which can unfold in various different ways. I think that the most easy to predict for the future – and this is a research of ours from 2016 – is for universal basic income and people's QE (as it has been called). It is very likely, if the current stagnant growth outlook stays, for QE to have a different shape and form – so to happen again but in a different format.

And if it happens, that different format, it's surely going to be inflationary. It's surely not going to be so benign to asset prices because it can equate to a lower bond market and troubled equity market.

Erik: So if we were to see – and it sounds like your expectations are very in-line with my own – at some point if there were calls where the populist outcry was too strong and people just said, look, if we're going to conjure money out of thin air, it should be helicopter money. QE for the people. And it should come in the form of payments to people in need, not bailouts for Wall Street.

And if that were rigidly enforced by various countries around the world, if they were all to experience a change where people just demanded that, it sounds like inflation is the most immediate and obvious risk.

What other consequences would exist in financial markets for various different asset classes, were that to occur?

Francesco: We typically think that we have never seen it before and stuff like that. But, really, the problem with income inequality dates back centuries and centuries, if not millennia. There is this nice book of Will and Ariel Durant, which is called *The Lessons of History* in which they say that progressive societies very often reach a point where the strengths of the number in the many poor rivals the strengths of the ability of few rich.

Because it's normal for income inequality to materialize because the skill distribution is different. But then at some point, as a tipping point is reached, there is an unstable equilibrium which generates a critical situation – so it's almost like the Durants were complexity theorists.

At that point two things can happen. Either the legislation redistributes the wealth or the revolution redistributes the poverty. It seems like now we are at a crossroads where the revolution is kind of unfolding. But it would be bad for everybody.

Or you could have the legislation which redistributes the wealth in the form of people's QE, for example.

I don't have the answer to your question nailed down, but I think that definitely inflation is the

biggest specter out there. Because if you include this income inequality decompression with trade wars and more nationalism, as it is, I think, only the beginning – we are just at the beginning of this trend globally, starting with the US–China confrontation, but it’s really only the beginning.

And I think that if you couple the two things, inflation is really the big scare out there. Also because it’s going to eat bonds trading at zero yield. For the Bund 10-year government bond, which currently trades at 10 basis points, to double up or move ten-fold, it takes very little. So the amount of damage that can emanate from that is really, really strong.

The other risk that I see has got to do with the US dollar. If these trade wars materialize, if it is true that income inequality is going to decompress because at some point people will want to avoid the revolution, then there is an issue also with the US dollar. Because, in my opinion, the US dollar is already on a path of strengthening, approaching 97 as we speak. But typically the US dollar represents 25% of global trade flows, but 60–70% of global reserves, FX reserves. So, typically, the idea is that, as this redistribution of reserves happens, the dollar gets weaker.

I believe the opposite long-term trend can take place, where the dollar becomes much stronger as a consequence of deleveraging happening in the US – it’s not happened yet – as a consequence of trade wars. As a consequence also of the fact that it is not going to be as heavily utilized as it has been right now, to the benefit of other currencies, including the Chinese renminbi.

This stronger US dollar has all sorts of negative implications for a lot of asset classes, including emerging markets, commodity plays, and other things. So I think that that is another thing, if you ask me, that needs to be taken into account.

Erik: Well, Francesco, I cannot thank you enough for a fantastic interview. Before I let you go, please tell our listeners where then can follow your work at Fasanara Capital and learn more about what you do there.

Francesco: We have everything online on our website, which is fasanara.com. We publish our research notes and our quantitative indicators which try to detect the proximity to a cliff or the proximity to a systemic risk, which we call the System Resilience Indicators. And we are not very public about our investment strategies. You will not find much on the web. But please reach out if you want to hear more.

Erik: Thank you so much Francesco. Patrick Ceresna and I will be back as MacroVoices continues right here at macrovoices.com.