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COMMODITY FUTURES TRADING COMMISSION

GLOBAL MARKETS ADVISORY COMMITTEE MEETING

Washington, D.C.

Thursday, October 9, 2014

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CHAIRMAN TIM MASSAD

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P R O C E E D I N G S

(1:38 p.m.)

CHARIMAN SERAFINI: I am the Designated Federal Officer and Temporary Chair of this Committee, it's my pleasure to call to order the 17th Meeting of the GMAC.

Thank you, everyone, for coming today. As a quick reminder I know we have a lot of veterans here at these meetings, and we have some new faces, just remember when you want to talk into the mic to press the red button. Talk into the mic, and then press the red button to turn it off when you are done speaking. I want to also remind you, this is being webcast and recorded, so just and FYI there. With that, I'll turn it over to Commissioner Wetjen, the Sponsor of the GMAC.

COMMISSIONER WETJEN: Thank you, Ted. Thanks, everyone, for being here today. It should be an interesting meeting; we've got a couple of good topics today, the unifying theme being currency. The first instance, the more traditional bond issue, related to more traditional fiat currencies, and then on a second topic, something a little more novel, related to some developments in the derivative space, reaction, what's been going on in the crypto currency space; so, looking forward to the second Panel, as well as the first Panel, as we dive into this.

I also have a full, written statement that will be on the website shortly, and I don't want to read that here, but I just want to say real quickly before we turn it over to the other Commissioners and the Chairman; Chairman Massad, I want thank our special guests from abroad, from both ESMA and the Bank of England. We've got Rodrigo here with us, so it's a real pleasure to have you, and we have David Bailey, from the Bank of England.

David and I were joking earlier, this is his third GMAC Meeting, so he's going three for three this year, so we are about to make him an Honorary Member. But we appreciate, as always, his contributions, and glad he could be with us today.

I want to thank Chairman Massad for his help on developing the agenda for today. I want to thank him for being here, and I want to thank Commissioner Bowen for being here as well; both of their first GMAC meetings. And with that I will turn it over to Chairman Massad, and look forward to the discussions. Thanks.

CHAIRMAN MASSAD: Thank you very much, Mark. And I want to thank you and all of your staff as well as all of our professional staff, for the tremendous amount of work that goes into a meeting like this. One often doesn't see it from the outside, but I know how much it takes to pull something like this together, and you've done it in very short order. And I also want to thank all of the participants, your presence and input is very much valued, as well as all of our special guests, and all of the members of the public who are here.

Our Advisory Committee has provided a valuable forum for discussion of complex and evolving market issues, that are relevant to our work here, and it is very, very valuable to us to listen to a broad variety of viewpoints as we consider these. The advisory committees of course are only one way that we get input, but they are a very important way.

The topics that we will discuss today are both timely and important. The first session on non-deliverable forward, should be very helpful to us as we consider whether to propose mandatory clearing for NDFs. Now, as probably most of you know, under the law, pertaining to swaps clearing, the Commission must consider several factors to determine whether it should mandate clearing for a swap. And those include, whether there is sufficient liquidity to support clearing, whether the necessary rules and infrastructure are in place, and what are the effects on the mitigation of systemic risk, and on competition?

Now, the meeting we are having today is not a formal process to do consider those factors, it's really just an opportunity for us to learn more about the NDF market, so that we can consider whether to go forward with the rule. If we decide to propose a rule, then of course there will be opportunity for everyone in the public to give their views.

Considering whether to propose a rule for further clearing mandates, just also underscores the importance of working out the cross-border issues on clearinghouse recognition -- regulation and supervision. And I also welcome our colleagues from ESMA and others who are here. Europe has not yet recognized our clearinghouses as equivalent. I believe they should because our clearinghouses meet international standards.

They believe, and they've asked that we look at whether we can make some changes to our regulatory approach to clearinghouses that are located in Europe, but also are registered with the U.S. To my mind the existing dual registration regime has worked very well for years, and I kind of believe this is the situation of, if ain't broke don't fix it, but we have agreed to look at whether there are ways that we can further harmonize our rules, and our regulatory approach. That is a complicated undertaking, it takes a little time, but I think we are both working on it in good faith.

And I'm also very pleased that I believe that they've decided to postpone the imposition of higher capital charges on European banks participating in clearinghouses that aren't yet recognized, that pertains not only clearinghouses in the U.S. but elsewhere. I think that was threatening to create fragmentation in the markets, and so it's a good thing that that's been postponed. My own view is dual registration has actually been source of the growth of the global markets. It's been a foundation on which we've grown these markets for many years.

The second topic pertains to Bitcoin, and while the development of digital payment systems raises many issues outside our jurisdiction, on area within our responsibility is derivative contracts traded on our designated markets or SEFs that are based on Bitcoin. And today we have an opportunity to hear about that and related issues.

And I kind of approach this subject in the following way. You know, innovation is a very vital part of our markets, and our regulatory framework is designed to encourage it. At the same time, our regulatory framework is intended to prevent manipulation and fraud, and to make sure our markets operate with transparency and integrity. And our responsibilities at the Commission are ongoing in that regard. The fact that a contract may be traded on a market does not mean that we have endorsed it, as the staff will explain more, later today.

And as with all new developments we must remain vigilant, and we'll continue to evaluate contracts and trading activity over time. And we will, of course, coordinate with our colleagues and other regulatory authorities as appropriate. So I think it's helpful to keep all that in mind as we talk about these issues.

So, again, thank you all for being here. Thank you, again, Commissioner Wetjen, and we look forward to a productive discussion.

COMMISSIONER WETJEN: Commissioner Bowen?

COMMISSIONER BOWEN: Great. Thank you; and good afternoon, everyone. First I'd like to commend Commissioner Wetjen and GMAC members for the time and thought that you devoted for today's timely discussion, and of NFDs and Bitcoin. I look forward to hearing the Committee's views about the Commission's jurisdiction over Bitcoin, the clearing of NDFs, and the risk involved that the Commission should consider. Clearing is a central piece of financial reform.

As I listen today, my focus will be mainly on two things; taking a commonsense, practical approach to ensure that American businesses remain competitive in a global marketplace, or also assuring that we analyze risk thoughtfully in order to protect the American public. Thank you all for attending today, and I look forward to meeting most of you.

COMMISSIONER WETJEN: Thank you, Commissioner Bowen. Commissioner Giancarlo I believe is on his way. I received an email from him earlier; he's in-transit, so hopefully he'll arrive in time for the -- before the meeting ends. One other thing, by was way of introduction, I should have said this earlier, we have with us today, some new Sub- Committee Members. After consultation with some of the other GMAC members, and recognizing that both GMAC and the Commission could probably benefit from additional specific expertise in foreign exchange, we decided it would be sensible to form a sub-committee of FX experts.

And so we have those folks with us today, and as we work through the questions during this first session, I think we'll direct a lot of them, at least initially, to those Subcommittee Members so they can rely on their expertise, and help us work through these issues today, as well as after today.

The other thing I would mention is that

I've asked the Sub-Committee in consultation with Chairman Massad, I've asked the Sub-Committee to produce a written recommendation. I think, technically, it goes to the GMAC, but obviously it will be something referred to by the Commission, and we are asking them to provide a recommendation in response to some of the key questions that we've included in the agenda today, and look forward to having the results of that work, and as I said, I expect it will be guided by it quite significantly.

So, looking forward to continue the dialogues after today, but for now, I think we should get started on the first session, the NDF Clearing Mandate. We don't have a specific recommendation in front of us, but I think it's a terribly-kept secret that there has been some staff work done on this, and so, without going into all the details of the recommendation, because it's subject to change, I think one of the first questions we have to think about with this mandate, is which currency pairs should we be focusing on?

There are a number of -- there's a number of trading activity in a variety of different pairs, but the liquidity characteristics are different depending on the pair; and also depending on the tenure. But starting first with the -- with the topic of -- what the appropriate currency pair is going to be, maybe that's something that we can tee up as the first question.

But before that, Ted is reminding me, we should probably hear from The CFTC Staff who has a presentation to deliver to us. Brian, do you want to start?

MR. O'KEEFE: Good. Thank you. And thank you to all the GMAC members who are here today, is sort of a unique opportunity for staff to get your feedback, as we think about, perhaps, you know, putting a proposal together for a new asset class. So this is -- this is certainly a unique opportunity and we very much value that feedback. And I guess the other thing is we are thinking about creating a clearing requirement in this new asset class to also think back, what's some of the issues may have been with regard to the implementation of interest rates, or CDS and, you know, how do we avoid some of those issues as we think about putting this proposal together. So, very much look forward to your feedback.

COMMISSIONER WETJEN: Thank you, Brian.

MR. O'KEEFE: Here we go. I just -- I have a very brief presentation to just run through, you know, sort of, what we are thinking about and why we are thinking about it at this point. So, NDF's foreign exchange, forward contracts, unlike physically sell the FX forwards, the parties don't actually exchange or deliver the two currencies. Instead, these are cash-settled contracts, generally, done in U.S. dollars by comparing the exchange rate that was established on the date of the contract, with the spot rate on the fixing date, and then you have a cash- settled payment, as I said, generally in U.S. dollars.

These contracts can be used to hedge or

speculate risks, and they are generally done on currencies that for -- that have restrictions that do not allow for the offshore delivery of these currencies. NDFs are explicitly included within the Commission swap definition. Unlike the FX swaps, and FX forwards that were subject to the Treasury exemption, NDFs remain part of our swap definition.

The Chairman touched upon, you know, how our analysis works, and 2H of the Commodity Exchange Act, sets forth the five factors that we need to look at when we are considering a determination for mandatory clearing. Those included outstanding notional amounts, the trading liquidity, makes sure that there's adequate pricing data. Do the DCOs have a rule framework, capacity and the operational expertise to clear these products? What the effect on the mitigation of systemic risk would be? The effect of competition, to the extent we would define these products to be subject to a mandatory clearing requirement, and then legal certainty with regard to the insolvency of either the DCO or a clearing member.

So to give you an idea, our CFTC regulations require DCOs that want to clear new swaps to file a 39.5B Filing with us, indicating the swaps that they would like to clear, and they discuss those five factors. This chart that I'm presenting here; shows clearinghouses which have presented 39.5 Filings to us, and the various currency pairs which they have provided information on.

The boxes that are -- the Xs that highlighted in yellow show ones where we currently see clearing activity. With regard to the ones that are not highlighted in yellow, the capacity, the operational framework is all there, they are just not actively clearing these swaps at this point.

How the proposal, as we are thinking about it now, would work? Would be sort of similar to the way, I guess, the prior clearing requirements work, but it's good to think about, sort of the interest rate clearing requirement, I guess. Essentially the proposed class would have 12 reference currencies, and those 12 represent the ones that have been submitted to us. And they have been submitted to us, the settlement currency would be U.S. dollars and the tenure would be three years -- three days to two years.

Again, that represents what was proposed to us, you know, I think there are issues and we are doing our analysis with regard to the liquidity around that, but that's what has been submitted to us, and I think that sort of forms the basis for a proposal to try and get some feedback on that.

And I guess, to the extent -- and I draw the link to the interest rate clearing, I think our view is, to the extent these are standardized contracts, excepted for clearing at a clearing house, then those would be subject to the clearing requirement, to the extent you had a situation where there was some sort of non-standard term included in the contract, and it could not be cleared for that reason, well then, you would have a situation where it's -- it's not subject to the clearing requirements.

So the swap has to be accepted for clearing at the clearinghouse. So, it would -- it should eliminate any non- standard bespoke terms that a clearinghouse can't handle. We did an initial analysis using the part 33 real time reporting data at the end of '13 and to the spring of 2014, that showed us that there was approximately 7.4 trillion in NDF activity among the 12 currencies that we are considering here.

One of the striking facts that, you know, we need to address is that 99 percent of that is unclear transactions. So, you know, that's one of the things in terms of the five factors, is making sure we are comfortable with the capacity, to the extent you were to include the clearing requirement, the ability of the clearinghouses to take on that additional volumes.

The next set of slides there talks to LCH -- can you just go back one? Yeah, to the LCH slide? So we note there that LCH has filed some supplemented data, speaking about the number of transactions that they cleared, their original filing have been some time ago, so they supplemented that to indicate the number of new trades that they have cleared through the beginning of this year. I supposed Gavin can talk to the volumes that LCH has seen more currently.

The most recent data from the swap execution facility is the FIA SEF Tracker has shown over the course of a month, a 61 percent increase in the clearing of NDFs, so we are seeing growth with regard to the activity on the SEFs.

I think it's important to highlight two things, these last two slides here, Commission Regulation 50.25 sets forth an implementation schedule that we can use. The rule itself indicates that the implementation schedule is discretionary. I think to the extent that we are, you know, considering a new asset class, I think staff would very much support using the implementation schedule that we have. And if people don't recall how that works, it's category one entities would need to begin clearing within 90 days. Those are swap dealers, major swap participants and active funds, those active funds are funds that have more than 200 swap trades per month.

Category two entities are, generally speaking, all other financial entities with the exclusion of ERISA plans and certain third-party sub accounts. And then all other entities fall into the 270-day window for implementation.

The last slide, is just to mention that our expectation -- they are not expectation, but the fact of the matter is, is that, you know, the exemptions and exceptions that have been put out by the Commission would apply to this. So whether it's the exceptions under the CEA for end users and captive finance entities, they would certainly apply. And then the exemptions really created by the Commission in other instances for an -- in our affiliates collapse, treasury affiliates, and then, you know, to the extent sovereign nations, certain Federal Government Agencies, international financial institutions have been found to, you know, not be subject clearing, that would all apply in this case as well.

So, you know, in terms of implementation and in terms of exceptions and exemptions, very similar to what we are seeing right now, with regard to, you know, interest rate and CDS. That's all. Thank you.

COMMISSIONER WETJEN: Thank you, Brian. And next we'll turn to Rodrigo, as a presentation.

MR. BUENAVENTURA: Yes. Good afternoon. First let me thank the CFTC, and especially Commissioner Wetjen for the invitation to be here with you. I'm going to present, maximum in 10 minutes, the approach that we have taken in the European Union for clearing off NDFs. You cannot hear me well?

And that's a -- this is the third clearing mandate that we could use. The approach in the EU for the clearing obligation is, in most cases, what we call the bottom-up approach, which is, it starts, or it's triggered by the notification that a certain CCP has been authorized to clear a particular class of derivatives, that notification needs to be transmitted to ESMA, and ESMA has six months to decided whether or not to propose mandatory clearing for that type of derivative.

The first clearing mandate that we should -- was the one on interest rate derivatives; that was sent to the European Commission on the 1st of October. The second clearing mandate is the one on CDSs, that is currently ongoing, and we expect to deliver that around the end of November, by the end of November. And the third, clearing mandate is this one that we are discussing today, the one on NDFs.

In the process for the determination of the clearing obligation, as I said, starts with the notification of the authorization of a CCP, and that's what we call an Article 5 notification; I think that is similar to the submissions that you can receive from clearinghouses under the CEA.

I'm not going to comment on the part related to the authorization process of the CCP, and how the risk management is conducted at each CCP, and is supervised, because there is a competence of the National Competent Authorities. In this case, for LCH, it's the Bank of England that will -- David will deal with a bit later.

So I'm going to concentrate only my comments on the analysis as to whether the particular class should, or should not be subject to compulsory clearing. So we have six months to do what is on the top right part that slide which is the analysis of the derivative class, the cost benefit analysis; the launch of a consultation paper, analysis of responses and then, final rules to be submitted to the European Commission. ESMA drafts the rule, and that is, you can find in the public consultation that we have published on the 1st of October, and that we'll be open until the 6th of November.

You can find a proposed regulation, European Regulation in draft form. But then the

Commission is the one that has the power to endorse that technical standard and convert that into EU law. And there is also, that's signaled as point number eight, a non-objection period for the European Parliament and the Council to decide eventually, to object to the rule, if that could contravene the level 1 regulation, in this case, EMEA. That has not happened so far in the last three years, but that's a possibility, and it's a period that we need to respect.

And then you have the dates for when the obligation applies to the different participants. We, in Europe have defined four categories, which is clearing members, large financials, smaller financials, and non- financials, with different dates of application of that obligation.

In terms of the currencies that we are consulting on, it's 11 currencies. I think it's all the -- that Brian mentioned before, except, if I'm not wrong, the Peruvian nuevo sol, yes. They are all -- the currency pressure all against the U.S. dollar which, as you know, is 94 percent of the NDF market. And the maturities that we are proposing to subject to the clearing obligation, are between three days and two years.

In terms of the criteria of the products, we need to assess three elements, which is standardization, availability of pricing and liquidity. And when it comes to standardization, what we found is that the level of standardization of NDFs is very high and comparable to credit and interest rate swaps. This is thanks to industry initiative, not thanks to regulations in the case of this market. But the level of -- or the percentage of transactions eligible for the electronic processing, is close to 100 percent, it's above 94-95 percent, which gives a good proof of the level of standardization. In terms of liquidity, we have volumes between 5 and 17 billion per currency per day exchanged.

Probably the peculiarity of this market is that the clear volumes are low comparative to the traded volumes, as Brian was saying before. They go between 0.5 and 4 percent of the traded volume, in the case of the CCP, that is authorized in Europe, which is LCH Limited, for clearing these products. And that's one of the elements that we are watching more closely in terms of the availability of clearing offer, and also of clearing members.

Currently there are 20 clearing members of which, if I'm not wrong, two offer client clearing at this stage. And that's also an element that we are watching closely because it's related to how easy will be the access to the CCP when the clearing obligation is mandated.

There are some peculiarities also of the NDFs which is the maturity of most maturities are -- most trades are below three months, which is a very short-term market, 90 percent is below three months, 30 percent below 30 days, and 10 percent with maturities of less than 7 days. And it's also true that in these markets, the offering of the clearing was much more recent than on interest rate swaps and CDSs. And you can see the percentages of cleared values according to BIS and

ISDA data, it really makes a difference in terms of the other two classes that configured the first two clearing determinations in the case of the European Union.

Just to conclude, we think that the main three factors that are required to be assessed by ESMA on assessing the clearing mandate are met in terms of standardization liquidity, and availability of pricing. We are assessing closely, as I said, the number of CCPs that are authorized. We expect to have more CCPs authorized in European Union, by the time then clearing obligation date arrives, and hopefully, following the works of Chairman Massad, there are also more internationally-recognized CCPs, which would add, of course, to the robustness of the network.

We are -- yet to see the results and the comments of the public consultation that is running for five weeks, and to check whether the ESMA approach is the right one or not. And of course we are fully committed to continue to liaise with the CFTC at staff level as we have done in the commitments for mutual consultation that we have put into place every time that a clearing obligation is proposed. Thank you very much.

COMMISSIONER WETJEN: Thank you, Rodrigo. David?

MR. BAILEY: Thank you. Chairman, Commissioners, Committee Members, thank you very much for inviting me to participate into today's discussion. Chairman Wetjen was -- sorry -- Commissioner Wetjen was very kind to mention that this is not the first time that I've spoken to the Committee, and I've always valued the open and frank dialogue that we've had at previous meetings. And I hope today's discussion will be of a similar nature.

We've already benefited from the insightful presentations of both Brian and Rodrigo, and from a European perspective Rodrigo has given a very thorough overview of the process and considerations that ESMA follow when determining whether a clearing mandate is merited in the EU in order to further the G20 goal of reducing systemic risks.

Whilst I share that goal of reducing systemic risk, and therefore have a strong interest in ESMA's work, I've learned from past experiences, speaking after Rodrigo, that he always steals the important points, and therefore I thought I'd -- it would probably be helpful if I offered the Committee a slightly different perspective, which is the perspective of the supervisor of the clearinghouses clearing the products, on which a mandate is being considered.

So from that supervisory perspective, when considering a clearing mandate, focuses predominantly on the capacity of the CCP to manage the expected volumes that may come into clearing, which is largely a question of operational capacity. And importantly, the ability of the clearinghouse to manage defaults of clearing members, should they occur.

Now, was that something we obviously

consider when authorizing a CCP to clear a product? I think it's very important that we refresh our analysis when a clearing mandate is being considered, especially if, as referred from the preceding presentations, with NDFs the bulk of the market is currently un-cleared and may result in a major change to the way a specific market worked if we therefore implement a clearing mandate.

So from a CCP, supervisory perspective, specifically we think about issues such as the size and scale of positions that exist in the market, and therefore may need to be closed out, in the case of a member default. We asses that by looking at factors such as the profile of positions, market wide net -- net positions, for example.

We also think about the liquidity available within the market which might be needed if a position needs to be closed out, and you can -- we assess that by looking at factors such as average daily volumes, the number of active dealers in the market, and position concentrations. And we also think about the potential loss that could be incurred if a significant position is being liquidated or wound down. And the cost for doing that might be incurred by market moves, or it might incurred by transaction costs.

So we are looking at the NDF market, as Rodrigo has already mentioned, from a European perspective we are thinking about 11 currency pairs, and opposed to the 12 that Brian put on the screen from a CFTC perspective. And one thing I would note about the NDF market, is that the data available is not as extensive currently, as with other asset classes we've looked previously, like the interest rates and CDS asset classes.

And in looking at this, we've relied primarily on data from treasury repositories from a European perspective. So when we've -- when we've looked at those factors, what has our analysis indicated to date? Well, I think as a broad point from our perspective, the market conditions and the structure are broadly supportive of considering clearing mandates across all of the 11 currency pairs that Rodrigo mentioned. But also, as Rodrigo mentioned, the indicators become less strong as the maturities extend. So whilst all currency pairs have liquidity and volume with shorter maturities, this begins to drop off in other currency pairs, as you move out in maturity terms.

And that varies on a currency pair by currency pair basis. So notably you'll see in some currency pairs, such as the dollar against the Columbian peso, or the Indonesian rupiah, the drop-off in liquidity is quicker and more marked to shorter maturities. So just to give some examples; and here I'm very much generalizing across the currency pairs; most of the currency pairs we are discussing see several thousand trades a day -- the maturity is up to -- the maturity is up to three months, but this drops off as you move out, and when you get out to maturities greater than a year, often you can see less than 100 trades a day taking place. And in some currencies the average daily volumes can be measured in single digits. Positions in these markets are more concentrated in longer maturities than in shorter ones. And bid-offer spreads, typically, for the longer maturities, can be multiples of what they are for the short maturities.

So these are all factors you need to think about if you are considering a clearing mandate and you are looking at it from a perspective of a supervisor of the CCPs. They might make the task of the clearinghouse closing out positions at longer maturities more complicated, but on the flip side, I would note that the outstanding positions are typically smaller at the longer maturities, potentially making it easier to close out.

And I also accept that if a clearing mandate is placed on shorter maturities then market participants might choose to clear longer maturities on the basis that they want to benefit from netting sets from their positions within the clearinghouse. So I'm deliberately not drawing conclusions at this stage about exactly what the clearing mandate should look like. From a European perspective, we want to see what the results of the consultation that Rodrigo mentioned yield, but very much from the perspective of a clearinghouse supervisor, especially in the product where the majority of volumes are currently not being cleared. I would highlight that we need to think very carefully about the implications of mandatory clearing from a clearinghouse perspective.

To that end, I very much support the thoughtful approach that both ESMA and the CFTC are looking to follow in this regard. So that's what I wanted to highlight to the Committee, and I very much look forward to questions in the discussion that follows.

COMMISSIONER WETJEN: Thank you very much, David. Very helpful. With that, I think we can start opening up questions to the rest of the membership here today. It might be worth, although it's addressed in some ways, by going through the different factors, under a statute for a clearing mandate, but I wondered if any of the participants might be willing to speak to what some of the general benefits might be of imposing a mandate. Apart from the technicalities about whether it would fit within the statute, it be just useful to review for the benefit of the public, if nothing else, why a clearing mandate will be considered in the first instance?

So what is it about clearing that's a positive, as far as the public is concerned, and as far as then financial markets, more generally, are concerned, and how does the mandate fit into that for NDFs? I don't know if any of the new Sub-Committee members might be willing to speak to that, it might be helpful.

MR. WELLS: Commissioner, I am Gavin Wells, from LCH Clearnet. It would seem rather odd if I didn't take that question as the Clearinghouse. So, thank you to my fellow

Sub-Committee members for avoiding it.

In the summer of '08, the clearinghouse was approached by a group of members to look at providing a clearing service for the FX forwards product. We looked at this in 2003 and at the time the focus of FX Markets had been less on the mitigation of counterparty risk, and more on the mitigation of settlement risk. And thus the settlement service CLS, was born around that time, and the clearinghouse stopped it's analysis of FX clearing. It was asked to relook at it in '08, that's why the clearinghouse hired me, I've been working at Citigroup in the currency markets, and two months later, September '08 came, and we are familiar with the events of that.

So, the market asked us to looking at clearing effects because they wanted counterparty credit risk mitigation, and they also say, look at the biggest asset class first. What is now a $2.5 trillion a day market, the FX forwards are swaps. With the advent of the Dodd-Frank Act in 2009, in August, we moved our attention from swaps and forwards as the market believed, and they may not be included within the mandate. Two options, and we built an FX options service.

Throughout 2009, 2010, right up until the beginning of 2011, when the truly systemic importance of the FX asset class became clear to all, indeed there is a -- it is used for payments, it is the liquidity of all the markets, and for the product sets that, contrary to how Brian described NDFs earlier, for the rest of the products to have a transfer of notional at settlement, a full transfer which included options, it was decided that that warranted much greater, more robust analysis, before any clearinghouse should look to clear those.

And thus, the members of the clearinghouse asked us to look at developing a service for NDFs, the product which they still felt would fall within the mandate. So, there was a perception that counterparty credit risk mitigation was needed, we've built a service for NDFs. Now that perception has changed a little, whilst there is still a feeling that the clearinghouse offers security in removing that counterparty risk, it offers some operational efficiency, and certainly the benefits of multilateral versus bilateral netting.

The other benefit that's being seen by the members and clients of the clearinghouse, is the impact that capital will have on many market participants starting from December 2015, but margin is to be posted on unclear derivatives. And that's added impetus, not only to the clearing of NDFs, one has seen in the press recently that the volumes of NDFs both in the clearinghouse and on SEFs has increased, but also that impetus has added to the development of solutions to allow the clearing of other FX products, because the clearinghouse will be commercially more advantageous after those capital rules are passed in December 15, for market users.

So, to summarize, the market wanted counterparty credit risk mitigation that's been delivered for the asset class that we can currently clear, the one that is cash- settled only, NDFs, and with capital looming in December of 2015, we are working with the existing infrastructure of the market to understand how to manage intraday liquidity risks, and thus deliver a clearing service for the other FX product, FX options, in time or that deadline in some 14 months' time.

COMMISSIONER WETJEN: Without disagreeing with soon-to-be very sensible points, I'm just wondering, based on the presentations, there still remains a very small share of the market that's clear, so it might be helpful that if you could explain why that might be the case.

MR. WELLS: As an ex banker, I'm familiar with seeking efficiency. And I think that until a mandate is passed, the reason one clears early, in this instance, is to prove the operational readiness. So our members have done that to some degree, not all 20, but about 10 of them. And a number of them, have prepared those operational pipes for their clients, but beyond the 20 members we currently have, we have a further four, who are ready in all aspects to clear less for their default fund contributions because they are waiting for the mandate.

So until the mandate comes, until they can see that they need to clear, there is no impetus for them to clear, because the capital, the commercial impetus doesn't arrive for another 14 months. So whether it's the mandate or the capital, it will be by December of next year, that clearing -- that that FX, NDFs move into the CCPs.

COMMISSIONER WETJEN: Any other members willing to add to that?

MR. VITALE: Sure.

COMMISSIONER WETJEN: Agree with that, or disagree with that?

MR. VITALE: Yeah. I think, to your question, of why hasn't the market started to clear faster? I think there's a different dynamic here, that we need to be cognizant of in NDFs that, in some ways didn't present itself through both the rates and credit in our implementation of central clearing. And before I go into that, I think you'll find from the industry, over the last, what is now five years, considerable amount of effort has been put into, be prepared for centralized clearing.

A considerable amount of effort has been put into self-execution both here and in Europe, but as you suggested, small amounts are being cleared, it also is -- it's also related that NDFs represent a very small portion of the overall FX market, roughly 2.5 percent based on most data points. And there's a reason why. Because inside the micro structure of the NDF market, and when we look at our -- you know, our client business as an industry, a different phenomenon that persists, and it's what is in rates and credit, in that roughly 70 percent of underlying client flow happens -- in terms of price creation -- happens outside of the two jurisdictions that we are referring here today. And that's both the U.S. markets and European markets.

Why? For the most part, in the NDF

market you have a handful of currency pairs, predominantly China, India, and Korea, where the actual price creation is made, and the price creation is made from exporters and importers there locally, or individuals investing into those respective -- those respective countries. And so you have the phenomenon where price creation is made there. And by starting a clearing mandate here, we need to be cognizant for U.S. investors, that the most important thing for them to access that liquidity pool, is that they can actually go out and access that Asia liquidity pool in some sort of meaningful way.

And from the numbers that we see, and again, this is industry trying a number of different surveys, the U.S. Represents about 10 percent of clients for NDFs. So you have probably some apprehension, there's a number of clients here today, who would be concerned to make sure that the liquidity that they are seeing now on a global basis, where the foreign exchange market has been for the last 20 years, a global business, if they can make sure they are accessing that liquidity once you move you into a cleared world.

And so I don't suggest, as I lay out that challenge, that I'm suggesting that we debate whether a clearing mandate is needed, I'm suggesting when we think about implementation, we ensure that U.S.-based investors are able to access that liquidity from day one. And that can come by way of finding a convenient way that the clearing mandate is at least in line with other jurisdictions in terms of timing, relative timings. Or, we can make sure that at least the currency pairs that we are discussing are globally consistent.

COMMISSIONER WETJEN: Kim?

MS. TAYLOR: I think one thing to potentially add to the discussion is select -- deciding to clear has to be driven by something. It can be driven by regulatory mandate, it can be driven by customer demand, it can be driven by commercial realities of capital cost or risk management concerns. And in the case of the FX, I think it probably also contributes to the lack of significant adaption on a voluntary basis, the fact that the clearing offerings that are available are only servicing a portion of the risk pool as opposed to a broader set of the risk pool.

So, it can actually be risk-increasing, or margin, or capital increasing to split up a portfolio, and only clear a part of it. And so I think I think that is probably also contributing to the lack of voluntary adoption ahead of any mandate.

COMMISSIONER WETJEN: So to avoid that, is the solution or answer just to marry up the implementation schedules assuming both jurisdictions want to go forward with the clearing mandate?

MS. TAYLOR: I think there certainly are benefits to having the jurisdictions, the major jurisdictions move in a closer time alignment than has been the case so far. But I think probably even more important than creating a lock step on the timing of a clearing mandate would probably be not imposing a trading mandate in one jurisdiction as opposed to another jurisdiction because that seems to have been the piece of the U.S. mandate that has been -- that had the most impact on the market's ability to access liquidity in all of the ways that they normally could.

So I think there's probably more sensitivity to the timing of any trading mandate than there is to the lock- step timing of any clearing mandate.

MR. VITALE: I would, you know, further to my previous points, I think, you know, it is something that probably should be, you know, considered. When you think about the implementation timelines that both the CFTC would potentially now then turn to, and what our colleagues in Europe have proposed by way of their consultation, we are not too far away from each other, and from at least the beginnings of that, so if in any thoughtful we could find a way to do so, would be very prudent.

You know, further to that, I mentioned

the 10 percent of U.S. client flow -- you know, NDF flow comes from clients from what we can see, there's a really key -- you know, point of that that I probably didn't mention, which was, you know, for the most part, clients tend to be price takers in this market -- U.S. investors, excuse me, and it's a slightly different phenomenon that we saw with the rates mandate where, you know, Asia in, or Europe in, into the dollar rates market was there as, you know, having to enter that market for price-taking.

Here it's, slightly skewed the other way, and you know, as I said, it would be extremely important that we make sure that the U.S., you know, entities are able to access from a price-taking perspective as much liquidity as possible.

MR. WEISBERG: I have one comment to add on just the liquidity function while --

CHARIMAN SERAFINI: Move closer to the mic.

MR. WEISBERG: I'm sorry -- while there

can be concerns that the liquidity might be bifurcated, the Commission should also consider the fact of -- the potential benefits, so when the markets become clear there may be additional markets makers who -- or currently find it difficult to participate in the market, that would be able to participate if clearing did take place. And one of the areas that you may want to consider researching is, NDFs aren't necessarily a primary market where risk is exchanged. So in a lot of cases the NDF market is exporting liquidity from other primary markets, and I would note several of the primary markets that may be inaccessible to foreign participants are themselves cleared.

So, you know, if you look at the underlying price function for dollar Brazil, a lot of that is taking place on the BM&F and there are other currencies in the list. The ruble where you have Molex is a very successful vertically integrated clearing and execution system, so while we are talking about an export function that makes these markets accessible, some of the underlying markets that are driving them are, themselves, cleared.

CHARIMAN SERAFINI: Chris?

MR. ALLEN: Thank you. Just to supplement some of the points that have already been made, I think the very short date in nature of this market, is one of the reasons why you haven't seen, to date, the same kind of alignments of the capital incentive to my migrate to a cleared market that you would see in, say, rates or credit. Particularly where you -- when you bear in mind that if you've got entities, for example, trading in option product, and then hedging some delta NDF, the inefficiency of some of that going into clearing; and another part of it, not -- is potentially, unattractive.

And the capital efficiency derived from the position nonetheless being cleared, has not, as I say, been comparable to the one you would see as an incentive for rates and credit products. So I think the comments ought to be made that that is going to change over the course of the next year, 18 months, particularly as we move into an environment of mandatory non-cleared margin, and so on and so forth, so the economics of the status quo are not set to continue. But I do think it's just an observation as to one of the factors that probably sits behind the relative low level of clearing that we see today.

I think that point which I've mentioned in terms of potentially how the NDF market could be used a hedge in respect of alternative product sets, which people are trading, is going to be more important, I think, in the context of mandatory execution obligations around the SEF. Perhaps more so than it will be ultimately in terms of where we land with clearing.

CHARIMAN SERAFINI: Adam?

MR. COOPER: Thank you. Thank you, Commissioner Wetjen for convening this; and thank you Chairman Massad and Commissioner Bowen. I'll just add, I guess, my voice to support for the implementation along, you know, parallel lines.

I think -- there was a lot of talk about alignment and harmonization across different jurisdictions. I think one of Chairman Massad's most important points in the intro was, we are here to facilitate competition, and innovation. We have an opportunity now to implement a mandate in parallel between two jurisdictions, which I think would facilitate. One, it would avoid splitting liquidity in the product, and I think it would very, powerfully, facilitate competition that would go ultimately to the benefit of the development of the market, and the development of liquidity, that we are all recognizing is key to success.

COMMISSIONER WETJEN: Lets move on to some -- to some of the next questions. And I'm just working from -- largely working from the agenda, but are there any views about whether the NDF class has been sufficiently defined as laid out by Brian, or even by Rodrigo for that matter; have the right pairs been chosen?

MR. WELLS: I can understand, as with the interest rate and credit asset classes, that there is a -- one could say that to ease into the obligation to start with a smaller group of currencies and then extend it, is one way, certainly, to approach a mandate. One of the benefits, in clearing FX, is the portfolio correlation; the benefits that are achieved by bringing different currencies together within one risk management framework. And the benefits are two-fold. The user of the market has the margins they post, reduced with the increased number of currencies, because of the correlation between and within the portfolio.

And from a risk management perspective, the clearinghouse is better able to manage its risk because it has that correlation between the different currencies, and so concentrations in one are offset by another. So on a purely risk management, and efficiency of margin, then I would suggest that both the proposal that's here today, and that from ESMA would be correct in including the 11 or 12, as it may be, currencies.

MR. WEISBERG: Ah, yes. One of the

things that we'd like to comment on is, we've already gone through a process where, you know, the clearinghouses themselves have selected which ones that they believe should be eligible and have authorizations for them, and it seems arbitrary to, you know, bifurcate that list to us. One of the things that could be examined is the very small differences between, let's say, the sixth currency on the list, and the seventh or eighth currency on the list, they seem to us to be, you know, very, very similar in terms of liquidity characteristics.

And the nature of this market is that the liquidity in each of these currencies is, you know, subject to change, over time, depending on what the market conditions are; so we think picking a much narrower subset of the currencies, it might be tough for that to be an objective determination, especially in light of a moving liquidity target.

COMMISSIONER WETJEN: Jason, any views on that?

MR.VITALE: I would further both comments; and I have a slightly different reasoning. I think getting back to the size of this market and that, again, it's roughly 2.5 percent of global FX volumes, limiting the scope from day one, given the centralizing of risk into, you know, let's say a handful of CCPs. And the fact of the underlying products themselves, or emerging markets, hence, you know, open to higher volatility than you would expect, and an element that we should touch on today which is, how do we deal with disruption events in those particular markets.

It would mean if you started with a smaller number of currencies, we are just as an industry and as an ecosystem, we are setting our risk even further. So, you know, you can make a statement there, that if we don't have core size to this market in a relative sense, then you are really starting, the classic swapping, counterparty risk mitigation for increased liquidity risk. And so I would encourage that if

-- again, if the conversation is, how do we implement, as opposed to should we, then I would encourage more initially to ensure that this is stable.

CHAIRMAN MASSAD: Can I follow up on a couple points that have been made? Maybe I'll ask Adam, and any others to comment. Adam, you talked about the advantages of having mandates that essentially kick in concurrently. What happens if that doesn't occur, if the European mandate takes effect and we are not there yet, and particularly, you know, thinking about -- well, let me ask you that first, and then I'll ask Phil.

MR. COOPER: It's conjecture, but I think, as I say, that the driver is the competition between the competing CCPs in the different venues. When there is a mandate and they are both competing for the same pool of trades of transactions. I think it's ultimately beneficial. It gives me more choices, it provides, I think, more impetus, you know, for the marketplace to find the -- you know, best -- the best solution. That's not so say that where they don't come into place at the same time, that there's a huge disparity, because certainly that competitive incentive would still be there for the one who is not subject to the mandate, but I just think I'm unbalanced --

CHAIRMAN MASSAD: Is there any -- is there a market fracturing risk in terms of?

MR. COOPER: I don't think so.

CHAIRMAN MASSAD: Okay. I mean, even if we are -- later, for whatever reason?

MR. COOPER: In theory, possibly.

CHAIRMAN MASSAD: Yeah.

MR. COOPER: But I don't necessarily think so.

CHAIRMAN MASSAD: How about, take it the other way then, and let's say we go forward, pretty much on the same time table, or not long behind them, but recognizing that then, under our trading mandate, there could easily be a MAT determination, European trading mandates don't kick in for a while, then what happens?

MR. COOPER: Well, I mean, then you have the mandate here and not there is what you are saying?

CHAIRMAN MASSAD: Right.

MR. COOPER: Yeah. But then I -- you know, then, it potentially creates a little bit of a liquidity risk, a little bit of a fragmentation, but I mean, I think right now, if everybody preceded in parallel, we are going to be -- if CFTC would have the mandate in place, if again we assume that there is a mandate, much quicker, and --

CHAIRMAN MASSAD: But does it create a risk that business, you know, moves so -- where there isn't a trading mandate. You know, we both have clearing mandates but only one of us has a trading mandate?

MR. COOPER: Oh, so a trading mandate?

CHAIRMAN MASSAD: Yeah. If we have both.

MR. COOPER: I'm sorry, I thought that was (inaudible).

CHAIRMAN MASSAD: In other words, if we do the clearing mandate, then there is --

MR. COOPER: I think that's certainly a possibility, that's certainly a possibility. And it's something to be avoided, I think.

CHAIRMAN MASSAD: Yeah.

MR. ROHRBAUGH: Hi. I'm Troy Rohrbaugh, from J.P. Morgan. So, to answer your question from my perspective, I think the clearing mandate, while certainly ideal to be joint, I think is much --

CHAIRMAN MASSAD: Could you speak up, I can't hear.

MR. ROHRBAUGH: Sure. I think while obviously the clearing mandate, would be ideal to do in a similar timeframe, I think it would be less disruptive from that perspective, if it wasn't the exact timing. I think the key is your question around the trading mandate and while, obviously, no one would know, and maybe Phil is right that, you know, the clearing mandate would bring in new market participants, that would be, in my opinion, a medium- to long-term outcome. I think in the very short term, to Jason's view, that you could have a bifurcation on liquidity which would definitely be adverse to U.S.-based investors.

And I do believe that would be disruptive, and I think in the short term we are clearly not sure on the exact outcome, but it would be highly probably to assume that if there was a bifurcation on liquidity on the beginning and that would be challenging for some market participants.

CHAIRMAN MASSAD: Sorry. Just to make sure I understood you, there will be a bifurcation in the event that we have both a clearing and a trading mandate?

MR. ROHRBAUGH: Correct. And there's only --

CHAIRMAN MASSAD: And a clearing mandate for a while in Europe?

MR. ROHRBAUGH: Exactly.

CHAIRMAN MASSAD: Right.

COMMISSIONER WETJEN: Chris?

MR. ALLEN: My point was going to be very similar to the one that's just been made actually, which is, I think, that the risk here, if we want to call it that, is when you get MAT determination following the introduction of clearing. If you bear in mind as well, the phasing approach to clearing you could conceivably have the added complication that you've got certain participants in the market required to clear, but not others, and MAT determination being made in the context of that phasing.

And therefore certain participants in the market are required not just to be subject to the obligation's trade on SEF and (inaudible), but a situation even within the context of U.S. markets, where that obligation's trade on venue is not uniformly applied because of the phasing of the clearing side of the dimension. So I think the fragmentation risk is a real one, and I think it's more to do with the introduction of the MAT determination of the back more so than the clearing.

COMMISSIONER WETJEN: Just to follow up on that, so there's a variety of things we can do in response to that concern, to the degree the Commission believed it was a -- was a concern that had to be responded to. One option, obviously, would be just to delay the clearing mandate. The second option would be to somehow, prevent, if you would, a trading executing mandate from going into effect. Or I suppose, even revisiting the trading mandate policy of the Commission.

So, just sticking with those two very basic options, in a way that some of the benefits that could come from a clearing mandate as articulated earlier, interested in the views of anyone who thinks, either one of those options might be preferred. Your placards up, so --

SPEAKER: I think David Goone has been wanting to get in for a second, and then David Bailey.

MR. GOONE: So, it's an interesting discussion, I mean, to address the mandatory trading issue. I think capital becomes an interesting observation here, because in the U.S., depending on how you mandate your clearing, what happened to us in the energy industry is when Dodd-Frank came into effect as you -- many of you know, we ended up converting all our cleared products to futures. A lot of that was due to capital issues from the end users pushing it here.

So an interesting by-product of potentially moving mandatory trading and clearing in the U.S. might be that it moves towards futures market. I mean, actually NDFs really just cash-settled contracts, which changes like ourselves, and the CME have been doing for 30 years, I guess, or more. So these aren't new notions. I think the issue will be, if you are going to bring in new participants, they'll probably move potentially more on a mandated environment towards more of a futures type environment, potentially.

I do think that depending on the holding period, we look at two or five-day -- one, two or five-day, I guess, in case of all the jurisdictions, may have also a driving function on whether these go. I would also just want to comment earlier, which I wanted to add, was I'm doing the products that I do tend to agree you should do a wider breadth of products, not a narrowing breadth. I think the liquidity issues in the other markets we've looked at, we've seen a lot less liquid markets go towards the mandated clearing, and not have much of an issue. So, in comparison to the NDFs, I think, under discussion.

COMMISSIONER WETJEN: David Bailey?

MR. BAILEY: Thank you. Just two quick points; I think in answer to the question on trading mandates versus clearing mandates, I think trading mandates do introduce new considerations and perhaps the MAT determinations we've already got in place, are instructive in some of the markets where trading mandates are already in place. We do see, based on feedback we get from market participants, I'd be interested in thoughts around the table, we have seen a fragmentation of liquidity between different -- between different markets and that's something to consider.

My second point is, liquidity fragmentation, looking at it from a systemic risk and market resilience perspective, liquidity fragmentation has some detrimental consequences if, in times of crisis, liquidity is fragmented, it will not be as resilient. So I think there are a separate set of considerations around the trading mandate that we do need to think about, if that is to be question that follows on after a clearing mandate.

MR. KLEIN: I want to agree with that, and I think it's -- I think it's -- you are asking the right questions, Commissioner Wetjen. You are asking the right questions, because I think given the way the Commission's rules are structured, it's sort of difficult to talk about a clearing mandate with also -- without also talking about the potential for a nearly simultaneous MAT determination, at least that's the feasibility, and I think -- I think the mandatory trading raises a lot more issues, potentially than the mandatory clearing.

And I also want to hearken back to the Chairman's opening remarks. I think moving NDFs into a mandatorily cleared -- mandatorily SEF trading environment, also is going to have the effect of highlighting some of the fissures and unresolved issues around some of the other Commission rules, particularly the cross-border guidance. I do think that given the way the cross-border guidance has been applied and is functioning, there's a very real possibility for fragmenting liquidity if there is a mandatory trading determination.

I think, you know, we've seen that in rates and credits, and given the existing structure of the NDF market, I would think that it would be even more susceptible to that kind of fragmentation. One other thing I wanted to note in comment -- in response to some of the earlier discussion is, you've asked about the right NDFs, whether they were looking at the right pairs. And there's a sub-issue to that, in that as the ESMA consultation paper that was released on October 1st notes, the reason the OTC NDF market is highly standardized, it's because the market has largely adopted empty terms and empty templates, but when you look at the product definitions and rules of the relevant DCOs, and even more particularly the SEFs that are currently trading NDFs, you'll find that there hasn't been harmonization of their product definitions with empty standards, or even with the standards of each other.

So you've got disconnects between each DCOs definitions, and how they've incorporated the empty standards, and you've got disconnects between SEFs and DCOs and across SEFs, and unless all of those kind of details are worked out, I think you've got as very real possibility for creating basis risk and the potential for counterparty disputes over what's actually being transacted and cleared.

COMMISSIONER WETJEN: Doug?

MR. HEPWORTH: I think that these

markets are not going to be price discovery markets, once -- even when they are clear, they are not going to be price discovery markets, they are effectively going to be slave markets, much as the CME, FX, futures are now. That's not necessarily a bad thing, then clearing will increase participation and the clearing will also increase price transparency.

The addition of mandatory trading, just adds an extra element to veer out the participants what will be there, will be their acts. Will they have a tendency to be more long, or a tendency to be more short, this is resolvable by arbitrage, but we would just need to make sure that the process of the arbitrage is straightforward and we know who is going to make the money from the arbitrage.

COMMISSIONER WETJEN: Supurna?

MS. VEDBRAT: You know, sir, I think that, you know, we discussed the currency pairs, you know, so what we would like to see actually is the more liquid currency pairs being the first phase of. You know, some of the currency pairs there are concerns about, you know, will there be sufficient liquidity? That being said, a clearing -- a clearinghouse can offer them on a voluntary basis. And I think, you know, Jason mentioned from an infrastructure perspective we have to ensure that we have the ability to trade, you know, some of these currency pairs, in the time zone and the region in which they are the most liquid.

That's one of the lessons we learned actually with the -- with rates and credit in the initial phases. There was non-availability to trade and clear some of those contracts, so if you were in the Non-U.S. time zone. So you know, that was a little bit of a concern for us. You know, from a voluntary clearing perspective, or trading perspective, the driver for NDFs has been the mandate or the potential of the mandate. You know, I recognize all the benefits that we have from clearing, but given, you know, the size of book as well as -- the size of the market as well as all the other mandates that you have.

You know, what our experience has been that (inaudible) allocation is driven more by, you know, when is the potential mandate going to take effect? Versus like any other benefit that anyone may see in the NDF market. And you know I -- you know, when we think about SEF trading and clearing, I'd like to think of SEF trading more as electronic trading, and we would actually like to see the ability for the SEFs to allow us to trade NDFs electronically, closely aligned with the time the clearing mandate, you know, comes into effect.

Just because otherwise you are working out a completely different workflow, for a short period of time, and it also helps, to some extent, you know, the NDF market traded a lot more electronically before the SEF mandate. It actually allows us to go back to trading at a lot -- a lot more electronically. So we don't necessarily have to have a trading mandate, but some encouragement that the SEFs are -- you know, are working towards electronic trading solution.

COMMISSIONER WETJEN: Rodrigo, you've had your placard up for a while.

MR. BUENAVENTURA: Thank you. Just an element of the information to make things a bit more complicated, because I fully see the easy issue of the timing, and the alignment of the timing of the trading obligation, but as somebody said before, there are some constraints in the regulatory regime, both here and in Europe. And our constraint is that, ESMA needs to -- ESMA has a limited time which is six months for determining the trading obligation, after then adoption of the clearing obligation.

So let's assume that we deliver the NDF clearing proposal by the end of this year, and the Commission adopts around March, that means that by September next year, we have to decide whether to propose or not, the trading obligation on NDFs. Now, we could decide not to propose it, but if we decide to propose it, it would not be effective before January 2017, which is the earliest date that the trading obligation can take place.

Which, from a purely year perspective makes sense because it would be also exactly the same date in which all counterparties would have to be clearing already by then, early 2017. So even the small financials in the phasing, but that, I guess, adds to the complexity of the synchronization.

COMMISSIONER WETJEN: So no case before 2017, you said, Rodrigo, would receive the mandate?

MR. BUENAVENTURA: For the trading obligation, we will have to propose a trading obligation, or not, but by let's say fall next year, the date of effectiveness of applicability of that obligation would be January 2017,although it would be written in the official journal, you know, a year-and-a-half before.

COMMISSIONER WETJEN: Kim.

MS. TAYLOR: The other issue that I just want to bring out attention back to briefly is the regulatory landscape issue. If there is a clearing mandate in the U.S. That requires U.S.

parties to clear transactions, and we've had a lot of discussion about how fragmentation of liquidity associated with that is a bad thing, so you want the U.S. Participants to be able to continue to access all available liquidity in the market. But if European persons are not allowed to clear at third country CCPs, then that is a further risk, I think, in having a clearing mandate that goes into effect before there has been a determination around equivalents, even in the absence of a mistimed trading mandate.

COMMISSIONER WETJEN: Jason?

MR. VITALE: So I found it interesting, Supurna's comments regarding the incentives, and I tied that to David's comments around capital, and it would be remiss that I didn't mention, leading up to this, this day, we had a number of different clients asking, you know, a number of us to provide feedback, and again, I think there's two main concerns.

Yes, one is liquidity being a U.S. person, clients tend to do know that as far as executing with a U.S. person, when you run your order book from an execution perspective, we tend to have to work a lot of those orders into Asia hours, and you working that even into European hours, because that's where liquidity is most available. To that end, I would probably, personally, deemphasize the importance of the execution mandate relative to getting core liquidity, so I'll leave it at that.

The second one, to David's comment, I think, David, you probably are referring to a beneficial capital from listed by way of margining, but the other one that I know a number of clients, and to be frank, a number of providers here, are very concerned with, and it's not obviously the jurisdiction of CFTC directly, but the treatment of derivatives exposure under Basel III, and the amount of then, capital we have to hold against that exposure, is a concern.

And it's a concern from clients, and it's a concern for providers in that there aren't benefits, to Supurna's suggestion; there are no benefits, per se, to clear relative to holding exposure bilaterally. And this is in the leverage ratio, calculation of exposure. So you add the potential for U.S. having a liquidity crunch, and I hate to use that word, lack of another word. Yes, there are higher transaction costs which the industry can get comfortable with over time to pay for that credit provision, but the reality is, the amount capital we have to hold against this business is ever growing, and the benefits of netting are falling apart.

So that comes back to the size of this part of the market is relatively small, and it wouldn't be clear to me, as the -- you know, costs across the board go up, what the actually inevitable situation will be, (a) as someone suggested, potentially look to list it, but in some ways, I think you can make a case that some of these markets would just become too expensive for people to transact.

COMMISSIONER WETJEN: Phil?

MR. WEISBERG: One of the things that I

think people should consider is the distance in time if we go all the way out till January 17, between when there was a mandate for SEFs to register, which happened last October, and when people would be obligated to use the SEFs. So, you know, if things play as being discussed, that would be three-plus years, and I think, the original intent was to have clearing all sorted out before obligating people to trade with particular execution rules.

So right now we have a situation where no one has to trade on SEFs on this particular asset class, but if you want to offer a multilateral, you know, trading ability to the clients, you have to do that as a SEF, but no one has to use a SEF. And I think, you know, back to cost, I mean the cost of SEFs providing the services are, you know, pretty high, and I don't really see it possible for them to, you know, break even on providing those services until we get to the point where at least it's clear in people's heads, that they are going to have to use them.

COMMISSIONER WETJEN: What are you suggesting, Phil?

MR. WEISBERG: Well, I guess what I'm suggesting is somehow we reconcile the rule -- the Footnote 88, which last summer -- or two summers ago, surprised everybody with any kind of delay in made available -- potential, being made available for trading until January 17. It's just -- it just seems like it's incongruent with, you know, how this was all supposed to have taken place.

COMMISSIONER WETJEN: Anyone else? Turning to the next topic; so, again, referring to the agenda, give us a handle -- the give the Commission a handle on what kinds of packaged transaction is involved in an NDF contract. And some suggestions, or at least some issues that you'd like to identify, that we need to be aware of. Thanks, Jason.

MR. VITALE: As it relaters to NDFs I don't see that being an issue day one. Of course we'll have logistical challenges around adding bunch orders or blocks, but packaged trades, essentially, aren't an issue here. Should -- we start to tackle FX options, and if non-deliverable options are included, I think that that is something as a group here, we would tackle down the road. But I can't foresee packages being relevant in the initial go-live for NDFs.

MR. WEISBERG: I was just going to say there might be a risk if there's a mandate for the hedge, and not the NDO. So we may want to have relief in that area, and then --

COMMISSIONER WETJEN: Can you speak up?

MR. WEISBERG: Sure. NDOs are frequently traded with delta hedges, so if the delta has to be cleared in the NDO, it doesn't have to be cleared, that that could potentially be a problem. And I think when -- as you select the optimal tenors, you want to make sure that there is a healthy NDF swap market. Because in a lot of these currencies, people want to move their fixing risk out, so we want to make sure that you are going to be able to include the shortest date NDFs within the mandate.

And, you know, where you draw the line, obviously, if people are trying to roll trades from something near the end of the mandate -- near the end of the time period, further, those would all be potential package issues for the Commission to consider.

COMMISSIONER WETJEN: Yasushi?

MR. TAKAYAMA: You know, what we see in the -- what we see at Nomura, example the Pakistan election, is a kind of option, that Nomura sells to the counterparty in emerging currencies, and the other hedging in the (inaudible), and enters with that very counterparty through NDF, to offset some of the risk associated with the option that first I described. And we show to the clients, the kind of bounder of the price, for both products. So, actually this is a reality, and I with a packaged transaction.

So, if the trading mandate is following the clearing mandate, then we will have, you know, a kind of difficult situation that, you know, options side, does not have to be that, you know, going through the sales, but NDF side, that has to go through the SEFs. Not really our issue, I think. Thank you.

COMMISSIONER WETJEN: I think Chris wanted to weigh in.

MR. ALLEN: For the second time this happened, that the previous speaker just made the point I was going to make which is, that I think that the -- not so much thinking of the package transaction as such but just going back to the option that may well have NDF delta hedge, to the extent that we roll forward, and you have the potential for made available straight to termination, which would apply just to the NDF, and not the option. That's, potentially, a fairly challenging situation we have to deal with.

COMMISSIONER WETJEN: Sami?

MS. COHEN: So, call me an optimist, but I'm of the hope that by the time the trading -- the execution mandate attaches to NDFs, the package issue for options without the hedges will be solved, because certainly that's something that we need for the interest rate market by November 15th. And I think that the -- some of the solutions that the industry has been talking about with the Commission, such as treating the MAT leg of a packaged trade, and a permitted -- or a blocked transactions, for example. That's one of them, there are others, but I think that that this option on a MAT product, plus delta hedge package issue, is a broad one that applies to many products including NDFs, and I'm certainly hopeful that we can solve that long before this mandate attaches.

COMMISSIONER WETJEN: Bob?

MR. KLEIN: Yeah, I just wanted to know that we do see some packages that involve emerging market bonds and associated NDFs, and that's just another type of package that we'll have to work through.

COMMISSIONER WETJEN: Sorry about that, I didn't catch that, can you --

MR. KLEIN: It was packages involving

emerging market bonds and NDFs and the associated currency?

COMMISSIONER WETJEN: Gavin?

MR. WELLS: We have the great good fortune to speak to 12 of the world's largest NDF market makers, the reason we don't clear NDOs in the clearinghouse is that they are about a tenth of the volume of NDFs. There aren't that many banks who make NDA prices, or as many clients who would like to clear them, but the volumes are very small.

It's entirely appropriate that NDFs should be used as a delta hedge to NDO and I do not doubt that there is the ability within the regulation to recognize that, to keep that risk package together. With regards to other packages, the estimate of our members is at around 97 percent of the market are not packages but the ones that are or are not standardized, are typically the G10 currencies crossed with the NDFs, so the euro against a Korean NDF.

But that these are predominantly used

with non- financials, not in the inter-dealer market, or with other financial entities. So I hear the comments about wishing to manage risk appropriately on the trading desk, and fully support those, but the issue is of relatively small scale compared to the total volume of the NDF market.

COMMISSIONER WETJEN: Going to the next topic. Is there anything unique about the NDF space that would make the reporting obligations go along with clearing especially difficult, or uniquely difficult?

MS. SIGELBAUM: I can respond to that. So we've been working with the industry for a couple of years to prepare --

COMMISSIONER WETJEN: Jill, since you are also new, why don't you introduce yourself?

MS. SIGELBAUM: Oh, sorry. I run foreign exchange for Triana. Triana is a big part of the infrastructure for foreign exchange today. We are connected to all of the top banks and prime brokers and FCMs, and so we are the pipes that, say, behind the scenes that the banks use to move trades from institution to institution. We are -- we've spent the last tow years working with the banks and the clearinghouses to certify connectivity, so we are technically ready, and I believe that the top -- the top percentage of the industry is also technically ready, so I don't think reporting from an infrastructure perspective is the issue.

There may be some issues down the road, with some of the regional banks, but nothing that can't be accommodated in a short period of time.

COMMISSIONER WETJEN: Anything else for reporting; Sub-Committee members? Oh, Mike?

MR. LESAGE: I'd have to disagree with that last comment. I don't think that the infrastructure is ready. I do feel it's important for the Commission to realize that there are market structure issues that exist with both rates and credit that need to be sorted, you know, there's a lot of unfinished business, that needs to be addressed, and we should be very thoughtful about adding any additional asset classes. You can take Rule 173 as a starting point, that's something that has got issues, that still exists, it makes the process unworkable and block trade, so I think you need to take that into account.

You know, speaking from the FCM side, I think there's a whole host of other issues that you need to think about, one of which is the current capital issues that FCMs are facing, right now due to the Basel Rules and some of the SLR requirements, FCMs are having to post a lot of capital, and if you add another asset class into that mix, it could -- it could cause some additional problems.

So until those issues are sorted out, I think we should be very cautious about adding additional products that could drive further -- or accelerate further consolidation amongst FCMs. So as far as being ready, our clients aren't ready, and a lot of the FCMs aren't ready, so I think it's important to define ready.

COMMISSIONER WETJEN: Would anyone else

like to speak to that? Whether it's reporting, or other connectivity issues, any other reactions from both Mike's and Jill's comments?

MR. KLEIN: I'd like to follow up on Mike's comments about FCM connectivity and 1.73 in particular. Without commenting on clearing, per se, if you go back to the issue of the potential for a very rapid MAT determination, I think the current state of affairs is that none of the SEFs that currently offer NDF trading, currently have the ability to connect to FCMs versus, a central limit hub. And some of them don't offer any limit checking capability whatsoever. So that's something that would have to be addressed in the context of SEF trading.

COMMISSIONER WETJEN: George?

MR. HARRINGTON: So I think, to Jill's comment, I absolutely agree on that. Right now we are -- hence the SEFs are offering NDF trading, the FCMs are not generally set up for clearing even though we've seen a few clear trades go through the NDF space. But you do have this timing mismatch, where we had this sort of longer runway with rates and credits, where first we went to clearing, then we got to October 2nd, and then you the MATs come in, in February and March, so there was actually -- there was some time to allow four people to get set up with their FCMs than (inaudible) for SEF to get turned on, and get ready to go. If you had a clearing mandate let's, you know, call it, sometime in the first quarter, and then there was an immediate MAT right on top of it, I think that creates a real squeeze point. And obviously, you guys were thinking about it, but you need some separation of those two, just because people won't be able to move that quickly, I would think.

COMMISSIONER WETJEN: Based on your experience, George, what would be a reasonable amount of time, between the mandate becoming effective and a trading mandate?

MR. HARRINGTON: I think -- I mean, I think 12 to months of separation between the two, to really get set up, I think is fair. I'm like, you know, to Jill's point, the trial is playing a sort of essential role in that credit checking facility, and that's not what's set up right now, because there's no credit mandate. So, yes, you have to trade them on SEFs, but you are still settling OTC under ISDA contracts, and you are not doing any of the things that are happening in credit rates. My estimate would be 12 to 18 months.

COMMISSIONER WETJEN: Paul?

MR. HAMIL: Thanks. It was just groovy to follow through on the theme of the unfinished business, on the rates and credit side. I think there's been a lot of focus on access and customer access, and fragmentation, and I think we are in danger here of talking about SEFs as is if they are a mature thing, and we can just apply them to different products in particular.

I mean, what we see is, there remains meaningful non-compliance by the SEFs, or many SEFs, with the rules, which in the area of access for customers, and if we are truly concerned about complexity there and fragmentation, then I think there needs to be some real focus on resolving the fragmentation that exist just within the SEF world, as a result of the way that some SEFs have chosen to apply their impartial access standards.

COMMISSIONER WETJEN: Kim?

MR. DAWLEY: A couple more comments. You know, one of the most frustrating -- one of the most frustrating things, I think, both we and our clients have experienced, is really the lack of clarity around the mandate. You know, I just -- I need folks to appreciate --

COMMISSIONER WETJEN: Mike, we are having trouble hearing you. I'm sorry.

MR. DAWLEY: I need the Commission and staff and all the regulators to appreciate the fact that the build out for an FCM to connect all these CCPs out there is a pretty big deal, assuring that margining methodologies work, and that risk management procedures are sound, and that default procedures are sound, and you have to understand that we are dealing with a resource-draining tsunami right now.

With Australia, and Germany, and the U.K., and the U.S., and Japan, it's a lot of work right now to get ready to connect to these clearinghouses, so I think we just need to be thoughtful around the timing of all this, and that's from the FMC perspective. Our clients are facing the same thing, they have tech build outs and infrastructure changes that they need to make also, and I just really can't stress enough how important it is to try and help clarify the timing, so people can plan out how they are going to build out to all these changes.

And the other thing, I just want to stress one more time, is the fact that there is a lot of unfinished business out there, and I think we've got to deal with some of these huge issues that relate to client clearing. One being 173, and the other being the capital issues that really affect the client's ability to clear. They are just limited FCMs left out there, and if any of these start to get out of the business, it can just create a chain reaction where you could really add to systemic risk, so.

COMMISSIONER WETJEN: Kim?

MS. TAYLOR: I wanted to follow up on some of Mike's comments around the capital requirements. I do hear a lot these days about the impact of the supplemental leverage ratio, the SLR, and the way that it imposes higher requirements on trades that are cleared versus trades that are not cleared, and higher requirements on trades that have collateral held against the exposures, versus trades that don't have collateral held against the exposure.

So I do think there are some serious inconsistencies in the way that those requirements have emerged, and the way that they are being imposed in the U.S., in particular, with higher, kind of percentage coverage standards, higher ratios, that are working against the benefits of clearing from a capital perspective, so I can't agree more with what Mike is saying in that regard.

COMMISSIONER WETJEN: Supurna?

MS. VEDBRAT: I just want to, you know, second what Michael said on the readiness. You know, we wanted to be able to voluntarily stop to clear NDFs in the January timeframe, probably because of -- in anticipation that bilateral trades may become much more expensive, because if the capital requirements for the dealers, you know, but our observation has been that they are very, very FCMs that are willing to -- or are ready to be able to clear NDFs and, you know, from a client's perspective it's very difficult for us to like, clear a few trades, and not look at our entire book of business.

And then just, you know, one point that hasn't been raised, is around determination of your positions, I think, you know, David had highlighted, like the need to be able to have orderly online, currently, you know, my understanding from NDF, or clearly NDFs is that if you want to terminate a position, you know, prior to maturity, your line items actually don't disappear. So if you had a situation where, for some reason, an underlying client wanted to, you know, liquidate the position, either like, you know, move to another asset manager, or what have you, those positions would continue to exist.

You could mitigate the risk, but you can't actually eliminate the trades, so that to us, you know, is a little bit concerning, but we'd like -- especially if you have time, we'd like that resolved ahead of a mandate.

COMMISSIONER WETJEN: Gavin?

MR. WELLS: Thank you. I heard Supurna's comments. As you can appreciate having run an FX NDF clearinghouse for two-and-a-half years, funds are tight to develop new things. Many end users can be very helpful in defining what they need for compression, and that is ready and easy to build, we've learnt that with the interest rates swaps market, and we know how to do it in the NDF market. So there were an awful lot of people watching today and the coming weeks to decide whether money should be spent to develop those things, but it is a short delivery timeline.

With regards to connectivity for the end users, I also heard Supurna's concerns about the choice and ability of clients to access the CCPs. I think a lot of FCMs hide their light under a bushel, we have three FCMs live, as Rodrigo alluded to earlier, a forth FCM goes live next week. We have two FCMs who are live but haven't posted yet a full fund contribution, and thus don't show on our website. So that's six.

We have eight members in testing, of which three are FCMs, that takes it to nine, and we have seven members with letters of intent, of which are four are FCMs, taking it to 30. The view from them is -- or it used to be, we are waiting for the mandate after the 1st of October, and the 9th of October, they are sort of waiting to see the outcome, to see whether they should step out and show their light from their bushel, post the full funds and provide the full choice to the end user.

So I'm confident that in a very short

space of time, the functionality for packages and compression, and the breadth and depth of choice required by the end user to access the CCPs will be in place, certainly before the end of Q1 next year.

COMMISSIONER WETJEN: Anyone else? Mr. Chairman, you are on.

CHAIRMAN MASSAD: We are close to the end of the scheduled -- end of the first session, if there are no other questions, around NDFs, let me just maybe circle back to any of Brian or David, or Rodrigo, having heard all this, you know, have any further, you all want to add, or advise us on.

MR. O'KEEFE: You know, I think from staff's perspective here at the CFTC as I said, this is sort of a unique opportunity for staff, to understand these issues as we are trying to formulate our proposal. You know, anything that I've mentioned here, this is purely what staff is thinking at this point, putting together a proposal that makes sense, and being able to get this feedback today has been extremely useful, so we very much appreciate it.

MR. BAILEY: Just two points from my perspective, first I'm very interested in Supurna's last comment actually about the complexities of unwinding positions, and something that I think it should be teased out a little bit more. And the second point is, I guess one point we haven't really discussed is the appropriate maturity to which to apply clearing mandates, and that's something very interested in not -- encourage as there are public consultations, I know Rodrigo loves fan mail, so please get some consultation responses in, that talk to the appropriate maturities, because I definitely think we need to get that right, and therefore we need to some evidence to back up the maturities that are subject to the mandate.

COMMISSIONER WETJEN: Rodrigo?

MR. BUENAVENTURA: Oh. Nothing much to add; it was a very illustrative for me the discussion I picked up a couple of points that I think we should also follow up like one -- about defamiliarization of product definition that was mentioned before, and I'm interested on learning a bit more about that, but it was a very useful and interesting discussion for us. Yeah.

COMMISSIONER WETJEN: Okay. Well, thank you very much. And once again, thank you to both Rodrigo and David, as well as the new FX Sub-Committee Members, very helpful to have you here. And looking forward to continue discussions with the Sub-Committee, and also looking forward to the work product that we mentioned before. So, Ted?

CHARIMAN SERAFINI: Yeah. I guess we are going to adjourn now for the break and we'll reconvene at 3:34 for the Bitcoin discussion.

(Recess)

CHARIMAN SERAFINI: I'd like to call the GMAC Meeting back to order, and turn to Commissioner Wetjen to introduce the speaker that we have here today to talk about Bitcoin and the derivatives market.

COMMISSIONER WETJEN: Thank you, Ted. I think we'll just wait a few more seconds; we've people still sitting down.

CHARIMAN MASSAD: While we are waiting, I just want to say thanks to the folks who are going to be participating in the next Panel. Unfortunately I'm going to have to go in about 10 minutes, but really appreciate everyone's participation on this issue, and I look forward to hearing what I can hear today, and getting informed later, as to what was said, thanks. And thanks, again, Commissioner Wetjen, for organizing this.

COMMISSIONER WETJEN: Thank you, Mr. Chairman. We have our next panel here to discuss the topic of crypto- currency derivatives, and here to help us with that we have Jerry Brito from the Coin Center, the newly traded Coin Center, I believe. Professor Houman Shadab -- I hope I'm saying that right -- from New York Law School; Tim Byun from BitPay; and Leonard Nuara from TeraExchange; and Thomas Leahy from the CFTC

Staff.

So welcome to each of you. Thanks again for coming today, and I think we'll start with Tom who can go through some of the new and novel issues or challenges that have been raised by the filing, by TeraExchange, as well as through discussions with other platforms who appear to be poised to also try and submit a contract for listing. So, Tom?

MR. LEAHY: Thank you, Commissioner Wetjen. The agenda says I'm going to discuss the process for self- certifying --

CHAIRMAN MASSAD: Tom, can you speak up? And can I ask every -- it may just be me that's hard of hearing, but I'd appreciate if everyone can speak up.

COMMISSIONER WETJEN: It's not.

MR. LEAHY: Okay. So the agenda says I'm going to be speaking about the process for self-certifying Bitcoin derivatives, and I'm going to use our experience with TeraExchange as a case study, if you wish. So TeraExchange had self-certified a Bitcoin non-deliverable forward contract, subsequently listed that contract for trading on the following business day, in accordance with the self- certification procedures of Commission Regulation 40.2. It should be noted that any contracted listed, that is self-certified and listed for trading, pursuant to 40.2 has not been approved by the Commission.

Normally, staff conducts an in-depth review of a new contract after receiving the self-certification filing, to verify compliance with the Commodity Exchange Act. However, given the limited review time for a new product certification provided by the Commodity Exchange Act, Commission staff generally encourages DCMs and SEFs to send draft filings for innovative contracts prior to self- certification. This allows staff to raise issues or express concerns, to ask questions before the contract is listed for trading. TeraExchange provided the draft filings to Commission staff.

With any new contract, staff assesses

the contract terms and conditions to determine its compliance with core principle three, that is, is the contract not readily susceptible to manipulation. Appendix C to Part 38 of the Commission's regulations is referenced as an acceptable practice for core principle three.

For cash settled contracts such as the Bitcoin's swap, self-certified and listed by TeraExchange, the cash settlement price should be not readily susceptible to manipulation, it should be reflective of the underlying market for that commodity. In addition, it should be a reliable indicator of the cash market price, and acceptable for hedging.

Staff raised questions about the Bitcoin index that TeraExchange initially proposed to use, to cash settle its contract. In this respect, there are very few prices used to calculate that index, and the calculation methodology might result in an index that is not robust. So TeraExchange responded to staff's questions by developing a proprietary index that addressed those questions. TeraExchange -- the Tera Index uses inputs from several Bitcoin exchanges, and it is calculated using a volume- weighted methodology that also trends outliers.

Back testing of the index showed that the index consistently reflected prevailing Bitcoin prices, and that the index was not influenced by outlier prices. Staff also raised questions with respect to core principles 4 and 5, which are, monitoring of trading, and the ability to obtain information respectively.

Core principle 4 requires for SEF to be able to monitor for price abnormalities in the index, and requires methodologies to resolve the threat of manipulation or distortion. Core principle 5 requires of SEF to have the capacity to carry out international information sharing agreements that the Commission may require; so TeraExchange provided a demonstration to Commission staff concerning how they would monitor trading activity in the Bitcoin market, and that they had contracted with the -- a third party for regulatory services including market surveillance.

In addition, TeraExchange entered into an information sharing agreement with each Bitcoin exchange that provides prices for the calculation of the Tera Bitcoin Index. And Tera made signing information -- and information sharing agreement a precondition for inclusion in the Tera Index. Having largely addressed staff questions during the draft review process, Tera Exchange self-certified their Bitcoin non-deliverable forward swap contract, and is currently listed for trading. Thank you.

COMMISSIONER WETJEN: Thank you, Tom. We are going to go a little bit outside of the order of the agenda, I think it might be more natural to have Lenny speak next, just because he represents TeraExchange, who obviously is listed, and designed a contract. So, Lenny, do you want to go with your presentation?

MR. NUARA: Sure. Thank you, Commissioner. I'm Lenny Nuara from TeraExchange. I just want to first thank Commissioner Wetjen for this opportunity to speak. It's been a number of months that we've been working with the staff here, and as Tom just spoke about. We originally started this back in March, and it's been a great process, that involves a lot of people, and we'd like to recognize the staff for the amount of time that they gave us in working through this. So today --

COMMISSIONER WETJEN: Lenny, a little closer to the mic, please?

MR. NUARA: Sure. Today we are going to speak about the demand for this instrument, why we created it, the process, the self-certify I'll touch on briefly because, Tom Leahy just did a great job at that. I'll talk about how the contract actually operates, and then how it's traded on TeraExchange, so we can just go to those four things, and then we can get off to the other speakers.

So we have some slide that they might want to turn on. Look at that. Thank you, in the backroom. So first off, the demand for the U.S.

dollar Bitcoin nondeliverble forward. The Bitcoin community which you are going to hear a little bit about from my fellow speakers here, is much large and much broader than most people realize, there are merchants accepting bitcoin as a method of payment. There are payment processors, one of which is here today, that has 40,000 merchants worldwide accepting payments in bitcoin.

There are miners, these are miners not with hats and picks, but nonetheless that's the phrase in the marketplace. For those that are generating the bitcoins, and there will be a little technical conversation about how that happens. There are wallets, places that store your digital commodity, you'll hear that phrase in a little while as well from some of my colleagues. And there are investors in the bitcoin industry itself, that are investing in the infrastructure of bitcoin technology, as well as those that are investing in the bitcoin themselves, similar to investing in gold, or platinum or silver.

The point to be made here is that

trading of bitcoin, I mean, there are various exchanges that TeraExchange connects to, and is rather volatile. There is that volatile calculation of 3.57, if you fancy that or you can say that bitcoin, on average can -- the trading can be 3 percent difference every day; 3 percent market change on a daily basis, sometimes more sometimes less.

Because of that, because it is being accepted widely, because it is being used by the diversity of players that you spoke about; because it is a payment mechanism, again, that Jerry and Houman will speak to, our payment mechanism, it doesn't have the same friction that, let's say, using regular banking channels or otherwise, there's a greater acceptance for electronic and e-commerce platforms.

There's a great demand for some regulate type of risk transfer solution, namely swaps or other futures products, or otherwise, and regulated because institutions are utilizing these products. This is not a platform or a product --

TeraExchange is not a platform or a product for the trading by retail customers, it is an institutional- level swap, execution platform. Institutions are the user of the product, and institutions are looking for a way to hedge the volatility that currently exists, or take a view of -- with regard to the direction of where bitcoin price is going.

So the process that Tom so neatly just described, for us started back in March. We did provide drafts; is the phrase that Tom mentioned, and we've had numerous discussions with the staff over the ensuing months from March until this, September 11th. And the key features of those conversations were to make sure that TeraExchange, the product, the underlying or otherwise met all the core principles that a swap execution facility must satisfy. In particular the reference rate which is the rate that Tera Bitcoin price index is not readily susceptible to manipulation.

And in particular, neither is our swap market, so both need ongoing oversight and surveillance. We utilize the NFA for some of those services. We utilize the information sharing Agreement that Tom mentioned with our contributing execution -- excuse me -- Bitcoin execution venues to provide us information. We self-certified on September 11th, which was not that long ago. And our first trades actually were yesterday. The market is going to lift off slowly as most new markets do.

We are on boarding customers and clients daily, as we speak, that want to start to trade in the space. The contract itself is a bilateral, non-cleared, different from this morning, so it's not -- not an issue of clearing, but it's a bilateral, an un-cleared trade that has credit support, annex to support the collateral, of delivery by either side to support the trade. It's non-deliverable.

Now Bitcoin Exchange, this is U.S. cash settled forward. The forward contract is executed in initial amount, similar to as described this morning, and it follows the track of what would ordinarily be a non-deliverable forward or another type of forward contract. Dollars are exchanged, the contract maturity to settle the difference between the contract forwarded rate, and then ultimately the settlement rate which is determined by the Tera Bitcoin Price Index, which I described earlier, and I'll provide a little bit more detail in a minute.

So it follows or tracks traditional non-deliverable forward. Again, this one is a non-cleared instrument. The Bitcoin Price Index, the Tera Bitcoin Price Index is something that, well, we spent a lot of time working with the staff here, to firm up. We originally had some ideas back in March, and they were not as firm and as robust as they could have been, and so we proceeded to build our own. And we proceeded to connect to the variety of venues worldwide that are trading bitcoin (inaudible) the underlying, and we started to build a tool that would pull that data in, and normalize that data to essentially neutralize anomalous data or outliers.

And also to limit the influence of divergent numbers -- divergent prices coming through from other Bitcoin Exchanges, mainly to mute the possibility that there could be manipulation in another exchange, and that manipulation essentially affecting the index, which will in turn, affect the contracts on our marketplace.

That took quite some time, and including back testing numerous times, in both internally, and also submission of that back-testing data to the CFTC. And the staff has the full data to analyze that. The index ultimately becomes, what is the fair value of Bitcoin's spot price without having specific reliance on one exchange or another, where essentially is a composite. And it leads to a mark-to-market price, and it leads to the ability of the Escrow agents and the custodians as well as others, to have that number for margin and collateral purposes on the trades.

And then finally, how is it traded? Because this is a bilateral contract it's traded as a request for quote with the option for liquidity providers to provide indications of interest, so that would light up the screen, obviously none of you can read this from a distance, that it currently is, but on the screen there will be prices posted by liquidity providers, and when someone hits one of those prices, it essentially turns up a request for quote to the counterparty, because there's counterparties involved there's a risk transfer issue there. That's show the collateral comes into place.

There are pre-trade credit similar what's required the clearing we adopted that concept, and there credit checks based upon the amount of deposit that the participant has for their margin account. Tenors range from one day all the way out to two years, that's not different that's what in normal NDFs. And then settlement at maturity uses the index that I just spoke before, and in the CME, it's actually the SDR, for the SDR reporting. So actually the trades that happened yesterday were reported to the CME after the trades were completed, and ultimately the files are dumped over to the NFA for their constant surveillance.

And so that's a quick summary of where we sit, and there's more slides by another presenter, I just don't know who is next. So, thank very much for the time, Mark.

COMMISSIONER WETJEN: Thanks, Lenny. Jerry?

MS. BRITO: Thank you, Commissioner Wetjen, for having me here today; and thank you to members of the GMAC. My name is Jerry Brito, and I'm the Executive Director of Coin Center, a recently-launched nonprofit research and advocacy center, that's focused on the public policy issues facing digital currencies. I would like to provide some background on the technology that we are discussing, explain some of the demand for the derivative products, and answer any technical questions that you might have.

So bitcoin is frequently described as a digital currency and, you know, while the description is accurate, it can be misleading because it's at once too broad and too narrow. It's too broad because bitcoin is a very particular kind of digital currency, it's a cryptography-based currency. Indeed it's the first of its kind. The description is also too narrow, because although currency is one aspect of the Bitcoin system, Bitcoin is more broadly an Internet protocol with many applications beyond payment or money transfer.

You can think of it like email or the Web, it's an open network to which anyone can connect without permission from a central authority. Anyone can send a message to anyone else, and on top of it, you can freely build any number of different kinds of applications, and so in that way it's like the Web, it's like email.

Online virtual currencies are nothing new. They have existed for decades, from World of Warcraft Gold, to Facebook Credits, they've been around for a long time, and neither are online payment systems new. We've had PayPal, Visa, Western Union Pay for a long time. So what is it about bitcoin and similar cryptography-based currencies that makes them unique?

Well, bitcoin is the world's first completely decentralized digital currency, and it's the decentralized part that makes it unique. Prior to Bitcoin's invention in 2009, online currency or payment systems had to be managed by a central authority. So for example, you could have had Facebook issuing Facebook points, or you could have PayPal ensuring that transactions between customers are reconciled. They provided that central authority. However, by solving a long-standing conundrum in computer science known as double- spending bitcoin, for the first time, makes possible transactions online that are person-to-person, without the need for intermediary between them. Just like cash.

Comparing bitcoin to traditional payments and money transfer systems, helps explain the distinction. So, before bitcoin, all transactions always require third-party intermediary. For example, if Alice wanted to send $100 to Bob over the Internet, she would have had to rely on a third-party service like PayPal or Bank of America. Intermediaries like PayPal, essentially, they keep ledger of account holders balances, when Alice sends Bob $100 PayPal deducts the amount from her account and adds to Bob's account.

Without such intermediaries digital money could be spent twice, right? Alice could send $100 to Bob by attaching a money file to a message, but just like with email, sending an attachment does not remove it from one's computer. Right, Alice would retain a perfect copy of that money file, after she had sent it, so she could have easily spent it a second time, sending it -- the same $100 to Charlie.

So Bitcoin's invention is revolutionary, because for the first time, the double-spending problem can be solved without the need for a third party. Bitcoin does this by distributing the necessary ledger, among all the users of the system via a peer-to-peer network. Every transaction that occurs in the Bitcoin network, is registered in the distributed public ledger, which is called the block chain. New transactions are checked against the block chain to ensure that the same bitcoins have not been previously spent; thus eliminating this double-spending problem.

The global peer-to-peer network composed of thousands of users takes the place of the intermediary. Alice and Bob can now transact online without a third-party intermediary. And so how is this possible? Well, with bitcoin transactions are verified and double spending is prevented through the clever use of public key cryptography. Public key cryptography requires that each user be assigned two keys. One private key, that's kept secret like a password, and one public key that can be shared with the world.

When Alice decides to transfer bitcoins to Bob, she creates a message, and it's called a transaction, which contains Bob's public key, and how many coins she is sending. She then signs it, with her private key, and broadcasts this message over the entire network. By looking at Alice's public key, anyone can verify that the transaction was indeed signed with her private key, that is an authentic exchange, and that Bob is the new owner of the funds.

The transaction, and thus the transfer of ownership of the bitcoins is recorded, time-stamped, and displayed in one block of the block chain. Public key cryptography ensures that all computers in the network have a constantly updated and verified record of all transactions within the Bitcoin network, which prevents double spending and fraud. Out of technical necessity, transactions on the Bitcoin network are denominated -- are not denominated in dollars or euros or yen as they are on PayPal, but are instead denominated in bitcoins.

This makes bitcoin a virtual currency in addition to a decentralized ledger. The value of the currency is not arrived from gold or government fiat, but from the value that people assign to it. The dollar value of bitcoin is determined on open market, just as the exchange rate between two different world currencies. The total number of bitcoins that will ever be issued, as well as the rate at which they are algorithmically released into the ecosystem is not determined by any person, company or central bank. But has, instead, been predetermined at a time the protocol was established.

To date, bitcoins have represented money out of floating exchange rate, and the Bitcoin network has been employed as a fast and inexpensive means of money transfer or payments. But there is no reason why particular bitcoins could not represent something besides money. If we conceive of bitcoins simply as tokens, then other applications become apparent. For example, we could agree that a particular bitcoin, or indeed an infinitesimally small fraction of a bitcoin so as to allow for many tokens. We could, you know, we could all agree that a particular bitcoin represents a house, a car, a share of stock, a futures contract, or an ounce of gold. Conceived of in this way, the bitcoin block chain then becomes more than just a payment system.

It can be a completely decentralized and perfectly reconciled property registry. Bitcoin is therefore an open platform for innovation, just like the internet itself. In fact, Bitcoin looks today very much like the Internet did in 1995. Some dismissed the Internet then at a curiosity, but many could see that such an open platform for innovation would allow for world-changing applications to be built on top of it. Few in 1995 could have foreseen Facebook or Skype or Netflix, but they could see that all the building blocks were there for some amazing innovations.

Bitcoin is like that today. We can't conceive yet what will be the killer applications, but it's pretty obvious that they will come. Bitcoin faces some challenges however, and chief among them is regulatory uncertainty, if we think back again to the early Internet, it was not until the government made it clear that it would pursue a light- touch regulatory approach, that Internet innovation really took off. Bitcoin today is in need of similar commitment from government. In the case of financial regulations specifically, bitcoin would benefit from the development of hedging instruments.

As I explained earlier, bitcoin's values are determined on open market, that market is still developing, and it's not very liquid, and as a result it has been historically volatile. Merchants and merchant process and services, exchanges, and many other businesses and institutions who want to build on top of the Bitcoin platform are in search of good hedging instruments. Additionally, as Bitcoin matures, it's root technology, a cryptographically, verifiable distributed ledge system, could be employed as a clearing mechanism in financial markets and other applications.

While unprecedented, such a use of the technology could lead to important new efficiencies and innovations. As regulators begin to consider these developments, they should do so with an open mind, and avoid undue restrictions that could have unintended consequences, including limiting innovation. So, thank you for your time, and I look forward to your questions.

COMMISSIONER WETJEN: Thank you, Jerry. Houman?

MR. SHADAB: Okay. Thank you so much for having me here, Commissioner Wetjen. It's really a pleasure and an honor to be with all the panelists and the guests in this room. And thanks to GMAC for organizing this hearing as well.

So my name is Houman Shadab, I'm Professor of Law, in New York Law School, and my research happens to focus primarily on derivatives, and more recently crypto coins such as -- crypto currencies such as bitcoins. So it's so serendipitous to be here today.

I as asked to speak about the regulatory challenges from CFTC's perspective, facing Bitcoin. Basically I see them as three, one sort of, what is Bitcoin from the Commission's perspective. What's the nature of it? Second of all, what is -- how do we apply the traditional distinction between futures and forwards to Bitcoin derivatives, where in cases where it could be ambiguous? And finally, how do we regulate, not derivatives that reference Bitcoin, but derivatives that are executed and cleared and traded, and settled and so forth, through the block chain, through the Bitcoin network or protocol.

So the first point I want to make is that, Bitcoin is best understood, not actually as digital currency, but as a digital commodity. Okay, certainly the primary application or use right now of bitcoins, perhaps besides investment or speculative purposes, that only needing itself, are for payments and there are a growing number of merchants that accept Bitcoin, and that certainly is an important aspect of what it's used for.

But Bitcoin fundamentally, as a Jerry Brito just noted, is the method of transmitting messages over a block chain just to -- what's also called a distributed ledger network. And because of that, many software developers right now are currently developing applications that go beyond payments, including things that are called sort of smart contracts, which essentially allow two parties to trade in an automated fashion, which is also decentralized, secure, and sort of basically, publicly verifiable, through the block chain.

So, because of all that, I think that it's best to view bitcoins as essentially an exempt commodity, more like gold and silver, and less like excluded commodities under the Commodity Exchange Act, such currencies or other financial interests. I think to think of bitcoin as just a currency would be to think of the Internet just like a network for sending email. It's true, but it's just too narrow, and perhaps --

COMMISSIONER WETJEN: Houman, I don't mean to throw you off, but you made that distinction between excluded versus exempt, help understand a little bit more why that might matter.

MR. SHADAB: Yeah. I think it might matter from the perspective of regulators because, first of all, it wouldn't bring into the equation sort of regulators, including banking regulators, and monetary authorities that may be more concerned about currency type issues. Second of all for the more nitty-gritty details with respect to the Commodity Exchange Act, being an exempt commodity pretty much means that bitcoin would fall and look more like a intangible commodity that can be physically delivered, as opposed to, let's say, a currency.

So we wouldn't think -- when we think about regulating many bitcoin swaps, or bitcoin's futures versus forwards, I think what we think about are the deliverability aspects of it, and not so much whether, for example, a bitcoin swap falls under something that looks like the NDF classification. Or something that looks like the Treasury exemptions for physically-delivered FX -- certain FX futures and forwards.

So, it's subtle, at the end of the day

it might not matter too much for how the regulatory structure wraps around it -- wraps around Bitcoin, but I think that for a bigger-picture idea, it is sort of important to classify. I think you should get that conception right about what exactly Bitcoin looks like from your Commission's perspective.

And so given that's the case, the sort of second challenge is, how do we apply that traditional distinction between futures and forwards, to this digital commodity, Bitcoin, and often we'd distinguish our (inaudible), and the Commission distinguishes between futures and forwards based upon whether or not they are deliverable, physically deliverable or cash settled. Whether or not the contracts were standardized, whether or not the platform is a source of a central counterparty, and whether or not maybe the contracts are fungible as well.

And that's important, of course, with respect to futures and forwards, because forwards are basically not -- do not fall within the jurisdiction of the CFTC, certainly not like futures contracts; and if you look at some of the platforms that are currently being developed with respect to trading bitcoin derivatives, some of them sort of fall in between, and it's hard to determine, I think whether or not certain contracts are futures for bitcoin, or maybe forwards.

And for example, so maybe one case study here, setting jurisdictional questions aside, is that ICBIT, or ICBIT platform, which calls itself a futures exchange, which says it's selling bitcoin futures, and under that -- and the contracts are relatively fungible, but basically one, two, three months standardized futures contracts, of everything bitcoin. On the other hand, the platform doesn't serve as a central counterparty and it entails physical delivery.

So maybe that kind of contract -- that kind of platform, again, setting aside jurisdictional issues, it may or may not fall under the scope of jurisdiction of the Commission.

And something to think a little bit more deeply about, recognizing though that even though Bitcoin is digital, and to that extent may be intangible, it can still be physically delivered just for the same reason that the Commission recognizes physical delivery in a sense of other intangible commodities, such as pollution rights, for example.

So, that is my second general, regulatory challenge. And finally, all the foregoing that I've talked about really applies to derivatives written on bitcoin; whether it's a bitcoin futures, or bitcoin swaps, or bitcoin forwards or option, but there's another type of -- sort of, bitcoin derivative, and that's really a smart contract. A derivative that's enabled and basically that goes through the Bitcoin block chain system.

And what's interesting about these contracts is that, like many other aspects the financial markets are sort of programmable ahead of time. So maybe if you had a bitcoin -- or excuse me, a block chain futures, or a smart futures contract, you could program, because the futures are already sort of by definition, sort of standardized, all of the terms of the agreement except for the price, so the quantity of the maturity and so forth, and then maybe the international processes, of the software application that applies to the block chain, could help determine the price.

And although many of these smart contracts, platforms and applications are currently works in progress, many companies, organizations are developing underlying codes to implement these types of agreements. Two, sort of, aspects of these, or two or three aspects of these that are -- that programmers or developers are starting to identify as being important are one, multi-signature authentication. Just sort of verify and authenticate different aspects of the agreement, or different types of their performance as the contract proceeds.

Escrow services as well, to sort of

segregate and safeguard the party's capital or other assets, and sort of -- and Oracle -- what's called an Oracle, which is basically a part of the application or a separate one, that sort of interacts with the outside world to essentially incorporate or provide the data feed to the agreement, so that it sort of operates properly. And certainly in the financial instrument space we could see how interacting with the outside world, including prices and so forth would be important to execute that.

Certainly the derivatives markets are very -- already use a lot of software and are very tech-enabled to begin with, but nonetheless I do think that the Bitcoin block chain could provide sort of unique functionality, unique advantages that currently are not fully being utilized or even available through traditional, technological means if that's not a bit of a oxymoron. One is maybe because the block chain doesn't use intermediaries, maybe fewer intermediaries, at least, the transactions could be traded, cleared and settled much quicker, and maybe at a cheaper cost as well.

Furthermore, you could probably build in, let's say, the 23 core principles that Futures Exchanges are required to abide by into the very code itself. And if you embed those types of rules into the agreement ahead of time, one question is, well, maybe that these types of transactions should qualify for an exemption under traditional rules that would, otherwise be applicable to a contract that essentially provided for, say, future delivery of a commodity, whether it's actually physically-delivered or cash.

Finally another potential advantage of a bitcoin futures -- of block chain futures is that it could actually allow for integration with other markets better than current futures markets too, in the sense that if there is sort of one universal block chain, or block chains interact with each other on a global basis, it can allow for futures markets to be more intricate with, lets say, securities markets, and even for futures markets maybe be more integrated with commercial markets, and you can imagine at some point that a producer -- a physical producer of agriculture, would automatically purchase, in a sense, or be entered into, in order for a futures agreement, if the projected price of the commodity goes below a certain point in the future.

So, my last sort of just conclusion here is that given that it may be possible, and certainly many of these concepts are, sort of potentials and projections about what technology may look like in the future which is always sort inherently difficult to doo. But given that it may be possible for regulatory policy objectives to be achieved through the block chain, to be achieved through software, through code, and embedded into the contract rules themselves, the Commission may want to think about or consider exempting these types of agreements from the full scope of the regulations to sort of balance consumer protection from market stability and systemic risk with innovation and progress.

So thank you so much for hearing my remarks, and I really look forward to the discussion.

COMMISSIONER WETJEN: Thank you, Professor. Tim?

MR. BYUN:: Yes. Good afternoon, everyone. Thank you for inviting me. My name is Tim Byun, Chief Compliance Officer of BitPay. Thank you, Commissioner, and members of GMAC for this opportunity.

I have just maybe five minutes of a prepared comments, and also to address your two initial questions, but I would love to address any further questions that you may have, and I think based on your look, with the distinguished panelists here, there's going to be quite a few questions.

But let me please start off with the next slide, please. I just wanted to give you a short introduction of myself, because you know, I think I'm very fortunate to be sharing some remarks to you today. As I mentioned, I serve as the Chief Compliance Officer, but I also spent five years at Visa Inc., as their Anti-Money Laundering Officer, and Head of Credit Settlement Risk. Publicly disclosed under 10-Q, Visa has about $50 billion of credit risks on any given day. Prior to that, I was a regulator for the Federal Reserve Bank, and the FDIC for about 15 years plus. I also worked for a commercial bank in their Credit Corporate Underwriting Department. So I hope my background can shed a little more light, specifically on the next slide.

I want to get into your first question of, how is the adoption of bitcoins going in the marketplace. And we have some visibility of that because we are a merchant processor out there. In short, as on the next slide, as a merchant processor, I want to let you know that we were founded in May 2011. Bitcoins were, the whitepaper was conceived in 2008, bitcoins or the first version, or first block of bitcoins came out in 2009, so by that standard we are actually a veteran out there, but we are a very small startup. We have 40,000 merchants worldwide, on the next slide we have about $32 million of investment capital from our venture capitalist, and we have just a few of those names out there that you can see.

Index Ventures from the U.K., Founders Fund led by Peter Thiel. Horizons Ventures supported by Li Ka-Shing; RRE associated with prior CEO of American Express and Felicis Ventures. We have about 75 employees worldwide, BitPay is headquartered in Atlanta, and we have colleagues all over world as you can see.

On the next slide, is the adoption slide. Here is a glimpse of, as up-to-date to August 2014, how many transactions we do per month, and as you can see we've been hovering about 40,000 but from a year ago, it has significantly or exponentially increased. And so we see adoption from our point of view being very robust.

I want to also present you this public chart from Block chain where they measure or provide charts on the entire Bitcoin system, and you could see the total transactions there steadily increasing over time. This is a two-year look-back chart. So I think the adoption is great. Is it in the Main Street? No. Is it in Wall Street? It will get there, but currently, no. So it is very experimental currently, I think you are seeing significant start-up capital being invested in the marketplace.

I believe year-to-date 2014, there is about $300 million dedicated or invested in Bitcoin ecosystem startups such as ourselves. And so it is progressing very nicely, or very robustly. Your second question asked to start, what is the possible use of derivatives or Bitcoin instruments? And I see it in kind of three categories, for Wall Street, for your market makers, or even ecosystem exchangers that need to build the infrastructure and idea of how to use bitcoins. And I think they will build up the ecosystem.

It could also be used by -- in Wall

Street for trading purposes. As a principle or an agent, it could be used as an alternative asset class for your money managers on the buy side. Corporations such a BitPay could use to hedge our Treasury operations, as we need to pay on the merchant side, or settle their transactions which we see every day.

For individual or sophisticated investors, they could diversity their holdings or even speculate, on bitcoins -- the prices itself. So I'm sure, especially in this conference room, you have a better perspective of what's possible on a derivative scale. And with that, I'll leave it up to -- open for Q&A.

COMMISSIONER WETJEN: Thank you very much, Tim. We are now joined by Commissioner Giancarlo. I don't know, Chris, whether you would like to make a few remarks at this point?

COMMISSIONERGIANCARLO: (Inaudible).

COMMISSIONER WETJEN: Okay. First of all I open up to the group, I don't know whether any of the members have questions of panelists.

We could start there. I have a couple of my own. Mike?

MR. LESAGE: I just had a question, as far as, you know, and we had some pre-read that was from George Mason University, and the reference that was all, it kept referring to, it is a digital currency, and so I'm trying to get my head around, and it kind of made sense, I think it was a digital currency, but then as you were discussing -- looking at it, as opposed to swap, and changing that, the nuances around that.

So what I could see is, you know, a digital currency in how the valuation and using it to purchase goods, linked in there, but I -- if you could speak a little bit more, because it wasn't clear to me, you know, as you referred to it being a digital commodity instead.

MR. BRITO: Well, let me answer first, and I'm sure Houman would address that. So, it's obviously a digital currency in the sense that you know, there are things that are denominated either in Bitcoin prices or more likely, it's going to be denominated in dollars and thence can have a conversion, and you can use it to pay, and the first mostly-widely-used application of Bitcoin is payments. And so it definitely is a digital currency.

I think you can't stop but thinking of it as a digital currency. At the end of the day it's a token. You can use this token as currency, but there's no reason why you couldn't use that token as something else. You could use it to represent any number of things. And I think what Houman was getting at, and you can confirm this or not, it's that, because it is digital, these tokens are digital, this currency is digital, is programmable. So we could have a chance to -- normally, if I give you a $100, I just take the $100-bill give it to you, now you have it, now I don't.

With Bitcoin we can accomplish that for the first time online. I can now think of bitcoin without an intermediary between us, I give it to you, now you have it, now I don't. But we can introduce complexity into that kind of transaction, so it's not a simple transfer, we can do something that says, give this bitcoin to Mike only if the price of Google is over X tomorrow. And only if that happens does it get transferred. So that's a possibility that is available to Bitcoin.

MR. SHADAB: And just to elaborate, it certainly, it is a digital currency which is a lot more, and this is no doubt unique -- bitcoin is unique, it's hard to classify whether it's under a particular body of regulations, or just maybe be conceptually. But certainly in commercial transactions, financial transactions, I think that like any sort of software-enable transaction it can be used to sort of automate a lot of the processes, but what I think the block chain has, is that it makes the messages themselves be a type of contract performance. So lets say you take a loan through the block chain, then the borrower's funds could be sort of be automatically deducted from their account; whether it's monthly or annually or quarterly, or whatever it is.

At the same time, if the borrower were to say breaches a financial or a loan covenant, but the loan could be immediately accelerated which lenders typically have the right to do. In addition, lets say, the interest rate can change into a sort of performance pricing contract, again, sort of automatically, without the parties to engage in sort of active monitoring of contracts, legal enforcement, or sort of do any additional conduct, such as borrowers telling their lenders, hey, by the way, I just breached a loan covenant, and what are we going to do about it.

Now, there is a downside to that. I don't think contract automation in every case, and all the way through is the best thing for markets. Certainly software providers already scale back and pull back an automation which is even further possible because human intervention and manual overrides are -- sometimes are often, in certain context, better than a completely automated sort of contracts which pre-commit parties to arrange the scenarios that they may or may not know about ahead of time. But just to go back to that question, it's just -- it seems like the block chain name was more applications or functionality than transferring payments.

COMMISSIONER WETJEN: Lenny.

MR. NUARA: Thank you. So Mike, just on a more basic level as it relates to a swap. The swap here, or the swap can be pegged to an asset, and in our instance, the asset is Bitcoin. It's the Bitcoin that is -- we are getting the pricing data from a variety of exchanges worldwide, and we are establishing an index value to that, and so you could do a forward contract. You are doing the swap which instance is a forward, a non-deliverable forward based off that index value of the bitcoin. So you and I can agree today that -- you know, Bitcoin is trading today at 3.75, and you want to lock in at 3.50 because you -- you know, you have a large contract and you need to buy -- use a lot of it.

So you and I can lock in at 3.50 and then in a week, a month, or whatever, we look at the index, and thankfully the price is at 3.20. Well, then, you get the benefit of that, and I'll pay you the difference. Or if it's at 400, well then you are ahead and so you would just pay me back the difference. So it operates just like a regular NDF, but in this instance, the asset is that thing that we call bitcoin, it's the underlying asset. And in our application, 40.2, we labeled it just an asset.

It's, a digital asset is one way of calling it, or -- but the point is that it's an asset that we use the index to establish what the price is. And that, we put up swap -- structure around that, and it's in the very simplest way.

COMMISSIONER WETJEN: Okay. That's helpful. Dan?

MR. ROTH: One of the issues discussed in the paper involves the degree of anonymity available in the Bitcoin Exchanges themselves, and the corresponding potential for money laundering resulting from that. And I was just wondering if you could explain further the response in the paper to that concern. It didn't -- I wasn't sure that it was entirely satisfactory. I was just wondering what your thoughts are on that.

MR. BRITO: Sure. So on the Bitcoin -- so on the Bitcoin block chain, payments are pseudonyms, they are neither identified nor anonymous. Let me give you an example of that. So if you think about a cash transaction, a cash transaction is completely anonymous, alright. So, you and I can meet at Union Station and I give you $100, you give me a bicycle, we part our separate ways. I don't know your name, you don't know my name, there's no record of that transaction ever happening, and the time and place and amount, completely anonymous, that's cash.

Then you have a credit card transaction that's completely identified. The credit card issuers know your name, my name, and there's a record kept of the amount and the date and the time, sometimes even the purpose of the transaction, perfectly identified. Bitcoin transactions are in the middle, are between the two. So every Bitcoin transaction is recorded, the time, the amounts, and the two Bitcoin addresses from which, you know, payment went from address to the other. And that is recorded in the public ledger known as the block chain, and it's public.

Anybody at any moment can go online and see all transactions that are happening right now, that have ever happened, and there's a perfect record of all transactions, available to you, to me, to law enforcement, to anybody. Now, these addresses are simply random -- essentially random strings of letters and numbers; are basically like an account number. So it's from account number X, Y, Z, 1, 2, 3, this amount at this time, to this other account number.

So you have a perfect record, but it's not tied, necessarily to a particular identity. Now, you have exchanges, so if I want to acquire Bitcoin, I have dollars in my bank account, I need to acquire -- I want to acquire Bitcoin so I can use something of one of BitPay's merchants. What I'll do, is I'll go to an exchange. I happen to use something called Coinbase, it's a very popular service. Coinbase complies with Finsense Regulations, and so do they AML and KYC so they identify who I am.

At that moment I am tied, my identity is tied to an address. And so it's actually -- there are some other folks I could refer you to in the computer sciences, who are looking at how easy or difficult it is to de-anonymize Bitcoin transactions, as it turns out, it's a lot easier than some folks think it is.

MR. BYUN:: Could I add a few comments to that, and hopefully shed some light. Yes, Bitcoin transactions are synonymous, or in your words, anonymous, but it's really, what you are really seeing is real time, almost like a ticker that goes across the NYSE ticker. You see IBM getting crossed 100 shares at $104, but you don't see on the ticker who is buying or selling that.

When you eventually pull that record and find the broker-dealer you can see who the broker dealer was.

If you examine the broker dealer you could see who the ultimate party is. Similarly, when Jerry buys something at a merchant, BitPay, as a merchant processor, conducts the KYC on the merchant, our customer. So we want to know what do they sell, who owns the shop, what's their tax ID number, so we conduct a KYC on that.

Coinbase is a money transmitter defined by Finsense Virtual Currency Guidelines that came out in March 2013, as a money service business, Coinbase as well as other money services businesses, the more traditional ones being Western Union, MoneyGram, must conduct KYC on their customer, which is the consumer or shopper in this case, Jerry.

So I think it's a bit of a misnomer that it's completely anonymous, but I want to make sure that the ticker going across that is on the block chain, that is in real time, you don't know who is on the underling -- who is making that transaction, underlining it.

MR. NUARA: One last point on that, Tom Leahy mentioned earlier that Tera has to have an information sharing agreement with every exchange that provides pricing information to us, to establish index. Every one of those exchanges in that agreement has agreed to provide us the details and they all do AML, KYC on all of the people trading on each exchange. Exchanges that do not provide that information to us, cannot feed us information. So, we are not ascribing to anonymous trades that are happening out in the market place.

COMMISSIONER WETJEN: Supurna?

MS. VEDBRAT: I have just, you know, a basic question on the mining component of Bitcoin. Like, you know, if you could just, like, explain a little bit like what happens there, because it seems like from the pre- reading, you know, there's a limited number of bitcoins there, and then over the next like, you know, 120-odd years, you know, they'll get unlocked based on computing power. Or, you know, for whatever transaction verification. So, I was interested to hear like, is there -- is that public information? And are you taking on variability of like -- you know, your bitcoin currency being devalued or diluted, unexpectedly? Because it's somewhat random, at least in the paper, that it's basically driven -- you know, it's incentive-driven, so how many people are going to be, you know, trying to unlock these bitcoins.

MR. BRITO: That's a great question. So, it's sort of a -- there's this idea that the processing power necessary to mine bitcoin is ever increasing. That's not actually the case, it's variable. And I'll tell you what the variability is. The Bitcoin network essentially looks to see how many bitcoins are being issued in a given time period. Usually it's two weeks. Every two weeks it looks, and this is -- when say it, it's very difficult because there's no central servers, it is all of the machines, collectively, connected following a protocol.

They look to see how many bitcoins have been issued. If it's more than should have been issued, the math problem that must be solved becomes harder. If less bitcoins have been issued than should, the math problem gets easier. But what ends up happening is that on average, a new block is mined every 10 minutes, and every 10 minutes 25 new bitcoins are introduced into the money supply. And that is predictable.

And so it's algorithmically self-regulated. You could -- if you had many more miners come in to the ecosystem, maybe for a few days you might get a bit more bitcoins than you -- than average, but it would soon revert to 25 bitcoins every 10 minutes. So it's self-regulating in that way. And if miners leave the space, the problem will get easier and, again, it would always revert to that predetermined algorithmic grade.

MS. VEDBRAT: So who owns that protocol?

MR. BRITO: It's open source, so it is

-- nobody owns it, it's an open source protocol anybody can use. I know, it's --

MS. VEDBRAT: I mean, it just seems like, you know, you mentioned that, you know, there's a dependency of everyone being -- all these, you know, bitcoins being -- in a sense is being connected via this protocol, so just like I was trying to understand like somebody could join, how is that regulated?

MR. BRITO: Yes.

MS. VEDBRAT: If it's all open source, and nobody owns it.

MR. BRITO: Great question, so --

MS. VEDBRAT: And you kind of need some -- you know, some sort of validation or verification before you can join in.

MR. BRITO: Very good question. So it is consensus-based, so if I try to join the network, and I set my -- I rewrite -- since it's open source, I can rewrite it say, I'm going to generate a bitcoin a minute. You know, a lot of bitcoins, and I join the network. The first thing that -- so it's a peer-to-peer network, you join, first one pair next to you, one-to-one then you join other pairs; the first pair I join is going to shake my hand, look at me, look at -- that I am trying to do that, and is going to reject me.

And so it's consensus-based. If you are not following the rules, the first thing that a Bitcoin client does, is look at the pair it's connecting to and see, are they following the same rules I am, if not, it's rejected. If they are following the same rules, you get to join in the peer-to-peer fashion.

COMMISSIONER WETJEN: Doug?

MR. HEPWORTH: Two questions. The first is, how do you know there is no fraud or back doors built into the initial code? And then the second is, if all the goody is coming from the block chain, why not just put dollars on the block chain?

MR. BYUN:: Good questions. So how do you know that there isn't some secret back door? You know that the way -- so I presume that many of these TVs that we are using here to day, and this projector, run on open source software, they run on Linux probably. So how do we know that Linux doesn't have a back door? The answer is, that all open source software by definition is open and public to scrutiny and review by anybody who wants to look at them.

So, there are a couple ways that you could do this. In a completely trustless manner, what you do is, download the source code yourself, review it and verify for yourself there are no back doors. Now I'm not a computer programmer, I have to trust some of the world's, you know, foremost cryptographers who have looked at it, and have given it a thumbs up. But essentially it's open, and verifiable to anybody, so that's how you can -- it's actually probably -- I trust it more than I would trust a proprietary software systems, where you have to trust the company; that is the (inaudible), and there's no way to peek inside.

Your question is, why not dollars? I would sort of turn it around and say, how would you do that with dollars? You can imagine -- so you have to have a token that can be transferred between two different parties, right? That token, we call it a bitcoin, because there's a limited amount of them, the value floats, relative to the dollar; you could imagine the U.S. Government pegging the dollar to bitcoin, I doubt that will happen. And so that's how you would accomplish it, but there's no technical way, really, that you could technically peg it to a dollar without having some third party be the guarantor of that peg.

But I think that's an excellent question, and I think it is possible, and we have a live example of Ecuador starting to do that now. So they actually want to tie their national currency using the Bitcoin protocol, and the validation system, and as you know -- as you may know, the Federal Reserve is looking to modernize their financial system ACH Fedwire, and I think it could be very feasible.

I see it as -- you know, just like

Bitcoin itself, we are in the experimental stage. The Fed could do a small experiment, tie a few U.S. Treasuries to the Bitcoin protocol, tie it as a U.S. Treasury, and let that be exchanged and validated; because the core of Bitcoin is really just a validation system. The real power of the Bitcoin is to say that I no longer have that one bitcoin, I sent it to you, and now you have it. And all the miners are putting their power, and it's actually not a peer-to-peer, I think it's a competitive peer mining ecosystem.

They are all trying to first calculate the winning formula, or output so that they can get the 25 bitcoin reward. So there's a lot of losing miners out there, that spend a lot of expensive electricity, but they don't win that reward, and they hurry up and try and win the next reward. So, you know, as some are unsuccessful, they are going to drop out. Some are going to be more successful, because they have more computing power, maybe they set up shop in Seattle where the electricity is cheaper. You know, it's a very open market. But I think your question is a possible future use of bitcoins.

MR. HEPWORTH: I think I was just asking if -- it seems to like it's a -- it's just a distributed ledger that disintermediates.

SPEAKER: That's right.

MR. HEPWORTH: So if you can have a token that represents the bitcoin, couldn't you have a token that represents the dollar on yet a separate block chain.

MR. BRITO: And that is what Ecuador is doing, yes.

MR. HEPWORTH: Okay. But it's not -- it sounded to me like they were tying it to the bitcoin. Did I mistake that?

MR. BRITO: No. There are --

MR. HEPWORTH: It's just a separate -- it's a separate block chain?

MR. BRITO: Yes. It's a separate copied or mimicked Bitcoin protocol because it's a free source -- it's a free open source code out there. Yeah.

MR. HEPWORTH: Thank you.

CHARIMAN SERAFINI: David?

MR. WEISBROD: So, the material that we were reading distinguishes -- talks about the market being unregulated or subject to existing regulation. Where do you see this between those two, and what are the differences between the American perspective and that of Europe, or are there any differences?

MR. BRITO: That's a good question. So I think there's a misconception that Bitcoin is unregulated. I think since its invention, since day one, it's been regulated because it's subject to existing money transmission regulations and other consumer protection regulations, et cetera. So, it's definitely regulated in many different ways. I could go into detail about money transmission or consumer protection; if you'd like me to; or I won't.

Vis-à-vis other countries, it varies. There are some countries that are friendlier, there are some countries that are more hostile, so take for example, Russia is -- seems to be -- have a law preceding through its process that might make digital currencies legal. And I think that's largely because you are concerned about their capital controls.

You have other countries, such as -- I'm blanking now -- Amsterdam, that's the city -- The Netherlands, thank you very much, that have been especially friendly. The U.K. Recently, the Chancellor of the Exchequer, announced that he wants -- you know, he wants the U.K. and London to be the capital of Bitcoin Finance, and he wants to initiate the proceeding to figure out how to open up that regulatory space there. So there seems to be a bit of competition right now to attract the investment and attract that innovation.

MR. SHADAB: And I also think that from a regulatory perspective you have to think about different U.S., or whatever country regulators are going to view Bitcoin from their own perspective, from their wheelhouse, and they'll look at things that they are concerned about, in particular. So maybe the Consumer Financial Protection Bureau that thinks specifically about consumer issues, the Security Exchange Commission will think about investment issues.

So certainly from the SEC's perspective, whether you raise capital with dollars or dog biscuits, or bitcoin, you still have to abide by Securities' regulation, and we've seen a couple of relatively prominent, sort of frauds and Ponzi schemes that happen with bitcoin. And so coming back to the sort the Commission here, I think that, you know, I think that bitcoin is (inaudible) in a good way, that can still achieve the policy objectives while fostering really important innovations, in the marketplace through contract structure, and market structure as well.

And I think on some level that regulators need to let Bitcoin developers sort of put their money or their bit coins where their mouth is. And say, listen, if you think -- if there is a system that you think then can sort of revolutionize or open financed, by making disintermediated and decentralized, and cheaper and so forth, and faster, you should try it and see what sort of policy objectives in terms of consumer and investor protection and market protection you can achieve as well.

MR. NUARA: Just one more point on that, the question of regulate or not. It's usually with regard to the underlying activity, to say do you regulate Bitcoin is like saying do we regulate the internet. It's what you do on the internet, or how you use that for some process and procedures, some money transfer, some buying of an asset, some e-commerce or otherwise. They don't just regulate the Internet, no one does, and the Internet is a protocol. Most people probably don't know it, but it's TCP/IP, it's the transport control protocol or Internet protocol.

It's a protocol. Nobody in the room really cares about analyzing what the protocol is or who wrote it or otherwise, but it's long existed from -- original developed with government research money, and it's used reliably for a very long time. Well, Bitcoin is another protocol, and so what do you regulate? Well, you might regulate an activity utilizing the protocol called Bitcoin. And then if it's for money transfer, well then, Finsense gets involved, it's for something else.

If it's for swaps, it's regulation that CFTC has of a swap that utilizes it as an index that has a Bitcoin asset beneath it. So you can't say regulate Bitcoin so much as you say regulate activity that touches utilize, or otherwise is involved in the use of that protocol.

COMMISSIONER WETJEN: Commissioner Giancarlo?

COMMISSIONER GIANCARLO: So from the perspective of this regulator, to what extent would markets and swaps for bitcoin be susceptible to manipulation?

MR. NUARA: So with regard to what we've at least established in the filing that we presented to the CFTC, we built a swap, that swap relies on an index of a series of underlying markets. Those underlying markets could potentially be susceptible to manipulation, what we had to establish with the staff and ultimately in our self- certification, was that the numbers that we are pulling from these various exchanges will ultimately be curated, filtered. Take out anonymous behavior to prevent somebody from, essentially attempting to manipulate; either attempting and essentially meeting the requirement that it's not susceptible to manipulation.

At two levels. First, is our market susceptible to manipulation? Every participant in our market governed by CFTC Rules, and Tera Exchange Rules, and we have our own surveillance, and we also have the surveillance of the NFA, to back us up with regard to market participants. We also survey the underlying markets that feed the prices into the index, and as I mentioned before, we have information sharing agreements with each of those markets.

Those locations that we pull data from provide us access to individual traders if necessary, in positions that those traders may hold to determine whether there is going to be manipulation taking place. As a matter of fact, the exchanges that we connect to are proud of the fact that they are following AML and KYC, and want robust marketplaces to address the very question, the question that you are asking which is, is there manipulation happening?

They want a sounder marketplace. They are actually achieving it in their marketplaces, and then we can take that data and build the swaps off of that.

COMMISSIONER WETJEN: So you have these information sharing agreements between the SEF, TeraExchange and the cash markets, that are feeding the prices?

MR. NUARA: Correct.

COMMISSIONER WETJEN: But what other surveillance- type functions do you, the SEF, actually perform? So you are getting reported information, you are getting a right of access of some sort, but how, otherwise, are you surveilling these individual cash markets around the globe?

MR. NUARA: We surveille those feeds and then watch the prices on the feeds, we use technology to watch the price action, and when we find anonymous behavior it's filtered out in the index automatically, but it also prompts the phone call for us to make inquiries. During the analysis period between March and when we ultimately filed, there was activity on one of the exchanges, for example, that essentially looked like someone could be doing something. It triggered flares -- you know, flags on our system, to advise us, hey, lookout, go look at this behavior, which we did. We made the phone calls, spoke to the technology personnel and also spoke to the underlying controllers of the accounts.

They said, no, this is -- you know, we know these players, there's nobody moving the market in a particular way, there's no wash trades, no this, no that, so we have that information at our disposal so that we can constantly monitor.

COMMISSIONER WETJEN: Commissioner

Giancarlo, anything else? I think that's going to bring the meeting to a close. We've gone over time. Thank you, again, very, very much. Just one last point I'd like to make on Bitcoin. Obviously there's relevancy here in taking up this topic today, in light of TeraExchange's filing as you mentioned before, we expect that we are going to receive other filings from other platforms as well, in the very, very near future.

I was interested to hear in some of the -- interested to hear some of the remarks by the Professor about these applications, that could be made of this technology, in a way that's actually useful to our space, the derivatives space. And it just seems like based on what I've learned some of those applications could be so compelling that, you know, it would be a real mistake for us as a Commission to not make sure we are staying on top of these developments.

Not because we want to do other things -- anything than understand the developments, because it seems like this protocol, the Bitcoin protocol or something like it, is very, very likely here to stay. So, the more information and education we can do on this now, in trying to stay somewhere, an appropriate spot on the curve, the learning curve, it seems to be -- seems to be a very sensible thing to do.

So I thank all the Panelists for being here today; very, very helpful, very useful. Tom, thank you for representing the CFTC Staff; and I'll turn it back over to Ted.

CHARIMAN SERAFINI: No. I think we are good. I want to thank everybody for coming. I want to give a special thanks to our staff, Margie Yates and her team, for doing all this work that goes on behind the scenes. It's a big lift for us, but I appreciate everyone coming today, and as the DFO and Temporary Chair, I now adjourn the meeting.

(Whereupon, at 5:05 p.m., the
PROCEEDINGS were adjourned.)

CERTIFICATE OF NOTARY PUBLIC

DISTRICT OF COLUMBIA

I, Stephen K. Garland, notary public in and for the District of Columbia, do hereby certify that the forgoing PROCEEDING was duly recorded and thereafter reduced to print under my direction; that the witnesses were sworn to tell the truth under penalty of perjury; that said transcript is a true record of the testimony given by witnesses; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this proceeding was called; and, furthermore, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

(Signature and Seal on File)

Notary Public, in and for the District of Columbia

My Commission Expires: May 31, 2018