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SENATE

ECONOMICS REFERENCES COMMITTEE

Digital currency

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SENATE

ECONOMICS REFERENCES COMMITTEE

Wednesday, 26 November 2014

Members in attendance: Senators Canavan, Dastyari, Edwards, Heffernan, Ketter, Whish-Wilson.

Terms of Reference for the Inquiry:

To inquire into and report on:

Digital currency, with particular reference to:

(a) how to develop an effective regulatory system for digital currency that:

(i) ascertains the most appropriate definition of digital currencies under Australian tax law,

(ii) promotes competition and growth of the digital currency industry,

(iii) ensures ongoing stability in the financial services industry,

(iv) secures protection of consumers and businesses against illegal activity,

(v) incorporates digital currencies into Australia's national security framework, and

(vi) ensures the financial stability of the industry;

(b) the potential impact of digital currency technology on the Australian economy, including the:

(i) payments sector,

(ii) retail sector, and

(iii) banking sector;

(c) how Australia can take advantage of digital currency technology to establish itself as a market leader in this field; and

(d) any other related matters.

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PESCE, Mr Mark, Private capacity**Committee met at 08:35.**

CHAIR (Senator Dastyari): I declare open the first hearing of the inquiry of the Senate Economics References Committee into digital currency. The Senate referred this inquiry to the committee on 2 October 2014 for report by 2 March 2015. The committee has received six submissions, which are available on the committee's website. The closing date for submissions is this Friday. I am aware of a few others that are coming. I would like to take this opportunity to thank those who made submissions to the inquiry and witnesses who have taken the time to appear before the committee today.

These are public proceedings, although the committee may determine, or agree to a request, to have the evidence heard in camera. I remind all witnesses that in giving evidence to the committee they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence to the committee. If a witness objects to answering a question, the witness should state the grounds upon which the objection is taken and the committee will determine whether it will insist on an answer, having regard to the grounds claimed. If the committee determines to insist on an answer, a witness may request that the answer be given in camera. Such a request may of course also be made at any other time.

I welcome Mr Mark Pesce. Thank you for appearing before the committee. I invite you to make a brief opening statement.

Mr Pesce: In 2008, a computer science researcher published a paper that announced a fundamental breakthrough in computer science. It combined three pre-existing technologies and it demonstrated the technical feasibility of creating a strong, secure and transparent digital currency—which he called 'bitcoin'. The idea of digital currency has been with us for a generation, but bitcoin offered a solution to two of the central problems that had vexed other digital currencies.

First, bitcoin relies on a distributed, decentralised network of peers to check the authenticity of the transactions that are being made in the digital currency. Other digital currencies have required a central authority, a central authority that could be attacked and subverted. Second, transactions in bitcoin are anonymous. Just as you do not need to reveal your identity when you are exchanging physical cash for goods and services, Bitcoin allows users to exchange bitcoins without revealing anything about their own identity. Other systems have tied the exchange of digital currency to a validated identity. The foundation for both of those new capacities lies in something that is called 'the block chain'. The block chain is a transparent and fully inspectable transaction record. It is, in essence, an open ledger book. It allows every user of bitcoins to review every bitcoin transaction that has ever occurred.

The block chain can only be modified through consensus and it is that feature that makes bitcoin both secure and trustworthy. If the network of peers does not agree on the validity of a transaction, it is not added to the block chain and the transaction is not verified. When the network achieves consensus on the validity of a transaction, it is added to the block chain of all bitcoins. When you add a transaction to the block chain, essentially writing it to the record, it effectively authorises the transaction.

Bitcoin transactions are not instantaneous. It takes a few minutes for the peer network to arrive at consensus but the consensus when you have got it is authoritative because the entire network is vouching for transactions' authenticity. It is also very secure because it is extremely difficult to attack and subvert the entire network supporting bitcoin. It is a strength in numbers defence.

Those characteristics have made bitcoin the first digital currency to inspire enough trust that people will use it in the place of government formal currencies. If the value of a currency is a reflection of a user's trust in that currency, bitcoin, which currently has an aggregate value of around \$6 billion, has passed the most important test that the market can provide.

Bitcoin's block chain technology has already found broad use in things other than digital currencies. It is a breakthrough in authentication. So the technology has been used to create, for example, a passport that cannot be forged; a secure, distributed database for computers; and even a marriage contract, which has been witnessed by the block chain.

So within a decade, every network device, every smartphone, every computer, everything to the internet, will have some version of the block chain technology inside of it. It is going to be serving as a first line of defence against network attacks. It will be providing badly needed security and authentication capability. Block chain technology will be everywhere. It will be in everything. It will be so pervasive, it is going to be invisible. Digital currencies like bitcoin are the start of a transformation that will leave our world both more open and more secure. Thank you.

CHAIR: There is quite a lot there. Just taking a step back, as senators we like to think we know many things, but certainly this is an area that is very new to many of us. Where to start?

Senator CANAVAN: We have been given some of your writings on this issue. What do you think the future potential of bitcoin is or where it is going to go? You have seemed to indicate that it may not replace currency, so to speak, but supplement and complement it. Could you expand on that?

Mr Pesce: I have 30 years history in technology and the older I grow the more suspicious I become when someone says, 'This is going to completely replace this thing with this other thing.' In general, what happens is that the new thing comes in and puts competitive pressures on the old thing and they find an accommodation. Bitcoin has advantages as a currency, particularly when you are moving in a global arena and you do not have a lot of exchange fees associated with it. It has got less friction associated with it, although clearly the banking infrastructure will need to adapt to that around anti-money laundering and things like that. Some of the advantages that bitcoin offers over other currencies are going to be tempered as bitcoin hits the real world. That is just the way it is with any technology. But it does offer some real advantages over other currencies.

Senator CANAVAN: One of those advantages you mentioned is the transaction cost. I cannot get a good handle on exactly how more efficient it is. I understand banks regularly charge anywhere from one to four per cent to transfer funds. What would be the percentage cost of bitcoin issuance—the full cost not just the many transaction fees that might be charged but the extra coins that are then mined and put into supply?

Mr Pesce: There may be. I do not know what the exact figures are. There are always some fees associated with any transaction in bitcoin, because you are basically paying the network to authorise the transaction. So there is always some level of overhead associated with it. But the overhead is generally very low when compared to other kinds of bank transactions.

Senator CANAVAN: Are there any good estimates on what the velocity of bitcoin currency is at the moment? I use that term in an economic sense. You said there is \$6 billion roughly?

Mr Pesce: Six billion dollars.

Senator CANAVAN: I presume it is US dollars.

Mr Pesce: Actually, I think it is about US\$5.3 billion, or around \$6 billion Australian.

Senator CANAVAN: Five to six billion dollars in bitcoin is out there. How often is each one of those bitcoins used each year for a transaction, so to speak? Are there any good estimates on that?

Mr Pesce: It is around 50 million.

Senator CANAVAN: So about 10 per cent of the currency is used every day?

Mr Pesce: Yes.

Senator CANAVAN: I have seen in some commentary that bitcoin is used more as a store of value than a medium of exchange at the moment. Is that your opinion, or is that changing?

Mr Pesce: Bitcoin has this sort of two-headed face: is it a commodity or is it a currency? That comes down to the way the ATO has decided to tax it. Taxing it as a commodity rather than using it as a currency, it would be taxing the transactions that were performed with it. I think it does have both of those natures, just in the same way that someone will stuff a mattress with dollars. It has that capacity to be both a store value and a currency, so we are seeing people using it for both. I think while the number of avenues for using it as a currency are relatively limited—in other words the number of places where you can spend it are relatively limited—there is going to be an impetus for using it as a store value rather than as a currency. As the number of places you can use it as a currency grows, then it becomes more useful as a currency.

Senator CANAVAN: I want to come back to the taxation issue. I also noticed in the stuff you have written that something like 60 per cent of transactions in Kenya are by digital currency, or a form of digital currency, at the moment. Can you expand on why that has taken off in Kenya?

Mr Pesce: Kenya is the archetypal example. It is a developing nation that is relatively un-banked. Something like 10 or 15 per cent of Kenyans have bank accounts, yet there is a lot of money going from the cities in Kenya to the villages in Kenya. This is because people go to the cities, earn money and need to send it back to the villages. Before they developed the m-pesa system, which was introduced as something that was done by one of the mobile phone companies—a subsidiary of Vodafone did this about seven years ago—a person would basically spend one day a week on a bus going back to the village, handing someone in their family money and then taking a bus back to the city again. What happened with the m-pesa was that as soon as that came around it became possible to get a text code that you could SMS to a person in the village. You would deposit the money in an m-pesa location, which would be any of the places that you could buy mobile minutes, which are all over the nation.

You would get this code, you would text that code to the person and they would be able to go somewhere in the village and actually get the money.

CHAIR: Mr Pesce, are you saying they were effectively using mobile minutes as a currency?

Mr Pesce: No, the mobile minutes provider can also accept money. Mobile minutes are also used as currency in much of the developing world, but, in this specific case with Kenya, m-pesa is a system that sits on top of the mobile system that allows you to actually transfer money. That became an instant success; it is now estimated that between 50 and 60 per cent of the entire GDP of the Kenyan economy—seven years later—is now moving through m-pesa.

Senator CANAVAN: Earlier this year I saw you had a piece in *The Drum*. You said that in Australia—you were comparing it to Kenya—we have a different system, we have PayPal, we have Swift et cetera. This is quoting you, you said, 'Adding bitcoins to the mix does not provide much additional capacity'. So you believe bitcoin in Australia has a more niche role. Is that the right way to characterise it?

Mr Pesce: It has a lot more competition. We have a lot more payment systems; we have many more evolved payment systems. To that degree, bitcoin may end up being more unique because it does not have to fulfil a fundamental role as a payment system. It will have a big role around remittances; doing international remittances and things like that. We are already seeing that start to develop, but I think that, because we already have a fully developed financial system, the kinds of applications we find for bitcoin will leverage the developed system we have rather than starting from scratch.

Senator CANAVAN: What can you buy with bitcoins now? I tried the other day and I was unsuccessful—I gave up after not much of an effort. How do you get bitcoins and what can you buy right now in Australia?

Mr Pesce: You can buy bitcoins through any number of exchanges. You have to do a cash transfer. I do not think the banks really like you using your credit cards for this. You have to do an electronic funds transfer to an exchange. You get bitcoins in return. What that formally means is that you have a place to store your bitcoins, called a wallet. The wallet is a piece of software; it is not a physical wallet at all. That piece of software has a code associated with it, which is this long indecipherable string of text. If you send that to the authority that you are buying bitcoins from, they will then put those coins into your wallet and that transaction will then go into the block chain.

Senator CANAVAN: If you lose those numbers, it is like a piece of paper—

Mr Pesce: You have lost the bitcoins, just like losing cash money.

Senator CANAVAN: So how do people secure that, given I have had computers crash before—

Mr Pesce: Exactly. This is one of the things that I think people are learning: it is possible to lose bitcoins—unlike, your bank account, for example; you cannot really lose your bank account, because your bank is keeping backups. People are now learning that they need to keep backups, and the more sophisticated wallets will now have some form of storage that would be in the cloud, maybe some form of storage that is offline as well. Every time you do that, you are increasing a security threat to yourself, because someone could come in and take that copy.

Senator CANAVAN: They are using third party wallets effectively or banks?

Mr Pesce: You would be storing it somewhere that is not immediately under your control. So there is still some chance that that information could be copied and used. You can have a password to protect it and all the other things but the more you copy information the more likely it is it could end up somewhere you do not want it to.

CHAIR: It is just one long code?

Mr Pesce: The wallet is a hash, a long string of numbers and letters.

CHAIR: So I could just print that off and put it in my safe?

Mr Pesce: That is the address—

CHAIR: That is the analogue way.

Mr Pesce: That is the address of your wallet but the data in the wallet—I do not know if anyone has actually printed the contents of a wallet.

Senator CANAVAN: We might follow that up later.

Mr Pesce: You could certainly take the contents of your wallet, print it and put it somewhere safe—it is just data.

CHAIR: Let's take a few steps back. It all comes down to the fact that bitcoin is a currency; it is just a digital currency. It does not exist in a physical sense. But is it fair to say that it all comes down to trust, as you said at the start? Currencies work when people have trust in currencies. If people do not have trust in the currency, the currency falls over. Senator Canavan did a thesis on this. It all comes down to whether or not people do or do not have trust in a currency. Is that fair?

Mr Pesce: That is absolutely correct.

CHAIR: And your point is that, after having past the \$6 billion mark, bitcoin is getting to the point—if not already at the point—where it has demonstrated to a section of the market that they can have trust in it?

Mr Pesce: Correct.

CHAIR: Walk me through this. There seems to be a disconnect, rightly or wrongly, between sections of the community. There are people who have faith in this currency—enough to invest \$6 billion into it. And then there are people like us, people from a fairly conservative government perspective—and I do not mean 'conservative' in the political sense; I mean that governments, major banks and reserve banks across the world are naturally very conservative and sceptical. So there is obviously a disconnect between how these things are viewed and treated by sections of the regulatory community and by sections of the market who treat them very differently. The question we are trying to explore through this process is: where is this disconnect? Is it right? Is it wrong? Has the government got it wrong, or are people putting their faith in something that understandably the regulators have huge concerns about? That is the process we are kind of going through.

Mr Pesce: I think that you can be generous with yourself because this is very new. We are talking about something that popped up as an idea only six years ago, and it really took quite a bit of time for people even to understand it and then to actually work with it.

Senator CANAVAN: Some are still taking their time.

Mr Pesce: These are the first hearings that the Australian Senate is having on this. It is a very new thing. It is probably wise to have a degree of institutional scepticism around something that is brand new like this, because if it is going to be a new currency it needs to be inspected from all sides and it needs to be subjected to rigorous tests. My sense is, talking to bankers, that they all expect that there will be a digital currency. A couple of years ago they were not sure which digital currency it was going to be. People are starting to think maybe it is Bitcoin, but they are reluctant to work in it because there is not a lot of guidance for them around the right way to do things so that they do not break the law inadvertently or make more problems for themselves. I think that a part of what all of the institutional processes are engaged in is learning about this and learning how to work with it. You have a few pioneers out there who are doing interesting things. Pioneers are the ones with the arrows in their backs; that is how they are identified.

Senator EDWARDS: A lot of pioneers died in the desert—

Mr Pesce: Exactly. We are in this period, now: the transition between the pioneers and, probably, the settler phase. The settlers need things to be more regular. They need things to be a little bit more clear. The disconnect is not a bad thing; I think the disconnect is just the nature of this process.

Senator KETTER: Could I just ask about the digital wallet, going back to the trust issue. You have mentioned that the wallet is stored, probably in a cloud or—

Mr Pesce: There are different ones. I have a wallet that is actually stored entirely on my smartphone. I wanted that because I back up my smartphone—there is a copy of it—but then there is no copy in the cloud to get lost or stolen. So there are different approaches.

Senator KETTER: Can your wallet be stored in more than one place at one time?

Mr Pesce: It can be copied, so you can have copies of that wallet. But, again, a copy of the wallet is the wallet. A copy of the wallet means that, presumably, if you had a password on the wallet that was preventing other people from using it and someone knew the password, they could just spend your money.

Senator CANAVAN: Can you just explain—correct me if I am wrong—that, even though you can copy it, you can only spend it once. Whether that is through the—

Mr Pesce: You can only spend it once, because once those transactions that spend those bitcoins end up on this global, inspectable transaction record, if I then go and try to spend those again, that is going to get knocked back because the network will say, 'I'm sorry, you have already spent those coins.'

Senator CANAVAN: You do not own that code anymore.

Senator KETTER: So, if you store it in the cloud, is it susceptible to somebody hacking into that file—

Mr Pesce: Potentially.

Senator KETTER: —and destroying the value of that?

CHAIR: Or stealing the value?

Mr Pesce: Stealing the value. They could destroy the value if that was the only copy and they erased it. Then you would have lost those bitcoins. It is the same as burning a pile of money.

Senator KETTER: Is there an industry out there, as yet, looking at that potential?

Mr Pesce: Because there have been people who have lost bitcoins—lost them—there is now a cottage industry of developers who are working to develop more secure solutions. You are going to see the wallet as a technology evolve along with the idea of the digital currency because, again, people just started playing with these things. I do not think there was a clear sense in the beginning that you could lose these things—and, yes, you could—or that they could be stolen or copied like that. As we get further into this we are learning more about how to keep them safe.

Senator KETTER: But there would be a cottage industry looking at working out how to tap into that wallet?

Mr Pesce: Do you mean to steal?

Senator KETTER: Yes.

Mr Pesce: Yes. Whenever there is money, there is always going to be someone looking to get their hands on it.

CHAIR: You could argue, though, that that is a demonstration that the market has faith in its value.

Mr Pesce: It is worth stealing, absolutely.

Senator CANAVAN: With these wallets that are now emerging, effectively they are banks—'wallet' is a different word for 'bank', in my view. They are storing your money for you and you can get it back at some time. Are there actual banks emerging with Bitcoin? If I am storing your bitcoins for you, in your wallet, presumably I have an incentive just like a bank does to lend those bitcoins—not to transfer the physical money, so to speak, but to create more money backed by the fact that you have deposited those bitcoins in my bank. **Do you know what I mean?**

Mr Pesce: Yes.

Senator CANAVAN: Is that happening at all or is it just 100 per cent fractionally reserved at the moment?

Mr Pesce: At this point, there is one bank in the world that is prepared to accept bitcoins, but I do not think it is doing anything that would be fractional reserve lending around bitcoin yet. Again, I think that, in the absence of some regulatory sense around how that will work, no-one is going to do that. But they will happily store your bitcoin and, frankly, if you have a lot of bitcoins, storing them in a bank is probably a lovely idea.

Senator CANAVAN: So there are no real implications for prudential regulation at the moment, in your view, because this is not happening?

Mr Pesce: Except that it will not happen unless we have some sense around the right way to be able to do it. I think there is going to be a bit of a chicken and egg around that. A bitcoin bank would in fact be interested in doing interesting things around investment with bitcoin if they were being used in a savings capacity, but they would need some guidance on the right way to do that.

Senator CANAVAN: Perhaps we can go to those issues but maybe take a step back. From what I have read, the more direct issues at the moment seem to be around taxation and the definition of bitcoins. Have you looked at the recent ATO rulings?

Mr Pesce: Not in detail, but I am certainly familiar with them.

Senator CANAVAN: Do you have a particular view on their conclusions either from a legal perspective or from the perspective of the economic impact and implications for the industry in Australia?

Mr Pesce: My impression is that the ATO wants to frame bitcoin as if it were something close to gold bullion. The thing about gold bullion is that you cannot take a gold bar, peel off one millionth of it and then try to use that as currency, whereas you can do that with bitcoin. It has this capacity to be essentially almost infinitely divisible into very small parts. That is an inherent quality of it. So it really has more qualities that make it look a lot more like a currency than qualities that make it look a lot more like a commodity.

That decision will then play into how Australians will be able to work with it. I do not think the preponderance of international decisions around this will treat bitcoin as a commodity; I think they will probably end up treating it more as a currency, and I suspect that that will force Australians to do things with bitcoin overseas if they want

to be using it in a currency perspective. So the decision the ATO makes will have a profound impact on how Australian businesses, Australian banks and Australian individuals will be able to work with bitcoins going forward.

Senator CANAVAN: Do you have enough day-to-day experience with the industry to explain to us exactly what the practical implications are of defining it as gold bullion, so to speak, or a commodity and not a currency? How does it affect people running a bitcoin business?

Mr Pesce: If you are trying to do transactions that are crossing currencies, it becomes a lot more difficult if you are dealing with a currency that is not being treated as a currency versus a currency that is being treated as a currency. I do not know if you can quite call it double taxation, but there is an impact there because every time you move out of the currency you are getting a GST attached to it which is beyond just the transaction. That effectively puts some friction on—

Senator CANAVAN: Would you repeat that? If I were to exchange bitcoins for Australian dollars, potentially I would have a GST liability, provided the businesses involved are over the thresholds for GST. Every time I convert—putting aside the gold issue, which is seen as a currency a bit more—it is just like buying a tonne of coal or something like that. I have to pay GST on that; it is a transaction.

Mr Pesce: Yes. That would then end up slowing the flow of transactions because you get this extra friction on all of the transactions.

Senator CANAVAN: But the GST is a value-added tax, so does how the ATO determine the value added there? You are right: it should not have a tax on transactions; it should be a tax on the value added.

Mr Pesce: That is the aggregate difference in the—I am just trying to—

Senator CANAVAN: That is okay. We probably need to speak to the ATO at some point in this inquiry, so we can explore those issues more then. What about the capital gains tax issues? Are they ones you are concerned about?

Mr Pesce: There is a capital gains issue insofar as the price of bitcoins is highly variable. You will have Kevin Zhou on the panel later on today, but, when I was talking to him at the global currency summit that we had in Brisbane during the G20, he pointed out that there is an actual correlation between the price of a bitcoin and the amount of electricity that it takes to mine a bitcoin. Just a step back here: bitcoins are mined, as I put that, by solving a very complex problem with a computer—so complex that it actually costs almost \$300 in electricity costs to mine a single bitcoin. So it is very much like your goldminer. You have to make sure that the cost of mining the gold is a little bit less than the cost that the gold is on the market. Now, because of the way mining works and because mining is increasingly becoming more difficult—that is another one of the mathematical qualities of Bitcoin—the cost of a bitcoin, to create a bitcoin, is now becoming more stable. So the price of a bitcoin, theoretically, will stabilise somewhere around its cost to mine—and also then related to its supply and demand. So the volatility around that, which would affect capital gains, should be decreasing over time. That is a supposition based on available evidence.

Senator CANAVAN: Just on that, I am interested in that \$300 per bitcoin. That is pretty close to what bitcoins are trading at—

Mr Pesce: That is what I am saying, exactly.

Senator CANAVAN: Is that basically a fall in the price? If it goes below—sorry, a ceiling, if you like.

Mr Pesce: No, it is a floor, because if it goes below that it is no longer economic to mine bitcoins and then the miners—

Senator CANAVAN: So it constrains the supply and increases the price.

Mr Pesce: Exactly.

Senator CANAVAN: If it goes over that much too much, is there an incentive to mine and increase the supply?

Mr Pesce: Then you get more and more people mining because it becomes more economic to do so.

Senator CANAVAN: So what is going to happen when mining finishes?

Mr Pesce: That is in the year 2140, or something like that.

Senator CANAVAN: I thought I read 2040. So it is too far away to worry about.

Mr Pesce: At this point. We may be having these hearings in another hundred years asking that question.

Senator CANAVAN: Okay. You have described lots of different areas of the industry: banks or potential for banks, wallets, mines, exchanges. What elements of that industry could potentially thrive here in Australia? Do you have a view on that? What elements of the bitcoin industry could thrive in Australia?

Mr Pesce: We have an extremely sophisticated financial services sector. So there are a lot of financial services that can be built not just with Bitcoin but using the block chain. I think we are going to see new forms of mutualised insurance and new forms of savings banks—entirely very different and more distributed forms with less centralised but more distributed forms of all of these things that are going to start to arise out of the basic technology that underlies Bitcoin. I also think that we are going to have a very strong role in remittances into the Pacific—which we already do, but I think that more of that is going to move into currencies that will have a lower cost associated with them for people using them. I think there are a couple of different areas that are, right off the bat, going to be quite interesting and quite successful. But I think in the longer term we have a real capacity to reshape the way financial services will work. I think that over the next generation that is what we will start to see.

Senator CANAVAN: We have spoken about the tax issues. Are there any other regulatory or legal issues and barriers that you see to such an industry emerging in Australia?

Mr Pesce: One of the most interesting conversations that I had at the global dialogue was with Jerry Brito, who works with regulators in the United States. He essentially said that most of the regulators in the United States are waiting for something they called the BitLicense, which are going to be promulgated by the New York state banking regulator sometime in the near future—sometime in the next six months. Now, if they do it well it will become a prototype for other regulatory domains. If they do it poorly, it will become a prototype of what not to do in other regulatory domains. I think what that starts to become is a conversation that is an international conversation between regulators in financial institutions around the right way to be able to incorporate digital currencies into an economy. I think that that is probably the most important thing. We need to stay involved in that conversation and, where we can, we need to be leading that conversation. I think the most important thing is to stay involved in that conversation because the conversation is going to have impacts throughout the rest of this century.

Senator EDWARDS: Who makes money out of bitcoin?

Mr Pesce: The exchanges make money out of bitcoin, the miners make money out of bitcoin. All of that is the case. If you are an exchange you are taking a transaction fee when you are moving money in and out of bitcoin to another currency. If you are a miner you are actually creating new bitcoins which everyone wants and you are making money off of that.

Senator EDWARDS: Can I be a miner?

Mr Pesce: Yes, you can.

Senator EDWARDS: Okay, tell me how I become a miner.

Mr Pesce: A bitcoin mine is a piece of software, and you would run it on your computer, and your computer would get very hot, and you would get all of these big electric bills, and you would go, 'Why are my electric bills so high?' It is because—

Senator EDWARDS: Are you being serious?

Mr Pesce: Absolutely serious.

Senator EDWARDS: Really?

Mr Pesce: I am absolutely serious. In the early days there were a lot of folks who were running them at home making bitcoins. These days it is in fact generally large banks of computers, which are squirrelled away under a lot of air conditioning, using the latest generation chips, still using a lot of power to solve these mathematical functions. Part of the mathematical function that is being solved by these miners is checking the ledger. Part of what they are doing to earn these bitcoins is to make sure that all of these transactions, which are publicly stored, are all adding up and are all in agreement.

CHAIR: I think we are dealing with people who understand regulation, understand government and understand things like the ATO and processes, and there is the other world, which is the digital world, in which, I think it is fair to say, our understanding is more limited. So take a step back. Tell me if this is right, because I want to get my understanding of this right. I am trying to make this as simple as possible for myself. Bitcoin gets around the need for third party intermediaries by distributing a ledger of transactions among everyone within the system. Effectively, when we talk about the block chain in language that we understand, it is simply just a distributed ledger.

Mr Pesce: It is a publicly inspectable distributed ledger.

CHAIR: And that is the block chain.

Mr Pesce: That is the block chain.

CHAIR: Every new transaction is checked against the block chain to verify that bitcoins have not already been spent, so you cannot have double spending.

Mr Pesce: Correct.

CHAIR: So, bitcoin relies on users providing the computer processing power needed to maintain the block chain. Maintaining the block chain is, effectively, part of what you are doing when you are mining a bitcoin.

Mr Pesce: Correct.

CHAIR: That is how it is, kind of, a self-sustaining standing system.

Mr Pesce: Correct, you got it.

CHAIR: I think I got it. My incentive to participate in the process and to maintain this entire system is, 'This is how I create bitcoins for myself.'

Mr Pesce: Correct.

CHAIR: I think I broadly get that. This is not the area we are focused on, which is the digital side, but to get an understanding of the other side. What is a bitcoin worth right now?

Mr Pesce: About A\$440.

CHAIR: About A\$440. How volatile has that been?

Mr Pesce: Over what period of time?

CHAIR: Fair enough. Eight or 10 years ago it was worth nothing.

Mr Pesce: To give you an example, there was a spike in bitcoin prices to \$1,600 about 18 months ago, which correlated precisely with when the banks in Cyprus decided they were going to take a cut out of everyone's banking accounts. So, a lot of the dollars in Cyprus, a lot of the money stored in Cyprus, went into bitcoin until it could find its way into other currencies. There have been spikes and troughs. That was probably the first time that bitcoin had been seen by people who were in a hurry and thought, 'Wait, I need that as a store value,' and money flowed into it and money flow back out again.

CHAIR: That is traditionally what the US dollar has done in those kinds of circumstances. That is traditionally the stable place.

[inaudible]

Senator EDWARDS: It is only US\$45.2 billion, so, if there is a rush on it, where do more bitcoins come from?

Mr Pesce: Bitcoins are being generated at a range of relatively stable rate of around 25 every 10 minutes, so it is not as though you cannot grow the money supply arbitrarily to meet demand. What would happen is the price would go up, which is precisely what happened.

Senator EDWARDS: What is stopping it from going to 1,000 every 10 minutes?

Mr Pesce: Right now, probably the supply and demand sides are relatively stably managed.

Senator EDWARDS: What if I have a big computer and a big power cord at my place and I keep doubling up and keep going mining?

Mr Pesce: One of the qualities of mining is that it becomes progressively more difficult through time. Every bitcoin is harder. It is like a mine where you are running out of the vein, and the vein is getting narrower as you go further and further into the mine.

Senator EDWARDS: What if I turn around and go to the other side of the mine?

Mr Pesce: There is not a vein on the other side of the mine. There is only this vein, and you are mining it out with that vein is, over time going to run out.

Senator EDWARDS: A lot of my teachers suspected I was dyslexic. So, I cannot continually mine the bitcoin?

Mr Pesce: You can continually mine for bitcoin, but you have to continually throw more power at the problem to get the same amount of bitcoins out.

Senator EDWARDS: I could be somebody new. I could be Senator Canavan, and start up and find a new vein, and it gets progressively harder for him.

Mr Pesce: When he starts mining he is starting out mining at exactly the same coalface you are mining, so he is mining the same vein. He does not have a different vein. You are all mining the same vein. As that vein gets narrower it is getting harder for all of you. It is much, much harder to mine for bitcoins today than it was in 2008.

CHAIR: That is the same as saying that I can go home today and start mining minerals, putting aside the New South Wales planning laws. There is so much to talk about, Mr Pesce, and we have a roundtable discussion a bit later today. I am very conscious of time and how many people we want to get through.

Senator CANAVAN: I just want to follow up on the mining issue. As a result of a transaction occurring the mining opportunity occurs because of the transaction occurring. Is that right? Someone wants to transfer bitcoins from one person to another and therefore the mining activity needs to occur to verify that transaction, is that correct?

Mr Pesce: Absolutely. Mining also produces new bitcoins, so it is doing two things at once. It is checking the transaction and create bitcoins.

Senator CANAVAN: Can people opportunistically do those transactions just to mine the bitcoins? If Sean and I were in a mining operation, could I transfer bitcoins from me to Sean just for the sake of it, as we are both in partnership, just to be able to mine and create new bitcoins? Can people do that or are they waiting for someone to actually buy goods or service before they actually mine?

Mr Pesce: Probably both. You can just transfer bitcoins, and, yes, there is a transaction cost associated with it.

Senator CANAVAN: That is where you get instability around the price because if the prize goes too high that sort of activity suddenly becomes profitable.

Mr Pesce: Yes.

Senator CANAVAN: Okay.

CHAIR: Thank you, Mr Pesce, for your time.

Senator EDWARDS: I have not finished yet, so I will see you on the panel discussion. I am still not sure who makes all the money.

SOMMER, Mr Andrew, Partner, Clayton Utz

[09:18]

CHAIR: I now welcome Mr Andrew Sommer from Clayton Utz. Before we go to questions, do you want to make an opening statement? There will be a panel discussion later that will cover a lot of things, so if you want to also outline in your opening statement the areas in which you feel you are best qualified to answer questions in. We are dealing with regulation, law, taxation and the digital space, and we do not want to be directing the wrong set of questions to you.

Mr Sommer: My area is taxation particularly the indirect taxation consequences of these transactions, so I am happy to pick up on some of Senator Canavan's points a bit later. The interaction between bitcoin and the domestic tax system has been one of the issues that has been fraught in pretty much every jurisdiction that has tried to adopt bitcoin. I speak primarily about bitcoin, and I know that the scope of the inquiry is digital currency. For reasons that Mark was saying earlier, the dominance of bitcoin is such that the focus is on that, but the comments can equally be extended to other forms of digital currency.

One of the reasons why this has been so critical is that the adoption rate of bitcoin can be slowed by the domestic tax treatment, particularly in the GST/VAT space. Where GST or VAT is imposed on the acquisition of bitcoins as part of a trading transaction, it makes it much more difficult and much less economically viable for me to take my Australian dollars and convert them into bitcoin if one-eleventh of that transaction is going to be lost in GST at the point that I do that. For everyday consumers, that one-eleventh cost is a real cost. That is a consequence of treating bitcoin like a commodity rather than a currency.

We have special rules in the GST framework to deal with gold bars and investment-grade precious metals. They are treated as input tax supplies under our GST system. They are treated as GST-free in their first iteration and then on subsequent supplies, they are treated as input tax, so they do not form part of the tax base. That is because, from a GST/VAT design perspective, all over the world money is excluded from the tax base for some of the reasons stated earlier. It is a consumption tax at its heart. It is designed to tax private consumption expenditure. When you are converting your Australian dollars into a means of exchange or a store of value, that does not form part of the consumption base. Therefore, from a design perspective, if you were going to design a GST today, you would design it to exclude digital currencies. There is no good tax design reason why you would design it to include digital currencies within the tax base. Bitcoin is functionally money and, for that reason, you would design the system to operate in that.

Part of the concern that I have is that the current proposed treatment by the tax office in the draft rulings, particularly in relation to GST and FBT, provides the most problematic outcome from a GST perspective. It would be preferable for bitcoin to be treated like a foreign currency, so that when I take my AUD and convert it to USD, I pay a fee for that transaction and that fee is for a service and I have consumed that service. That is properly part of the tax base, but merely shifting the value from AUD to USD does not consume anything and consequently, from an ideal perspective, you would want that taken out.

My other concern is one of the consequences of the tax office's current proposed treatment. They are constrained by the law and one of the advantages of ventilating this in this forum is we can talk about the legislative reform that is necessary. But the difficulty within taxation of these transactions is it does give rise to the potential for trader fraud. In Europe one of the great difficulties is missing trader fraud. So somebody makes a taxable supply, in our vernacular, and disappears from the supply chain, the commissioner has to pay out the input tax credit and has difficulty recovering the tax from the entity making the taxable supply. By imposing GST on all of these transactions of converting dollars to bitcoin and bitcoin to dollars and so on, we increase the opportunities for that sort of activity to occur, whereas by excluding it from the tax base, it is a whole layer of taxable and creditable transactions that we take out, and we avoid that difficulty.

From a treatment perspective, bitcoin does not need a whole raft of special rules; it just needs to be brought within the right mechanics under the income tax law, the FBT law and the GST law that would enable it to be treated really for what it is—a means of exchange and a store of value. Let's tax it like that. If we cannot get there under the terms of the current law, we need to look at changes to those laws to achieve that end.

CHAIR: At the moment, in a practical sense, there is a coffee vendor down the road in Canberra, a little cafe, which will accept bitcoin. Right now, if I want to buy my breakfast using bitcoin, I would have to get my Australian dollars and convert them to bitcoin. In doing so, I would be paying somebody a transaction fee of a few cents, the same as if I was changing it to US dollars to buy something at an airport—

Senator EDWARDS: Is it a few cents?

CHAIR: I think it depends on the size of how many dollars you are changing. Are the rates that you would be charged for changing Australian dollars to bitcoin comparable to changing Australian dollars to US dollars?

Mr Sommer: Depending on where you are doing it, it is a matter of two or three per cent.

CHAIR: I imagine if it is much larger, it becomes less and you would negotiate these things like you do for any kind of foreign exchange or any kind of transaction.

Mr Sommer: Sure.

Senator EDWARDS: Is that right? The more you exchange, the less it is?

Mr Sommer: I do not have the rates in front of me. My experience is buying a bitcoin for the purposes of my own interest. You pay a fee of roughly 2½ per cent as a consumer; the rates beyond that I think are simply a matter of negotiation.

CHAIR: I think we have some people later on who are in a better place to answer that. This is where it gets a bit odd—I am being charged the GST on that transaction and I am being charged the GST on the breakfast that I am buying.

Mr Sommer: Correct.

CHAIR: And that is the disparity.

Mr Sommer: Correct.

CHAIR: Obviously, I spoke to the ATO about this at the start of this process—I want to get this on the record, it is more of a statement than a question, but I think it is fair to put their defence on the record—and their argument is the Australian tax framework was created 20 to 25 years ago and then there was an update period with the GST, which is over a decade ago. The argument goes that, when the tax system was being created, none of this was envisaged because it did not exist. The comparison the ATO gave me was that they treat bitcoin the same way they treat basketball cards or posters—a commodity that is tradeable as opposed to a currency. The defence from the ATO was that people are making the point that this is an issue of regulation—it is not an issue of regulation; it is an issue of policy—and that we, as the regulator in terms of the tax system, will follow the law as the law currently exists. I want to get your opinion on this as you are a legal expert: whether we want to treat it differently or not is not the question; we are incapable of doing so because the framework does not allow us to treat it differently—that is the ATO's position. You are the lawyer, you tell me is that a—

Mr Sommer: One of the great things about tax law is that you can always argue both sides. In relation to this particular issue, there are two or three key definitions: there is money, currency and foreign currency. In relation to the GST law, the key definition for most of this will be the definition of money. That definition is an 'includes' definition. There is an argument to be made that the definition of money as it sits in section 1951 of the GST Act is capable, on its current terms, of extending to bitcoin. I have made that argument and others have made that argument in submission to the commissioner. The commissioner has formed the view that that is not the scope of the current definition.

Other definitions or phrases used in the GST regulations for currency of another country become even more problematic. Can you actually say that as of today's date bitcoin is the currency of another country—you would have to say that that is a difficult definition to make out. There is a raft of issues that needs to be addressed in there.

CHAIR: Take a step back then. You are making the point that you have a different legal interpretation than the ATO has, and you have made that case. I think the point that they are trying to make—and I would like to get this on the record, and we will give them an opportunity to come and respond, but they have been very clear to me—is that they are not passing judgement on how it should or should not be treated by taxation; they are passing judgement on how they feel the restrictions within the act mean they are forced to interpret something.

Mr Sommer: Yes. That is my understanding. The tax office are constrained by the law as it is written. They are mere administrators of the law; they are not an instrument of policy. And so they say: 'We've looked at this definition of money. To us, bitcoin is outside the definition of money.' It is not unusual, as you would know, for different people to form a different view in relation to a matter of interpretation of an existing definition.

CHAIR: How does our taxation treatment of bitcoin compare to that of other like-minded Western OECD nations?

Mr Sommer: Initially Her Majesty's Customs and Excise in the UK tried to treat it as a commodity, which is the current proposed treatment by our revenue authorities. They walked away from that in March this year, and they formed the view that, under the framework of their law, bitcoin is treated like private money, so it is treated

like money. It is what we would call in our system an input-taxed supply, much like investment gold bars, and not taxed, because under the—

CHAIR: Did they do that through legislation or through regulation?

Mr Sommer: They did that through interpreting their law as it was, based on the—

CHAIR: But there was not a bill—that you are aware of—that got passed through the UK parliament?

Mr Sommer: The revenue authorities changed their view in relation to the taxation—

CHAIR: And did a tax ruling?

Mr Sommer: Yes.

Senator CANAVAN: You touched on this just a bit earlier, but is it your view that, for the specific definition of money that we are talking about here, we need to change the laws of our country, or can we just get a different interpretation from the Commissioner of Taxation to deal with the issues that you have raised?

Mr Sommer: I think the definition of money can be interpreted to include bitcoin. That gets us some way but not the whole way. I think the best solution across the board is to introduce a new concept of 'digital currency' and include that within the concepts of currency. That would then flow through into the definition of money, and you would solve the problem that way. But we could include a new concept of 'digital currency' to that end.

Senator CANAVAN: Can I just go back a bit and make sure about something? The ATO have issued a guidance document for people, off their website, and then there is a broader draft taxation determination that they issued on 20 August.

Mr Sommer: Yes. There are four different draft rulings that the commissioner has issued—one on GST, one on FBT, one on capital gains tax and one on trading stock.

Senator CANAVAN: Right. I have probably only read the one here. This relates to the Income Tax Assessment Act. Would that include GST?

Mr Sommer: No.

Senator CANAVAN: That is under the new tax system, isn't it? I was just a bit surprised reading it. They did quote extensively from case law. To me, the case law seems to indicate—this is from a decision by Justice Emmett:

... a thing can be money and can operate as a generally accepted medium and means of exchange, without being legal tender. I am just not sure why they could not conclude that bitcoin would be money. I suppose I am just confirming your point.

Mr Sommer: That particular decision of Justice Emmett, in the case called *Travellex*, concerned the conversion of AUD into Fijian dollars, and Justice Emmett was called to consider the scope of the definition of money. The case went all the way up to the High Court, and the High Court had no qualms with the interpretation that Justice Emmett adopted at first instance.

Senator CANAVAN: What was the exchange there? I missed that.

Mr Sommer: AUD to Fiji dollars. Justice Emmett laid down, I think, a fairly broad test for money. He makes the point that over time there have been banknotes issued by banks—non-government backed currencies—and they were adopted as currency and treated and taxed as currency. He seems to be adopting a breadth of definition of money that would support the inclusion of bitcoin.

Senator CANAVAN: The Australian Commissioner of Taxation was defending that case—is that right? It was their view at the time that Fijian dollars were not money.

Mr Sommer: The case actually turned on the question of whether or not it was a GST-free supply. It turned on matters not immediately relevant.

Senator CANAVAN: I note that, when the commissioner came to his conclusion, he says that 'the current use and acceptance of Bitcoin in the community is not sufficiently widespread such that' it satisfies a particular test. Do you believe that a currency has to be in widespread use to meet the legal definition of money?

Mr Sommer: Yes, I think there needs to be a breadth of acceptance. It cannot just be a minor thing. It has to have a significant and community acceptance and trust, as Mark was saying earlier. In relation to that, one of the things the commissioner does not do in that draft ruling is to identify the point at which that breadth of acceptance will occur. Assuming we are not there yet, there is the potential for that point to be reached in the future. At that point, we will have this switch from the current proposed treatment—where it is taxed as a commodity—to it being taxed as a currency. That will lead to all sorts of transitional complexities—they will arise at that point

where acceptance reaches critical mass for the purposes of it being accepted by the commissioner as money. The other alternative is that, as soon as a single country, no matter what size, adopts bitcoin as their national currency, it so becomes a foreign currency and therefore becomes a currency and therefore becomes money. We are actually, then, at the mercy of some other jurisdiction deciding that they will adopt bitcoin as their currency. That has a direct and immediate effect throughout our income tax, our goods and services tax and our FBT law.

Senator CANAVAN: I want to come back to you on a couple of things you mentioned there. On that point about foreign currency: you mentioned earlier there is a definition of money, a definition of currency and a definition of foreign currency. The definition of money is the pertinent one for GST?

Mr Sommer: For most of it, yes.

Senator CANAVAN: The other two—are they pertinent for income tax assessment?

Mr Sommer: Yes.

Senator CANAVAN: Presumably the definition of foreign currency is narrower than the definition of money. Is that your interpretation?

Mr Sommer: Yes, the definition of foreign currency is, effectively, the currency of a country other than Australia.

Senator CANAVAN: In that case, in the income tax assessment issue, to expand it to cover digital currencies—we would need a change to the law. It would be too hard to interpret bitcoin—apart from another nation's government actually adopting it—as a foreign currency.

Mr Sommer: Oddly, the use of concepts of money and currency within the income tax law are relatively narrow, so it would have some potential implications for the operation of division 960 and the taxation of financial arrangements provisions. But it should not have a material impact on whether or not mining activity results in assessable income. It does, it should and it will. It is more for its flow-on effect into the GST law and the FBT law.

Senator CANAVAN: Just to repeat that back to you: in your view it is the ruling on GST that has a bigger impact on the Australian bitcoin industry than the ruling on CGT and other aspects of the Income Tax Assessment Act.

Mr Sommer: Exactly.

Senator CANAVAN: What are the capital gains tax implications of the ruling?

Mr Sommer: In the CGT ruling, the commissioner forms the view that bitcoin is property and that bitcoin is capable of being an asset for CGT purposes—that disposal can trigger a capital gain, that it is an A1 event and so on.

Senator CANAVAN: If I buy a coffee, is that a CGT event if bitcoin has gone up while I have been holding it?

Mr Sommer: If you trade your bitcoin for coffee and the value of the coffee exceeds the value of your cost base in the bitcoin, then, yes, you can have a CGT event.

Senator CANAVAN: Is there a threshold for that? Or do I even have to pay CGT for just two bucks?

Mr Sommer: I do not know; I am sorry. My CGT expertise is limited.

CHAIR: Can we get Mr Pesce back to talk about things I understand! On legal challenges, we have kind of discussed the legal tax framework issue. And, again, the ATO will speak for itself, but from what you and the ATO have both said—you on the record, and the ATO will have that opportunity—is that effectively at this point in time the issue has been ventilated and the decision of the ATO, which is quite public, is that they are going to deal with it as a commodity. You are of the view that that is a major impediment to the practical use of bitcoin. And I think others will have the opportunity today to talk about what impact that has on the growth of the industry in Australia. So, park that for a moment. What other legal challenges do you think the committee needs to be looking at as we go ahead with our investigation, our exploration, our committee inquiry? What other legal challenges are being faced aside from simply the taxation law?

Mr Sommer: My expertise is in the taxation aspects of it, but the other legal and regulatory aspects and how it fits into current frameworks under governmental supervision are simplified where we have a conceptual framework for dealing with this thing and we say that it is money-like in its behaviour and let's regulate it as that for tax purposes and for other purposes.

CHAIR: I want to touch on that. Your point is that there is already a framework for how we deal with money.

Mr Sommer: Yes.

CHAIR: Now, the question is: is bitcoin so unique that it cannot fit into the existing framework as money? Or, is it similar enough that if we simply treated it as money, in the same way that we treat some currencies that are smaller and larger, then the framework is already big enough and strong enough and we do not need to do anything unique in that regulatory space except simply treat it as money?

Mr Sommer: My understanding is that that is correct—that the existing regulatory framework is sufficiently strong that, if you bring it within the operation as money, that would produce an outcome that is consistent with where the industry wants to go and the adoption of it and that achieves the government-oversight purposes.

CHAIR: I will ask you to take this on notice; if you want to add more to it I will give you the opportunity to, because we are going through a process. I know there are other complications here, but you are making it pretty simple. You are saying that if we simply say that we have this existing framework, and so much has gone into this framework about how we tread with money and debates and this and that, then, 'Bring this into that space and treat it as money', and everything on the regulatory front will flow.

Mr Sommer: Yes. We do have a highly advanced regulatory framework that it can be incorporated into.

CHAIR: In this digital space and in this kind of area I think it is fair to say that there is a fairly libertarian streak that runs through some of this kind of space on the internet—

Mr Sommer: Yes.

CHAIR: some of it well-intentioned and some of it less well-intentioned. There are those who argue that there should be no role for government, there should be no role for regulation and, frankly, the entire conversation around taxation should be ignored because all this should exist outside the taxation space. There are some of us who think that that is not only stupid but unrealistic—that if you are not involved in shaping regulation then regulation shapes you, that government does not go away simply because you do not want to deal with it. But I would not mind getting your legal view on all that.

Mr Sommer: Again, from my perspective as a taxation lawyer I have clients who transact in bitcoin. We need to deal with the tax office in relation to those transactions. We need to demonstrate the proof elements of the fact that we have incurred the expense, that we have derived the income. All of those things need to operate within the existing framework and the existing rules of evidence and procedures of dealing with the tax office and other regulators. At that point those things are unavoidable. The commissioner has his powers of default assessment. He can investigate it if there is an accretion to wealth that is unexplained—because people have been transacting in bitcoin in a way that they have achieved a degree of anonymity, much like transacting in cash. The commissioner has existing powers to investigate and make his determinations, and the taxpayer has the obligation to demonstrate their side of the story.

CHAIR: To touch on that, regarding the whole other set of issues—which we are going to get some people to speak to as we go along, with AUSTRAC and others—of whether this is being misused or can be misused for nefarious activities: you are saying that you actually address a lot of those problems by placing it within the tax system, because you create a different kind of transparency mechanism. Can you explain that?

Mr Sommer: By bringing it into the regulator transactions by legitimising it and by giving it scope to operate on a day-to-day business basis, there are, under the existing rules, mechanisms for demonstrating how transactions occurred. The block chain provides a slightly different tool for making those demonstrations. There are different ways in which you would do that for bitcoin-related transactions. But the fundamental principles are unchanged.

Senator CANAVAN: Perhaps I could just go back to when you said that there should be a minimum level of acceptance, or that you accept the view of the Commissioner of Taxation that a digital currency should have some element of widespread use before it is adopted as money. I want to tease out the economic or market structure implications of that. We have spoken a lot about bitcoin, but there are alternative digital currencies.

Mr Sommer: Yes.

Senator CANAVAN: I am just wondering: if we adopted a legal or regulatory perspective that you must meet a minimum level of use before you get to be in this club, wouldn't that be a bit of a barrier to market entry and stop competition among alternative currencies?

Mr Sommer: Yes. I think that is exactly right. And one of the policy decisions that needs to be made in relation to bringing digital currencies within the existing currency and money framework is: do we do it for all digital currencies, irrespective of their level of market adoption, or do we include some sort of hurdle that they need to pass in order to get in? That is a policy decision, and I suppose in one sense, from a tax design perspective, it does not matter. If something is a particularly small-niche digital currency, provided that it is what

we call an open system in the sense that it is available to everybody—you do not have to be a member of a club or sign up to particular terms and conditions—then does it really matter that we bring it into the currency framework early from a tax design perspective? My personal view is that I do not think it would make a difference.

Senator CANAVAN: Does that go to something that I think you said earlier—that your first best option would be to insert a digital currency definition in our tax laws?

Mr Sommer: Yes.

Senator CANAVAN: Presumably that definition would require a digital currency to meet certain tests, which may or may not include its use or its market share, so to speak.

Mr Sommer: Yes. You would want to distinguish it from other closed systems, like Bartercard and other systems of exchange.

Senator CANAVAN: World of Warcraft and things like that! I have never played that game, I must say!

Mr Sommer: Virtual virtual currencies is a whole different thing!

Senator CANAVAN: So, it would be more a character test, in a sense—the character of these currencies, not their potential adoption or use.

Mr Sommer: From a design perspective, any time you include that hurdle you have a problem of transition. And that problem of transition of moving from commodity treatment to currency treatment is going to give rise to tax leakage, it is going to give rise to compliance issues, and it is best to avoid it if we can.

Senator CANAVAN: Are there any definitions at the moment floating around, in other jurisdictions? Is there a definition of digital currency in their laws as such?

Mr Sommer: Not that I am aware of, no.

Senator CANAVAN: Finally, you mentioned earlier that you have clients, or bitcoin clients, that use bitcoins. Since August, then, have you noticed any direct impact on their businesses from the taxation ruling? And have people packed up and left or are they thinking about leaving et cetera?

Mr Sommer: The great difficulty for those people who make bitcoin available to consumers is: they are competing with offshore providers who do not have this impost. Even under the design of our GST, if I go on to a US bitcoin trader's website and buy bitcoin from them, even on the ATO's view there is no taxable transaction. Our reverse charge rules do not kick in. There is no tax to be paid. However, if I go on to an Australian trader's website, I will incur a one-eleventh charge for GST. It will be leakage. Why would I go to the Australian website when I can get exactly the same thing straight into my wallet on my phone through the US website versus the Australian website?

Senator CANAVAN: Thank you, Mr Sommer; that is very good. There are lots of questions to take up later.

CHAIR: I am just very conscious of the time, so we might, if it is okay, Senator Canavan, move on.

Senator CANAVAN: Yes.

CHAIR: I will now call our next witness.

CULLEN, Mr Lucas, Chief Executive Officer, Bitcoin Brisbane Pty Ltd

[09:51]

CHAIR: Welcome. Mr Cullen, I am very conscious of the fact that we are actually quite tight for time, so I might ask you if you have a brief opening statement and in your opening statement you can just outline where your area fits so that we make sure we are asking the right questions.

Mr Cullen: Sure. Thank you for inviting me to this committee, Mr Chair. Bitcoin Brisbane is a consultancy firm that develops bitcoin related software and advises industry on the exciting opportunities and potential pitfalls of digital currencies. I am also studying a Bachelor of Mathematics at QUT, and I have previously worked developing software in the banking industry—so I think that should answer where you should target your questions. I was also mining bitcoin in 2011, so I am happy to talk about bitcoin mining and why you should not, and, as they say, it is better to sell the shovels to the miners than to mine itself.

As Mark said, the biggest expense of mining is power. In Australia, we have an abundance of free power in the form of solar, and a decreasing feed-in tariff. A potential industry could emerge by converting the solar power generated during the day into bitcoin when the demand for electricity is low and then using that revenue to buy power back from the grid in the evening, thus forming an economical battery.

While my experience in digital currency is broad, today I would like to confine my opening remarks to the technical characteristics of digital currencies. The blockchain is a technology that underpins bitcoin. Just as TCP/IP is the network protocol that allows services such as email, websites and Skype to run, the blockchain allows peer-to-peer digital currencies to exist. The blockchain is a distributed public ledger that all actors agree to be the truth by a decentralised validation process called 'mining', and actors participating in validating a transaction are known as 'miners'. The ledger may be thought of in traditional accounting terms as double-entry accounting. However, in the bitcoin network, each and every transaction is known by everyone, making fraudulent transactions impossible. Bitcoin transactions are organised and synchronised without central authority into 10-minute chunks called 'blocks'. I will skip this next section because of Mark's comments on it, and I will take questions.

CHAIR: Okay, Mr Cullen; let us just talk about the business opportunities and industry opportunities. So you are saying that in your business you effectively develop product and consultants advise businesses on how to get into this space?

Mr Cullen: That is correct.

CHAIR: Do you want to just outline to us what you see as the growth potential of the business opportunities for Australian businesses, firstly, and then, secondly, could you touch on the impact the taxation issue has had on those opportunities?

Mr Cullen: In regard to business opportunities, what bitcoin and block chain technology allows is this inversion of trust. As we are seeing, a distributed public ledger that can be audited by anyone has massive ramifications. For example, party donations could be audited by the public and could also be audited to see where those funds are allocated throughout the system.

We mentioned earlier a topic called proof of solvency, where we are talking about fractional lending. Because a block chain and every transaction is known, you can actually see mathematically and provably the amount of funds a company has, so you can actually see whether the company has the capacity to pay your invoices. Again, it is a proof of solvency. Those are just a few use cases.

CHAIR: What about the potential for the Australian businesses you are consulting with?

Mr Cullen: I think we have an extremely good talent pool here in Australia from the software developers. We have a good climate—albeit solar power—to actually encourage miners to participate here and to reduce the cost of electricity. We have decent broadband penetration, which will allow these services to exist. We are traditionally English-speaking citizens. Most of the bitcoin code is written in English, so we have a competitive advantage over other markets, such as India, in developing software products in this space.

Senator CANAVAN: Is there any mining happening in Australia any more?

Mr Cullen: Yes, there is an ASX listed company called DigitalBTC, who have a mining operation in WA.

Senator CANAVAN: Where did you do your mining? On your MacBook?

Mr Cullen: We started mining in 2011. A friend of mine has 10 kilowatt solar power, so we are using the advantage of free electricity to earn bitcoin.

CHAIR: Was it profitable?

Mr Cullen: To put it into perspective, I bought about \$3,000 worth of bitcoin mining when bitcoin was \$5. It would have been more profitable just to buy bitcoin and be up \$750,000.

Senator CANAVAN: With the increase in the price?

Mr Cullen: Yes.

Senator CANAVAN: What is Bitcoin Brisbane's business at the moment? What services do you offer people?

Mr Cullen: It is primarily developing software for bitcoin. Either accepting payments, as a traditional e-commerce marketplace, or building software for up-and-coming industries like bitcoin ATMs.

Senator CANAVAN: Do you have ATM clients at the moment?

Mr Cullen: Yes, we do. We have just finished a development cycle for an ATM client.

Senator CANAVAN: Do you know how many ATMs there are in Australia?

Mr Cullen: It would be fewer than 10.

Senator CANAVAN: Fewer than 10 in the whole country. Where are they?

Mr Cullen: Off the top of my head, there are three in Melbourne, one in Brisbane and I think a couple in Sydney.

Senator CANAVAN: Presumably you are fairly connected in with the bitcoin community. Is it growing in Australia? Are people using it? Is there data at the moment on the use of bitcoins in Australia, not just globally?

Mr Cullen: You could work it out. There is growth. My user group has 200 members. The Sydney meet up last night well exceeded that. It is growing as people are becoming aware. But one of the biggest benefits for accepting or using bitcoin is consumer protection. I might quickly talk about that.

In a traditional system, when you pay via credit card you are literally handing your wallet to someone and saying, 'Take out as much funds as you see fit and hand the wallet back to me.' We have legal frameworks to stop people doing that but as history shows that process is flawed. There are a lot of actors along the way who can maliciously or unintentionally lose that data. Whereas, a bitcoin system is a push system. I will never reveal my information to you. You will send me an invoice and I will sign a transaction on my computer using my private keys and then push that transaction, unencrypted, to the network for every actor to witness. From a merchant point, because transactions are for all intents and purposes irreversible, that allows trades to markets or in areas that typically would not be acceptable to trade in. I have one client who has done over half a million of consumer electrical sales and has zero fraud.

Senator CANAVAN: Who is he selling to?

Mr Cullen: It is anyone in the world.

Senator CANAVAN: He is based in Australia?

Mr Cullen: Yes, he is based in Brisbane. He has sold to over 50 countries worldwide and with zero fraud.

Senator CANAVAN: He only accepts bitcoins?

Mr Cullen: He only accepts bitcoin.

Senator CANAVAN: Just on the consumer safety: you are saying that the consumer safety is a selling point for bitcoin, I suppose. What are the risks though? We heard earlier about the potential for stealing bitcoins and those things. Are they evident in the community now? Do people lose bitcoins?

Mr Cullen: Yes, that is a good point. With bitcoin, the consumer or the user is entrusted with their own private keys. Effectively, everyone is their own bank. That is a scary and an exciting opportunity. But I would argue that a central repository with everyone's data in it that is susceptible to an attack is probably worse than a distributed system where everyone's private keys are distributed by themselves.

The bitcoin protocol has a few things built in to stop loss of data. Mark did not touch on this. They are called multisignature accounts. We can think of these in a traditional model as a joint account, so we could have an account that requires, say, two of three signatures. You and your partner could be custodians of the account and keep the third signature in a vault et cetera.

Senator CANAVAN: What do you mean by signatures—an electronic type?

Mr Cullen: Sorry, I should say 'as private keys'—as the keys to sign the transaction.

Senator CANAVAN: Like a wi-fi password or something like that?

Mr Cullen: You could think of it that way, yes.

Senator CANAVAN: I think we will hear from the Australian Digital Currency Commerce Association their proposal for a sort of self-regulatory environment. What do you think of that idea? Obviously we want to protect against people doing the wrong thing in this industry. Do you think that kind of model can work, or would you prefer other types of regulatory models or just a complete open slather arrangement?

Mr Cullen: To be honest, regulatory is not really my expertise. But what I would like to see, and what I am doing, is educating people on how to stop theft and loss of bitcoin. I think there should be, maybe from a government point, more education into this space. We talked briefly—I forget who asked the question—about what this private key is, and Mark touched on it briefly: it is just an arbitrary string of characters. That is correct and it also is incorrect. It is just a number. It is literally just a number, albeit a number that is so large that the number of combinations to try and guess that number is just not feasible. So I think a broader understanding of what the private key is and why that information is sensitive is one of the ways to bring adoption into this space. I think that is done through education and through forums like this.

Senator CANAVAN: I am going to the issue that, if storing that number then becomes an issue—and I suppose, if I have a lot of bitcoins, I probably do not want to carry them around on a USB stick—

Mr Cullen: That is right.

Senator CANAVAN: or even on Dropbox or something like that. I would probably want to have them secure with some kind of exchange or wallet, as we were speaking about before. Of course, there was a high-profile failure earlier in the year with MtGox.

Mr Cullen: Yes.

Senator CANAVAN: To what extent do you see the risk to your industry of cowboys, if you like, in the industry doing the wrong thing and therefore hurting the reputation of everybody in the industry? Is that a great risk?

Mr Cullen: Again, it is about education. There are ways, as I said, to provably know that that company is solvent. With MtGox, if they had used a proof of solvency, we could have seen that they did not have the funds that they said they did, so people could have had that be transparent. I think exchanges et cetera will take on these features and have a competitive edge over their competitors, so you will only do business with an exchange, and it will have proof of solvency. By the same token, using a multisignature account, I could jointly sign my coins on MtGox and myself, requiring both parties to sign that transaction in the event of an exchange, so no one actor can ever spend those coins. So we can avoid scenarios like MtGox through education and through best practices.

CHAIR: Can I just follow up on that. I will just go back to what Mr Pesce said earlier, just to get the order right. There is the ledger, which is the block chain. That has proven to be incredibly secure and strong—impenetrable is probably the wrong word, but it has been demonstrated to be a kind of Swiss banking system. It is a kind of vault. That has been fine; there has been no issues there and there is faith in that. Separate to that you have got the exchanges which stem off that. My interaction with the block chain is through the exchanges, and that is where they maintain my wallet and do those kinds of things.

I am just going to note here that ASIC said that the weak link has been the kind of exchanges. And your point, Mr Cullen, is that as we go through this process the competitive nature of the exchanges and market forces will mean that the trusted, successful exchanges are the ones that are going to succeed. Of the others, some will fall over, some will get bought out and some will get unprofitable.

But you are effectively saying that what we are going through now is the market forces making a determination on which of the exchanges are going to come to fruition and which of the exchanges are going to disappear—vanish.

Mr Cullen: I get asked this a lot of times, and it was touched on here today: where do we buy coins from? I would advise that we buy from Australian exchanges like CoinJar or CoinTree. They have ABN numbers and they are based in Melbourne so they abide by our laws and regulations. There are other, offshore exchanges but, like any purchase on the internet, you have to be diligent. You have to work out who you are dealing with and if these companies are reputable. Perhaps you should start small and only risk the amount of money you can afford to lose—just like any transaction on the internet.

CHAIR: But the point I want to make is that what happened with MtGox was not a reflection on the ledger—the block chain.

Mr Cullen: No.

CHAIR: That was a reflection on the exchange itself.

Mr Cullen: That is right.

CHAIR: I just want to make that distinction, and get my understanding right on that.

Mr Cullen: It was run by criminals.

Senator CANAVAN: What exactly went wrong with MtGox? How were they able to defraud people?

Mr Cullen: It was basically a Ponzi scheme: I can sell two people one bitcoin each, but I only have one bitcoin on my balance sheet. I can make a website that shows them whatever I like, but if they both withdraw that one bitcoin, therein lies the problem.

Senator CANAVAN: So it was a bank effectively? That is exactly what the Commonwealth Bank does. It does not have all the money in its vaults to pay everyone out if we all went there today.

Mr Cullen: I will decline to comment on that.

CHAIR: I think we will leave bank bashing to another time!

Senator CANAVAN: That is a different inquiry.

Mr Cullen: Exactly right. And using a proof of solvency, we can show that they are 100 per cent solvent for the amount of money. So, like you said, using bitcoin actually solves problems that we are seeing today in the banking and financial sector.

Senator CANAVAN: And I suppose that is where some would argue that regulation can help in the sense that it is fine for MtGox or some other entity to say, 'Yep, I'm solvent; please trust me.' But obviously, when the confirmation is coming from the interested party it will carry less weight, whereas if there was a third party and a regulator and a creditor, that could provide some kind of certification stamp and perhaps help the industry. What do you think of that potential?

Mr Cullen: Sure. Anyone that audits these companies can also make mistakes.

Senator CANAVAN: Sure.

Mr Cullen: And all of these audits come at a cost. With a proof-of-solvency scenario these costs are literally zero, and anyone has the potential to do this. So again, these systems should be embraced.

CHAIR: There are a few more questions that I would like to ask, and in particular about the recent decision by the NAB in April 2014, but I might bring that back to the panel because there might be other views on that as well. Thank you, Mr Cullen, for making yourself available.

GUZOWSKI, Mr Christopher, Managing Director, ABA Technology Pty Ltd

[10:09]

CHAIR: Welcome, do you have any comments to make on the capacity in which you appear?

Mr Guzowski: We operate bitcoin ATMs around Australia and we are developing a number of different bitcoin software solutions for consumers and merchants alike.

CHAIR: Because we are very conscious of how limited our time is, I am going to ask you to make some opening remarks and in doing so—and you have probably already answered this—could you explain where your expertise and area is so we can make sure we are directing the right set of questions to you?

Mr Guzowski: Thank you. Bitcoin, at its most fundamental level, is a breakthrough in computer science—one that builds on 20 years of research into cryptographic currency and 40 years of research in cryptography. The practical consequence of this breakthrough is that bitcoin gives us, for the first time, a way for one internet user to transfer a unique piece of digital property to another internet user, such that the transfer is guaranteed to be safe and secure, everyone knows that the transfer has taken place and nobody can challenge the legitimacy of the transfer. Some have called it the invention of digital scarcity. Digital money is the first type of property to be transferred in this way. The consequences of this breakthrough are hard to overstate. Bitcoin's commercial potential is extraordinary, and we are only just beginning to develop applications to realise this potential. Two hundred and ninety-five million dollars of venture capital investment has flown into bitcoin related companies so far in 2014. This is significantly more than was invested in internet related companies in 1995.

The bitcoin ledger is a new kind of payment system. Anyone in the world can pay anyone else in the world any amount of value of bitcoin by simply transferring ownership of the corresponding slot in the ledger. You put value in, transfer it and the recipient gets value out—no intermediary required, no friction and, in most cases, no fees. Earlier this year, a random spectator at a televised sports event held up a placard with a QR code and the text, 'Send me bitcoin.' He received \$25,000 in bitcoin in the first 24 hours, all from people he had never met. This was the first time in history that you could see someone holding up a sign in person, on TV or in a photo and then send them money with two clicks on your smartphone.

CHAIR: Just before we move on from this, did he explain what he needed the money for, or was it just for his own personal use?

Mr Guzowski: I think it was a social experiment.

Senator CANAVAN: Is this hearing televised, Chair? Can I do the same!

Mr Guzowski: I would like to demonstrate this happening live, later on, if you give me the opportunity. The fact that bitcoin has almost no fees is extremely important. Bitcoin is the first internet-wide payment system where transactions either happen with no fees or with very low fees, down to fractions of a cent. Existing payment systems charge fees of two to three per cent due to friction incurred by multiple intermediaries in the transaction process.

What is the future of bitcoin? Why would any merchant want to accept bitcoin as payment? Venture capitalist, Netscape founder and big bitcoin advocate, Marc Andreessen, has given the example of an online electronics retailer. Profit margins for many online retailers are under five per cent, which means that conventional 2½ per cent payment fees consume half the margin. Bitcoin's frictionless nature means that this money could be reinvested in the business, passed back to consumers or taxed by the government. Australian online retailers marketing to an offshore market particularly lose competitiveness due to even higher international payment fees. To give you a feel for this market, e-commerce sales in 2014 are forecast to top \$1½ trillion.

One immediately obvious and enormous area for bitcoin based innovation is international remittance. Every day hundreds of millions of low-income people go to work in hard jobs in foreign countries to make money to send back to their families in their home countries. Over 600 billion was forecast by the World Bank for this year alone. Every day, banks and payment companies extract exorbitant fees, often upward of 10 per cent, to transfer this money. Bitcoin, with little to no fees and no intermediaries, will make remittance costs negligible. To be clear, this usage of bitcoin alone will produce an economic saving approaching \$60 billion annually.

A third fascinating use for bitcoin is micropayments. Micropayments have never been feasible, because it is not cost-effective to process small payments through the existing credit, debit and banking systems—think of payments of one dollar and below, down to fractions of a cent. All of a sudden, with Bitcoin, that is easy. Bitcoins have the useful property of infinite divisibility, currently down to eight decimal places, so you can specify a very small amount of money, like a thousandth of a cent, and send it to anyone in the world for free.

Content monetisation is a great example. One reason media businesses such as newspapers struggle to charge for online content is that they need to charge either all—the entire subscription fee for all the content—or nothing, which then results in all the terrible banner ads on the internet. All of a sudden, with bitcoin, there is an economically viable way to charge otherwise small amounts of money per article, per section, per hour or per video play et cetera.

I hope that I have given you a sense of the incredibly exciting promise of bitcoin. Bitcoin offers a plethora of opportunity to reimagine how the financial system can and should work in the internet era and a catalyst to reshape that system in ways that are more powerful for individuals, government and business alike. I am happy to take questions.

CHAIR: That was fantastic. Thank you so much for that—that was a really good opening statement. I want to touch on a couple of the specific points you made because they are quite interesting. I had not heard this before. In talking about the content, you say that the broader challenge is how you have a newspaper-video industry that is sustainable. At the moment, the way we have been doing it is by paying a monthly subscription fee of, say, \$10, \$20 or \$30, depending on the supplier. You are saying that this would be an opportunity to have a whole micropayment—a new way of being held to pay for content and to sustain comment.

Mr Guzowski: A pay-per-view system where you could pay 5c to read an article—and that is, literally, scanning a QR code, pressing a button and having access.

CHAIR: That is really interesting.

Senator CANAVAN: Is anybody doing that right now?

Mr Guzowski: There are a few players doing it at the moment, but there are a number of significant media organisations looking into it.

CHAIR: Any of the Australian media organisations?

Mr Guzowski: We are in discussions with a number of Australian media organisations.

CHAIR: I do not want to embarrass you to name them, so I will not ask you to do that.

Mr Guzowski: Thank you.

CHAIR: I assume that is commercial-in-confidence. Apart from the Australian media players, are there other kinds of industries that you are looking at that seem quite innovative and different?

Mr Guzowski: The bitcoin businesses are numerous—from bitcoin exchanges to bitcoin broking services to services for merchants to accept bitcoin. There are financial services around bitcoin with derivatives to help mitigate the risk and bitcoin mining, which is to facilitate the reconciliation and clearing of payments, which was touched on before.

CHAIR: Where is most of the mining done now? In a discussion earlier it was said that somebody is doing it in WA and, I think, someone is doing it in Brisbane. Is most of it done in the US? Where in the world is most of this happening?

Mr Guzowski: It is very much driven by power cost because that is the main operational cost of performing bitcoin mining. I believe that there are large mining operations in Iceland because Iceland has plentiful renewable energy from geothermal sources, which is essentially free because the capex has been paid off. They also have a cool climate, which allows for the natural cooling of the machines, which heat up, and it means there is no additional cost for air conditioning. I believe there is a lot of mining being done in Texas and in Washington state in the US as well.

CHAIR: You run ATMs.

Mr Guzowski: That is right.

CHAIR: Where are your ATMs?

Mr Guzowski: We have one in Westfield Sydney in Pitt Street Mall.

CHAIR: I have seen that one.

Mr Guzowski: Pitt Street Mall is the fifth most expensive retail street in the world, for the record.

CHAIR: You can come to our retail leasing inquiry next week if you want!

Mr Guzowski: We have one in the Emporium in Melbourne and we have one here in the Canberra Centre.

CHAIR: How does it work? I have seen the machine; I have not used it. If I go to this machine will you convert? If I do not already have a wallet—not knowing the answer to this is going to make me sound really silly, so I apologise—can I go in with \$20 and put it through your machine and it will get put into my wallet as bitcoin?

Mr Guzowski: That is right. Our ATM is almost like a foreign exchange kiosk, but it is automated; it is a piece of hardware. Somebody can go up to the ATM and purchase bitcoin the cash. They scan their QR code, which is their bitcoin address, or we can print—

CHAIR: Is that their wallet?

Mr Guzowski: That is their wallet. They nominate where that bitcoin is sent. They enter the cash into the machine, confirm the transaction and it is sent immediately to their wallet. Alternatively, they can send bitcoin they already own to the machine, essentially selling it, which we then, as an agent on their behalf, sell on the open market. And it can dispense cash for them, so they can both liquidate their bitcoin holdings and purchase bitcoin through the machine. We identify our users before they can transact with the machine.

Senator CANAVAN: What you mean by identify? How does that happen?

Mr Guzowski: We scan their ID, we take a photo of them and we verify that the two things match up before we allow them to transact.

Senator CANAVAN: Why do you do that? What is the risk?

Mr Guzowski: We do that to pre-emptively comply with anti-money-laundering and counterterrorism financing regulation. We know that bitcoin is still in regulatory limbo in Australia, but we are pre-emptively being compliant to prove the legitimacy of the technology.

CHAIR: On that point, I am going to quote. As part of this inquiry, we will obviously be approaching them the Australian Transaction Reports and Analysis Centre, AUSTRAC. I imagine I would be very surprised if they did not come to a future hearing. They have expressed concern about the risk that digital currencies could pose to finance terrorists or other nefarious kinds of activities. I guess there are two questions. Firstly, how legitimate a concern is that? They will have their opinion. Secondly, if it is a legitimate concern, what is the best way that you feel you can address the risk of digital currencies being used in this way?

Mr Guzowski: Sure. It is a legitimate concern. It is of similar concern to how cash can be used, honestly.

CHAIR: All I know is that it is by bank accounts.

Mr Guzowski: However, all bitcoin transactions go through the bitcoin ledger. Therefore, it is fully auditable. That is why we have discussed as the ADCCA—of which our company is a founding member—that there should be oversight on the on ramps and off ramps into bitcoin—that is, when people buy bitcoin and sell bitcoin. So that if we identify the user that is buying and selling bitcoin, thereafter there is a transfer—

CHAIR: That is with exchanges.

Mr Guzowski: Exchanges or ATO or other vending services of bitcoin.

CHAIR: ATMs are an exchange, are not they?

Mr Guzowski: No, we are an agent to an exchange. So we are just a facilitator for bitcoin transactions.

CHAIR: Fair enough. So just with a comparison to the normal banking world, you are like what Diebold is in builds of the ATMs.

Mr Guzowski: No, we are practically like a Travelex for bitcoin which is unmanned, which makes it more efficient.

Senator CANAVAN: So what—I am ignorant of all this—requirements are on Travelex at the moment to record and report the transactions they facilitate in various foreign currencies?

Mr Guzowski: I am not a regulation compliance expert, but when I used to Travelex last, they asked me to present my ID. So I identified myself before transacting with them and I did not pay GST on the Australian dollars or the US dollars.

Senator CANAVAN: So you require the ID. Have you had any requests from law enforcement authorities to provide details?

Mr Guzowski: I am not privy to disclose that, unfortunately.

Senator CANAVAN: I am not asking for the details of that.

CHAIR: What was the question?

Senator CANAVAN: I just asked has he had a request to disclose information from a regulatory authority.

Mr Guzowski: However, we have met with law enforcement officials on a number of occasions and expressed our wont to cooperate with any request—

Senator CANAVAN: That was going to be not my next question. Do you have in place any guidelines about that reporting within your business at the moment?

Mr Guzowski: We have full transaction reporting in place which, if required by law, we could supply like to law enforcement.

Senator CANAVAN: What sort of threshold or triggers to think you would need to provide that information? Would it be just simply a request from an authority?

Mr Guzowski: We compile that information regardless of the transaction size. It is all software so it is all very easy to program into our workflow and I guess that is why, as the ADCCA, we are trying to have a conversation about ideally a self-regulatory framework, where we put standards on the industry and we implement those standards in the software, in the workflows when the industry is starting, rather than have some standards come in place or regulations come into place when the industry is already in full swing, which is much harder to implement and will cause disruption to services.

Senator CANAVAN: Presumably here there is a balance between the privacy of people's information that you hold and their transactions and the requirements of various authorities as far as privacy goes.

Mr Guzowski: We maintain best practice as far as privacy goes.

Senator CANAVAN: So how much work—I am sure this is a question we are going to ask the organisation you are a member of later. How much work have it done in trying to design best practice guidelines around the protection of privacy but with cooperation.

Mr Guzowski: As the ADCCA we have been working very hard discussing it with professionals in the compliance field, experts in the payment space and experts in financial services compliance to come up with the most effective self-regulatory framework.

CHAIR: Going back to the scenario I gave you earlier, I want to get the taxation issue clear. If I go to your ATM in the food court in Westfield in Pitt Street and put \$20 into the machine to convert it to bitcoin so that I can pay for something, in doing so the Australian Taxation Office will charge me 10 per cent GST on the transaction.

Mr Guzowski: If we were selling our customers' bitcoin we would apply 10 per cent GST, as per the recent ATO ruling. However, as an Australian company, we do not sell our customers' bitcoin. We facilitate for them to purchase bitcoin from overseas vendors, and just provide the technology to do that. We charge a margin on the bitcoin, a spread, and we charge GST on that.

CHAIR: I want to highlight the ridiculousness of the taxation issue. There may be an argument put that by having this there was a revenue opportunity for the Australian government by charging 10 per cent GST on these transactions. The point you are making is that the simple global nature of all this means that you would not be competitive if you were going to an Australian processor. You have to go through an international process to be internationally competitive.

Mr Guzowski: My take on the GST ruling is that it has caused a lot of confusion in the industry. On the one hand it has created clarity because they have created some definition of bitcoin and classed it as an international asset. But on the other hand putting GST on it has meant that it puts additional friction on transactions and it completely sets it apart from other types of currency and does not make it practical to purchase locally. So, yes, it has sent a lot of businesses offshore. It is putting a brake on the industry, for sure.

CHAIR: I just want to note the presence of Senator Whish-Wilson. I note that the Senate is sitting, so he may have to come and go.

Senator CANAVAN: To finish up on the chair's questions and this issue about the fact you are not charging GST when I go to one of your ATMs and buy bitcoin—

Mr Guzowski: We are charging GST on our services.

Senator CANAVAN: But if I buy bitcoin from you?

Mr Guzowski: You are not buying bitcoin from me. The machine is facilitating for an overseas seller to sell it into the Australian market.

CHAIR: And the reason you are not using Australian sellers is that it would cost you 10 per cent more?

Mr Guzowski: That is right. That is what I was going to clarify.

Senator CANAVAN: It goes to the issue Mr Sommer raised earlier about this being inconsistent.

Mr Guzowski: Could I demonstrate a bitcoin transaction using software that we built here in Australia, and we have been working for six months to do it. I want to demonstrate the exciting nature of it.

A software demonstration was then shown—

Mr Guzowski: I am showing you on my computer a web site that accepts bitcoin as a means of payment. Also, I have on my phone a wallet that we have developed, and I am going to send bitcoin from my wallet to the web site, which could be any person or merchant anywhere around the world. I press a button to scan a QR code. The scanner pops up and I scan that.

Senator CANAVAN: Does it work through NFC?

Mr Guzowski: It will very shortly. It has now been scanned in and I press send. I enter my code, as security, and it is sending. A tick just popped up on the screen showing the payment has been received and the transaction has gone through. That is the same service that Visa and MasterCard perform for a large transaction fee. It is the same service PayPal, an American company, performs. They process \$300 million in transactions a day. Because of the Bitcoin technology, an Australian company based in Sydney, using local talent has developed this technology, which allows merchants to accept payments from all around the world for free, immediately, securely. That is a very exciting development and something that we have developed here in Australia. That is something we could champion, if we pioneered self-regulation in this industry and our financial institutions could go out and expand their customer base in the regional markets providing this technology, which is so easy to use and can provide financial services to a whole host of new customers.

CHAIR: You said before 'for free'—I assumed that there was some kind of nominal transaction charge, because how else are you making money?

Mr Guzowski: No. From now our point of view, we provide this service and it is a question of developing this service—we will charge the merchants a monthly fee for allowing them to not be charged a per transaction fee. There is a clear business case for a merchant to use our services because they open up to a new market of the Bitcoin community, they do not get charged a transaction fee and they get charged a very nominal monthly fee for the service. There is a clear business case for them. Then consumers can do it for free.

A consumer can voluntarily add a so-called minus fee, which is fractions of a cent, to expedite a transaction—that is really a technicality. The way the network is financed is through mining and the miners, by the network, are remunerated with 25 newly-issued bitcoins every 10 minutes for solving the algorithm and ordering the block chain. That service is reconciling all the transactions that occurred in the last 10 minutes, it is a clearing house function and mild inflation of the number of bitcoins issued—that is how the system is financed rather than on a per transaction basis.

Senator WHISH-WILSON: Mr Guzowski—nice mo by the way.

Mr Guzowski: Thank you, Senator. I believe the Movember Foundation will be accepting bitcoin next year.

Senator WHISH-WILSON: Good. Has there been any development in the secondary market for bitcoin, like derivative markets?

Mr Guzowski: There are, and there are fascinating Australian companies that are developing such financial products—I will plug my friend Jeremy Glaros at Coinarch, who are ex-Macquarie bankers who have resigned from their very high-profile jobs to innovate in this space; they are a Sydney-based company who are developing products to mitigate risk for merchants and consumers to be able to hedge the volatility risk of Bitcoin and make it a safer environment, and to meet different users' needs.

Senator WHISH-WILSON: Can you give us a breakdown or do you have any data at all about the volatility of Bitcoin in connection with it being used for transactions rather than speculation?

Mr Guzowski: It is difficult to break down what volume of transactions is transactional volume and what is transaction volume—it is just as difficult, as it is on the oil market, to define which oil trades are actually by end users and which ones are by financial speculators.

Senator WHISH-WILSON: It is, yes.

Mr Guzowski: The fact is that there are about \$100 million of transactions going through the block chain on a daily basis and the volatility, I last heard, has dropped from 10 per cent on a daily basis two years ago and five per cent last year down to two per cent daily this year—there is clearly a downward trend in the volatility. That is because more exchanges are opening up around the world, there are more traders, there are more market makers, there is more market depth, more liquidity and therefore the spreads are being lowered and the volatility is reducing.

Senator WHISH-WILSON: Have you approached the ASX at all or have you had briefings with the ASX at all about potential trading platforms for Bitcoin?

Mr Guzowski: Not yet. Personally, I have not had those discussions with the ASX. However, there is definitely potential for such discussions and their use of this technology, but I would hazard a guess that that is a few years down the line.

Senator WHISH-WILSON: I figure if financial markets can start pricing the risk and are comfortable with pricing that risk—particularly, in liquid secondary markets—then you are on your way to getting it accepted for transactions. I am not sure how far advanced you are in that respect.

Mr Guzowski: I am expecting a number of exchanges to develop in Australia servicing the local market. It would be pure speculation to say that they would be cooperating more or less with established players, but I am sure they are keeping their eye on this space.

Senator WHISH-WILSON: On speculation, have you heard any rumours about Launceston becoming a potential exchange?

Mr Guzowski: I may have read an article or two.

CHAIR: I was not aware of that. Mr Guzowski, there is going to be a panel discussion later today, which I believe you are participating in. I am very conscious of time and the fact that we have on the line Ms Perianne Boring, President of the US Chamber of Digital Commerce, who is calling in from Washington. Thank you, Mr Guzowski.

BORING, Ms Perianne, President and Founder, Chamber of Digital Commerce (USA)

[10:35]

Evidence was taken via teleconference—

CHAIR: Welcome, Ms Boring. Thank you for participating in our inquiry, and I really appreciate you making the effort to help us. To give you a very quick background of what we are doing in Australia, for the first time we have started Senate hearings into the future of digital currency, and we are exploring not only the business and other opportunities in the Australian context but to what and extent and in what way should we be shaping our regulations and rules in the Australian domestic context, and where we have it right and where we have it wrong. I know there are going to be a fair few questions from senators, but before we go to questions, do you have any opening remarks or an opening statement that you would like to make?

Ms Boring: Yes, I do. Thank you for allowing me to testify via teleconference. I think it is extremely important for public policy makers to engage with industry on digital assets and digital currencies because it is important for dialogue between the two. I am the president and the founder of the Chamber of Digital Commerce. We are a 501(c)(6) trade association representing the digital asset and digital currency industries. Our mission is to educate and facilitate the dialogue with policy makers and regulators to advocate for a pro-growth legal framework that is also consistent with the best interests of the public. We do this through a three-pronged approach: (1) advocacy; (2) public affairs; and (3) by building an organising the digital assets community.

Firstly, our advocacy efforts focus on educating public policy makers and regulators on the potential benefits of digital assets such as block chain technology to protect future and promote further innovation. Our view at the chamber is that block chain technology is revolutionary and could soon be fundamental to the world's financial systems because it has the potential to make commerce easier, more transparent, has lower transaction costs and harvests the power of the internet to unlock a whole new level of digital commerce. Our advocacy efforts here in Washington, DC include proactively building strategic relationships with public policy makers through open dialogue and facilitate public policy makers education on digital currency and its benefits, and reinforcing the industries that occasion to grow in the economy in a legal and ethical way. Our main focus is with US congress and US federal agencies and departments that have jurisdiction over this technology.

Secondly, we also provide public affairs services to help shape the public perception of the industry through responsive and proactive media engagement. We believe the media plays a very important role in public policy making, and in the US we have found that there has been a lot of misinformation about this technology. We work with the media and with the public to sort out the facts and to provide real-time responses to crucial developments or updates.

Thirdly, we are working to encourage widespread adoption, by building third-party coalitions. We seek out small businesses and merchant and consumer organisations that have found value in the payment protocol, and we drive them to advocate and support this technology on their own behalf. We are also working to bridge the gap between the traditional financial institutions and the digital currency industry. In summary, we are a business league that helps facilitate open and transparent dialogue with public policymakers.

Just as government wants open, transparent, safe and stable markets, so do we. Therefore we have a mutual interest in working together. Just as the internet is to communication, we believe digital assets will be to currency and commerce. There will be stumbles along the way—we have already seen some—and, as our lives are becoming more and more digitised, it is important that consumers have a safe way to store and move digital assets. As technology is changing the world, commerce has to evolve with it. I am happy to take any of your questions.

Senator CANAVAN: Thank you very much for that, Ms Boring. We very much appreciate you joining us by teleconference. I presume it is the evening over there, is it?

Ms Boring: It is Tuesday night at 6.40.

Senator CANAVAN: That is not too bad; it has worked out pretty well. I should say that the chair, Senator Dastyari, has just stepped out, but I am Senator Matthew Canavan. I also have here at the table Senator Whish-Wilson from Tasmania, and I am sure we both have some questions. Can I just start by asking you to outline how US regulatory authorities define and approach Bitcoin and other digital currencies at the moment? I do not know if you heard any of the testimony this morning, but we particularly focused on taxation issues. How, in general—and in particular—with regard to tax, do the US authorities regulate digital currencies?

Ms Boring: On your first question about the regulatory environment and how public policymakers are looking at this technology, I will first say we have a very bad recipe for public policy making at the moment, because

there have been some scandals, some mishaps and some road bumps. I am sure you have heard of them all, from Silk Road—I know in Australia you had your own Silk Road-type website issues. There was the fall of Mt. Gox—I heard somebody else speak about Mt. Gox this morning at your hearing as well—and then Liberty Reserve was another bad actor that created tons of media attention.

The media is creating hype around these scandals. They are not focusing on the positive aspects of how this technology is benefiting the economy. Regulators feel like they have to do something, because they have been tasked with implementing consumer and investor protections, but yet they do not have a full understanding of how this technology works. In fact there are very few people that really understand blockchain technology, because it is so new. So that is not a good recipe for public policymaking. That is why we came about forming the Chamber of Digital Commerce, to start working with public policymakers and educating them on what this is, to address their public policy concerns.

In the US, on the federal level, we have identified about 10 federal agencies and departments that somehow have asserted jurisdiction over this technology. I will go through a couple of them. You have the Securities and Exchange Commission that is looking at putting securities regulation and laws on this technology. Then you have the IRS, our taxing agent, which is calling this property. Then you have FinCEN, which is a department underneath the US Treasury that is looking at this under money transmission—

Senator CANAVAN: Can you just repeat that last one? I got the IRS; what was the next one after that?

Ms Boring: FinCEN, the Financial Crimes Enforcement Network—it is underneath the Treasury. They oversee money laundering, so they regulate money transmission. There is very, very tight regulation on top of those types of activities. They regulate Bitcoin like a currency. We also have the Commodity Futures Trading Commission, which is looking at this as a commodity. Then you have the intelligence agencies that are looking at this from their own respective views.

That is just the beginning of all the different agencies here in the US that are looking at this through their own lenses. This is a problem because it potentially could create a patchwork of inconsistencies among laws if every single agency wants to regulate this from their own different direction. It also can create a conflict of law, and there are a number of issues that can arise because of that. So it is getting quite complicated.

On the taxing side, you have the IRS, our taxing agent, calling this property, but if you have the IRS looking at this like currency you have issues, if there were any type of criminal activity, of how they will deal with that, because that is the conflict of law.

Senator CANAVAN: I just want to drill down a little. To clarify, you said that the IRS has defined digital currencies as property. Is that what you said?

Ms Boring: Yes, that is correct. That means, if you acquire bitcoins, whether you bought them or were paid in them or came across them, from the time you add them to your wallet to the time they exit your wallet you have to report capital gains or losses. It adds a number of reporting complications to dealing with this digital asset. It adds more onerous reporting requirements for users of bitcoin.

Senator CANAVAN: I know you do not have a VAT, a value-added tax, at a federal level, but you do have sales taxes at state levels, I understand. How have state authorities defined digital currencies or bitcoin, just in general, of course?

Ms Boring: Did you say state authorities?

Senator CANAVAN: Yes, state government. I believe you have sales taxes at the state level. We have heard this morning that, in Australia, a tax called the GST, which is effectively a sales tax, has been imposed on bitcoin since August. What is the definition in the United States?

Ms Boring: That is a good question and I am not sure that this question has made its way into the state regulatory process at this point. I have not heard anything of different states looking to tax this in different ways. We mostly focus on the federal government, so I am not that closely attuned to the state issues. However, money transmission is regulated on a federal and a state level, similar to our taxes. That is causing a major issue for exchangers—any type of bitcoin exchange—because, in order to operate an exchange in the US, you have to have a money transmission licence in every single state that you have customers. That creates a massive barrier to entry for a bitcoin exchange. It could take years to become fully licensed in the US in every single state and it could take multimillions of dollars. That is an issue that we are taking very, very seriously because it is very difficult for an exchange to become established and to be compliant and legal in the United States. The barriers to entry to offer this type of service to the industry are very massive and there are very few players doing this within the confines of the laws. That is dangerous. In order to have a healthy and balanced economy, you need start-ups and you need small businesses, but the way that it is operating at state level provides very little flexibility for new

companies or small business, which leads to oligopolies, cartels and monopolies, which is very dangerous and not something that fosters healthy economic growth.

Senator WHISH-WILSON: Could I ask you to clarify something, please. Does all that you were saying there apply to bitcoin? My understanding was that it is a completely open financial network and does not have the restrictions of a lot of those complex rules. Is that correct or are bitcoin exchanges or financial services being developed around bitcoin subject to the same rules and restrictions that other financial services are?

Ms Boring: A lot of that is currently being decided. What is very difficult is that bitcoin is in block chain technology. It is not just a currency; it is also a payment network. You have a decentralised public ledger which also is moving financial assets over the web. Any time you are moving or transmitting money it is highly regulated, especially in the US. There are some companies that are helping facilitate that process. Some of the companies operating in the States are simply software providers and they do not actually touch any money or financial assets or the bitcoins. They do not hold the keys to the customers' accounts; therefore, they are not operating as custodians. It is difficult for those policymakers who are looking to regulate this because this is a whole new way to do digital commerce. We completely take the traditional finance system and put it upside down, and then we have customers dabbling in the financial services area that is very, very strictly regulated—so we are seeing a lot of issues and conflicts of law here. It is a big problem. I would say the biggest problems are with exchanges and money transmission and how customers can buy and sell bitcoin. There are some serious regulatory challenges we are still looking to overcome.

Senator WHISH-WILSON: Do you see those future regulatory challenges then as an opportunity or as a problem for the development of bitcoin? Given potential perceptions around volatility, potential theft, the use of the services by criminals et cetera, do you see that regulation as an opportunity or a challenge?

Ms Boring: It is absolutely a challenge. I will say that every function of our lives is going digital—there is no putting this genie back in the bottle. Blockchain technology is a safer, more efficient means of digital commerce. The problem is that regulation, if we do not get public policy right, is going to make it a very long, slow, painful process, and I think the next 12 to 15 months here in the US are going to be extremely crucial for the adoption of bitcoin. I think adoption of bitcoin is absolutely inevitable; the only way you can stop it is by turning off the internet or turning off the global power supply. There is no getting rid of it. But it could be an extremely painful process if there is an extreme amount of friction during the regulatory process, which is beginning to form now.

Senator WHISH-WILSON: In terms of the Chamber of Digital Commerce, could you give us an update on how many businesses, for example, through BitPay or other, are using bitcoin, and what sort of daily transactions we are now seeing on the network?

Ms Boring: The industry is growing extremely fast. The last time that I looked at these numbers—and it has been a couple of weeks, so they might be out of date even at this point—there were over 100,000 merchants who were accepting bitcoin for payment. Those are just the ones that we know about; any company can print out and start a bitcoin wallet and be accepting bitcoins within five minutes. Not everything is reported, but I think it is important to know that these numbers are growing exponentially. Another important number and statistic to look at is the amount of venture capital money that is going in at this stage. This year alone close to \$300 million of VC money has gone into bitcoin-related companies; that far outweighs what we saw go into the internet during the earliest booms of the internet. This is a very important measure for where innovation is going and where we are going to see future growth.

Senator WHISH-WILSON: Have you got any sense of whether that liquidity is getting more transaction based or whether it is investment based?

Ms Boring: I still think we are in the extremely early days of bitcoin. If bitcoin were a city, we would be just laying the pavement of the road—we do not have lines on the road yet, there are very few cars operating on this road, we probably do not have lights yet and there is a lot of infrastructure that needs to be built in order for the end user to be able to drive mainstream adoption and for it to be end-user friendly, and we are still quite a way away from that. I think we are making extreme progress and the industry has grown in unrecognisable amounts just in the time that I have been involved in this space, which has been about two years. So, again, I do not think you can put the genie back in the bottle. I definitely think that this is a better way for commerce and that it is going to create jobs and allow for further innovation, growth and capital flows. It is something that we do not want to put at risk. It is taking time to lay the groundwork and it is important that we do that deliberately. I believe that there is a role for government in providing the guardrails to make sure that we have safe and stable markets. We are making extreme progress that is extremely impressive.

Senator CANAVAN: We are looking at the Australian regulatory situation, but do you see issues that go across borders? Does there need to be coordination amongst regulatory authorities and major developed countries to set some kind of global standard for regulation—would that be of use?

Ms Boring: I think that is a great point that you bring up, and it is very important that the G20 countries set the tone and the standard—just like we have done for the current financial system—so we can build a platform that is safe, secure and is going to foster an environment for trade and growth. Bitcoin is a global phenomenon. It has no bounds, and it is important that the G20 countries work together to foster a playing field that sets a tone that fosters international trade.

CHAIR: Ms Boring, your broad premise, which some of us accept, is that there is an inevitability to digital currency and that Bitcoin is probably the most effective and likely digital currency—if there is going to be a digital currency. Can you explain what you then see as the first-mover opportunities and advantages for a country like Australia, and perhaps also what the first-mover risks are? That is what we are trying to assess. There is an inevitability that it is going to happen anyway, so there is an argument that says, 'Would it be in our interests to be out in front on this; or should we wait to see where America and other places go first?'

Ms Boring: I think it depends on what you mean by getting ahead in this. Are you looking at putting forward regulation?

CHAIR: If we were one of the first of the G20 OECD nations to turn around and say that we are going to have in place a regulatory framework—not just let Bitcoin fit into the framework that it exists in by rulings and what not, which looks to be the path that the UK is going down—and then, in order to foster business and opportunity here in Australia, actively try to create a framework that fits around the fact that this is somewhat different and unique, my take would be that there will be two sets of arguments. There will be those who say, 'Yes, we should come out.' The Bitcoin community in Australia will obviously make the case and say that we should come out lead on this and provide the best framework. There will be others, perhaps on the regulatory front, who will say, 'Hang on. The Americans do this stuff very well. Other Western European nations are quite good in this space. Why not let them move first, and then we can follow behind?'

Ms Boring: I think the technology is still very nascent, and striking a balance within a pro-growth regulatory framework that does not hinder innovation is extremely tricky. There is a role for government, and there have been states within the United States that have come out, who wanted to be a first-mover on this. But they risked overregulation, and there have been some unintended consequences of that. For example, two of the most well-funded companies in the United States came forward and rejected this regulation. They said that they would not do business or serve customers in those jurisdictions, because they got it wrong.

I think it is really difficult to put forward a regulatory framework this early, and the US made some very great moves in the beginning stages of the internet by allowing the internet technology to grow and flourish before we started putting comprehensive regulation out there.

I think, if you want to invite this technology into your jurisdiction, the best way to do that is to provide regulatory clarity in existing laws, especially with the money transmission laws that can hinder these new systems in coming in and flourishing. I would go through and clarify which types of financial laws apply to these technology companies and which ones do not. Again, even that can be very tricky to do, but I think it has to be an extremely thoughtful process because it is such a new technology that very few people understand it. I do not think anybody even knows where it is going to go, because it has such a huge growth potential, and you do not want to put at risk the innovation, jobs and capital flows that could come from that.

Senator WHISH-WILSON: Could I pull you up on something you just said about new technologies. When we look at standard currencies that are national currencies, I am interested in competition for bitcoin in terms of other online currencies and what impact you think that might have on the future of bitcoin. Obviously, we have a limited money supply from individual countries. But what is to say that a number of competitors are not going to come into the bitcoin space and devalue the currency? I understand there are a number of other types of bitcoins already in the market. Is that an issue?

Ms Boring: We have what are called altcoins, and there are several hundred of those. Bitcoin does have a first-mover advantage over those other cryptocurrencies. I hate using the word 'crypto', but that is what these altcoins are. There are also noncryptocurrencies, digital currencies, that are out there that have been around for several decades. But bitcoin made a revolutionary leap in digital currency technology because it is a digital currency but it is also a payment system, so it offers different types of technologies from what other digital currencies do. Among the altcoins, bitcoin has a huge first-mover advantage. Over 90 per cent of the market share of these cryptocurrencies are bitcoin. I guess any coin could eventually be the winner in the long run.

Gavin Andresen, who is the core developer at the Bitcoin Foundation, said that, in the earliest days of the internet, people would call the internet a decentralised node of communication. Today it is funny to even think of the internet like that, because people did not know if the internet was going to be that new means of communication that won all. It is possible that other digital currencies could become the front runner, but right now it seems that everything is going into bitcoin. But the rules and regulations that affect bitcoin affect all digital currencies, whether they are crypto or non-crypto. So it is important that we get the regulation and the public policy right, because they can affect all these types of technology. It will also affect the existing financial system, the existing payment processors and money transmitters.

CHAIR: Okay. We are actually running a little bit behind, so with the consent of the committee we might pause it there. But, Ms Boring, I understand you are going to be participating in the panel discussion a little bit later—is that something you are available to participate in?

Ms Boring: Yes, sure. One more quick comment, because it is important: when it comes to bitcoin competing with national currencies like the US dollar, I think that is a foolish argument to make and I do not think anybody with credibility that we are working with here in the US is making that type of argument. Nobody is trying to overthrow the government's financial system. This is just about innovation and technology and strengthening the existing payments system. Nobody is trying to replace government-issued currencies.

CHAIR: Okay. Thank you.

Ms Boring: You are welcome.

SOMMER, Mr Andrew, Partner, Clayton Utz

TUCKER, Mr Ronald, Chairman, Australian Digital Currency Commerce Association

[11:04]

CHAIR: I welcome Mr Ron Tucker, from the Australian Digital Currency Commerce Association. Do you have any comments on the capacity in which you appear?

Mr Tucker: I am also the appointed delegate of one of the association's members, Bit Trade Australia, which is the country's longest-running fixed bitcoin exchange.

CHAIR: How long has it been running?

Mr Tucker: For 18 months—100 years in bitcoin years!

CHAIR: Before I invite you to make some opening remarks I want to acknowledge the fact that a lot of the proceedings that are underway have actually come from the initiative you and the Australian Digital Currency Commerce Association have taken to try to front-foot and engage in the political process. I commend you on that. Would you like to make an opening statement?

Mr Tucker: In turn I would like to thank the committee for allowing Australia the opportunity to step forward and allow these emerging businesses to bring this issue out into the open. It is something that does need to be discussed, and there are a lot of questions that need to be answered, and there are a lot of challenges with it. It is very big—it is internet big. We know what the internet did to communication 20 to 25 years ago with email. We know what the internet did to publishing, music and film et cetera.

The Australian Digital Currency Commerce Association was founded in April of this year to act as a unified voice for the Australian businesses operating in this sector. What promoted this move was the proposed ruling by the Australian Taxation Office to tax bitcoin like a commodity, a move that we thought did not make sense—and that was the general consensus of most stakeholders invited into the room that day, barring the ATO's representatives. We felt that it was not applicable and that it could result in driving the digital currency businesses that were emerging in the sector offshore, and potentially underground.

That was a domino that we had tried to prevent from falling one way. It did go that way. Again, we thank you for giving us the chance to address this. Fortunately, the ATO was the only area where the domino has fallen that way. Through the efforts, I believe, of ADCCA and the bitcoin community in meeting with politicians and regulators and briefing them—a bit of a bitcoin 101 over the last several months—the response from departments and regulators has been such that they have taken a bit more of a 'let's stand back and wait and see' attitude, and 'let's be more informed'. This has been very beneficial. The blessing in disguise there has been that in that sense we have not ended up with a lot of confusion and a lot of mess, as we have heard, unfortunately, from our friends in the US, with their 53 money regulators and 10 departments that have already made decisions that have caused quite a bit of confusion. We have a pretty clear landscape here. In fact, though the tax ruling has essentially sent bitcoin businesses offshore already, and caused some Australian bitcoin businesses to close down completely, it has also invited the interest of other international digital currency businesses to pay attention to Australia as a potential place to do business, not unlike perhaps Hong Kong is as a tax haven, or Ireland, where we see the tech giants Facebook and Google operate out of. We are already being identified early on as a potential place to bring this emerging digital currency business.

Since the founding of ADCCA we have made great strides in raising awareness amongst government regulators and legislators on the issues we face as an industry. We have met with numerous politicians and heads of government departments and agencies, as well as some of our counterparts abroad, and even delegates and representatives from the G20. We have also held the world's first digital currency summit, which took place in Brisbane during the G20. We are already planning a follow-up conference in San Francisco next year, to be called the Digital Currency San Francisco Summit. This is where we are proposing the formation of an international association called the GDCC, the Global Digital Currency Congress, where we are speaking with our counterparts abroad through all key stakeholder representatives—the finance sector, through the tech sector and through governments. There is a great deal of interest in this. This is aiming to take place at the end of August 2015. With the formation of the GDCC we are hoping to establish this formal body in time for the next G20, in Istanbul, Turkey.

Despite the newness of bitcoin and other digital currencies, my business was founded in only April 2013, 18 months ago. It is one of the oldest in the country. We are already seeing it affect finance and technology in Australia.

We have seen what the internet has done to mail, music, film and retail and it is now happening to money—it is happening a lot quicker too. With such change, however, comes risk—risk so that we put in place a regulatory regime which stifles innovation and growth. We recently heard CIO of the RBA Sarv Girm highlight in a speech that, yes, there are considerations, there are risks and there are questions that need to be answered around digital currency—we need to get the right framework in place. But the greatest risk of all is by not acting quickly early enough and being left behind. We have seen this: we can easily look at other examples that have been affected by digital disruption over the last 15 years.

If you have a look at the likes of Kodak, for example—the biggest film company in the world. They failed to capitalise on the emergence of digital camera technology; or mobile phone technology—a company called Nokia in 1998 to 2000 started putting cameras into their mobile phones and it quickly became the biggest camera provider in the world. What happened to Nokia? We have seen the Apple iPhone come along and usurp it.

Again, my point is: it is so important early on to be aware of this and to react with some level of agility and to build that in early, have these conversations and be prepared to make some front-footed steps today. I say this not just out of self-interest of course but also because I believe Australia is better placed than any other country in the world to take advantage of this technology and the opportunities that are in front of us.

Australia already has a world-leading financial services framework. Our banks punch well above their weight globally. Compared to places like the US, the regulatory measures needed here are relatively simple to implement. We do not have 53 money regulators; we have just a handful to deal with.

ADCCA is proposing a self-regulatory model whereby Bitcoin-centric businesses would submit to a code of conduct, if they join our organisation. I am happy to elaborate on these conduct requirements further during questioning, but they are benchmarked against best-practice financial services frameworks and organisations that are already in place and proven.

ADCCA will do most of the work to ensure we have a safe and dependable digital currency industry; however, we do need some small legislative changes to ensure that we get the best outcome. The first, as Andrew Sommer has detailed, is a change in the tax act to Bitcoin to tax it in a way which encourages its greatest area of commercial potential—that of being a medium of exchange. The second is to bring our sector within the financial reporting tent so we can fully comply with regulations related to AUSTRAC and the Attorney-General's Department. One thing we can do at the moment is have access to the Document Verification Service.

With these simple and agile measures, I am confident Australia can become a regional, if not global, leader in the digital currency commerce space. I welcome any questions.

CHAIR: It is a quarter past 11, and we want to get the panel discussion underway right on 11.30, so we only have a few minutes for questions; however, we can give you more opportunity during the panel discussion. We are calling some people internationally for that and we do not want to delay them. We will have to be quite firm about stopping from 11.20 to 11.30; however, prior to that—

Senator HEFFERNAN: What is your designation?

Mr Tucker: I am the chairman of the Australian Digital Currency Commerce Association. We represent the interests of the emerging DC businesses here in Australia.

Senator HEFFERNAN: You are out of the United States somewhere, are you?

Mr Tucker: Canada, originally.

Senator HEFFERNAN: You are a blood brother.

Mr Tucker: I have done my time in the US as well.

Senator HEFFERNAN: Last year, according to the World Bank, about a trillion dollars was involved in bribes. The cost of corruption was five per cent of GDP—\$5 trillion or thereabouts. The shadow banking market was 1¼ times global GDP, which is \$125 trillion, and derivative turnover was \$700 trillion. The amount of money involved in tax avoidance was about \$3 trillion. I say that, if we cannot fix this, we are going to redefine sovereignty. Are you talking about the redefinition of sovereignty?

Mr Tucker: What we are talking about is the potential for this technology to be able to eliminate fraud and tax avoidance. It is by its very nature built into the thing and, if we act quickly now, we will be able to save ourselves trillions as well as make ourselves just as much in the future.

Senator HEFFERNAN: As you would be aware, Canada has the world's safest banking system and the US is technically insolvent. Can you explain to me how this does not actually make the global community borderless, because it is a borderless currency?

Mr Tucker: It is: it is the world's first truly global currency.

Senator CANAVAN: You are proposing that you want to be defined under the tax act so therefore, by definition, transactions that occur with digital currencies or bitcoins will be liable to pay income tax or whatever—

Mr Tucker: Absolutely, unlike some of these people to which—

Senator HEFFERNAN: If you could define where the tax was due.

Mr Tucker: Yes.

Senator HEFFERNAN: But how do you do that? How do you find the home?

Senator CANAVAN: That is a good question. Do you see there—

Senator DASTYARI: Why do we not put that question to Mr Sommer. He is a tax expert.

Senator CANAVAN: That is fine by me.

Senator DASTYARI: Mr Sommer, can you explain the international tax implications?

Mr Sommer: Bitcoin fits within the existing frameworks of residence and source for the allocation of taxation on income. For the purposes of GST and VAT, it falls within the place at which consumption occurs. It all falls within the existing taxation framework.

Senator HEFFERNAN: But at what value? I have been critical of the free trade agreement with China because they will not actually put their currency on the market. How do you determine, in currency terms, the value of bitcoin if it is sort of shadow banking? What is the debt worth? In China, where there is no market attachment to the currency, and in the US, which is technically insolvent—it has borrowed US\$5 trillion from its own pension fund—how do you put a value on it to get a tax value of the debt? That is like China trying to argue that no-one in the world should have a market currency.

Senator CANAVAN: Is it not very different from China, though? China has a fixed currency regime.

Senator HEFFERNAN: It is different.

Senator CANAVAN: I am sorry—I just want to clarify this for the witness. The digital currencies and certainly bitcoin, which we have spoken about most this morning, on the other hand, are market traded. There is a market value. It is that market value that the ATO would use to determine CGT events and any other taxation liabilities. Is that right?

Mr Sommer: Yes, it would be the market value at the time of the relevant transaction. In relation to the valuation of loan books—that is not something I had not really focused on. But on a transactional basis, there is a point at which the transaction occurs. That transaction, for Australian taxation purposes, needs to be converted into—

Senator HEFFERNAN: From what I am hearing today, the more credence this gets, the more likely we are to have a redefinition of sovereignty—for the purposes of revenue leakage. The market value can vary from one waking morning to the next, depending on what is happening in the market. That in turn will absolutely, without any appreciation of sovereignty, alter your tax bill—if it is in bitcoin.

Mr Tucker: I take your point.

Senator HEFFERNAN: Do not respond too quickly. I have got my head around it; you need to get yours around it.

Senator EDWARDS: I think he can answer. He is pretty smart.

Mr Tucker: My suggestion would be that a big part of this conversation is about who is doing the defining. If sovereignty is going to be redefined, what we are pushing for here today is to ensure that Australian has its hands on the reins—as it is well-equipped for.

Senator HEFFERNAN: I am only a visitor

Mr Tucker: If we take a step back, obviously this is very much an international issue—and it is only going to become more of one. But we still have to start domestically with what is in front of us.

Senator HEFFERNAN: Can you do us a quick tutorial on the derivatives swap market—the \$700 trillion of turnover?

Senator CANAVAN: Chair, can I just say—

Senator HEFFERNAN: You need to be able to link—you probably cannot either—this to that problem.

Mr Tucker: Yes, and I can provide you with those answers, but they will not come directly from me; they will come from the community I represent. That is why the Q&A panel session that is coming up is going to be answering these questions not just domestically—

Senator DASTYARI: While we are on that note, because we need to have a quick break, I think there is a full Q&A panel at 11:30. I believe eight or nine people are going to be participating in that. That should be able to address some of the broader issues. I would love it if Senator Heffernan were able to stay around for that.

Senator CANAVAN: What percentage of the industry do you think you represent at the moment, Mr Tucker? I know that would be a difficult calculation to make.

Mr Tucker: It is difficult. That is a question we are actually looking into now. What I can tell you is that there are four founding members and we probably have about five dozen EOIs on the book. We were not prepared to open up membership and start ingesting members until we had a solid constitution worked out and some of these conversations had been had.

Senator CANAVAN: That has not happened yet?

Mr Tucker: It is due to open up in January.

Senator HEFFERNAN: The global agreement on taxation has not caught up with this. That is the big issue: the definition of sovereignty.

Proceedings suspended from 11:20 to 11:32

BORING, Ms Perianne, President and Founder, Chamber of Digital Commerce (USA)

CULLEN, Mr Lucas, Chief Executive Officer, Bitcoin Brisbane Pty Ltd

GUZOWSKI, Mr Christopher, Managing Director, ABA Technology Pty Ltd

PESCE, Mr Mark, Private capacity

SHAPIRO, Mr Adam, Director, Promontory Financial Group LLC

SOMMER, Mr Andrew, Partner, Clayton Utz

TUCKER, Mr Ronald, Chairman, Australian Digital Currency Commerce Association

ZHOU, Mr Kevin, Chief Economist, Buttercoin

Evidence from Ms Boring, Mr Cullen, Mr Shapiro and Mr Zhou was taken via teleconference—

CHAIR: I welcome back this morning's witnesses and some new witnesses. This session will be a panel discussion. Mr Pesce, Mr Cullen, Mr Sommer, Mr Guzowski and Mr Tucker have already participated in the hearing today, as has Ms Boring from the US. Our new witnesses are Mr Zhou and Mr Shapiro. Starting with those at the table, I will get each of you to tell us a little about why you are here.

Mr Guzowski: I am CEO and founder of ABA Technology, which operates bitcoin ATMs around Australia and is developing software applications for consumers and merchants to be able to use bitcoin more easily.

Senator HEFFERNAN: Perhaps we can get each witness to give their corporate entity and the ABN attached to the corporate entity—perhaps on notice?

CHAIR: We can do all that on notice. I think it would be an unfair request to put to them now.

Mr Pesce: I am here in a private capacity.

Senator HEFFERNAN: What do you do? Are you a banker, a drug runner? What are you?

Mr Pesce: I am neither. I have been an entrepreneur, inventor and technology analyst for 30 years.

Senator HEFFERNAN: What is your background? We need to know who you are, where you come from and so on.

Mr Pesce: My background in the sense of technology?

Senator HEFFERNAN: Where do you live, for a start?

Mr Pesce: Sydney. I am an Australian citizen.

Senator HEFFERNAN: Can we have some sort of identification?

CHAIR: He is a futurist.

Senator HEFFERNAN: Yes, but I like to have who people are in written form. You could say you are Joe Bloggs from the moon and we would not know any different. Have you got some way of proving your background—a CV or something?

Mr Pesce: You could probably look me up on Wikipedia.

CHAIR: We actually already have bios of everyone who is participating today. I will happily provide them to you, Senator Heffernan.

Mr Tucker: I am the chairman of the Australian Digital Currency Commerce Association. We are the peak industry body representing the interests of emerging bitcoin businesses as well as all cross-industry stakeholders. Additionally, I am the delegated representative of one of ADCCA's members, Bit Trade Australia, a fixed bitcoin exchange. Our ABN is 42163237634.

Senator HEFFERNAN: Are you here representing the representative body or Bitcoin?

Mr Tucker: I am the representative of ADCCA. I am here in that capacity. However, as a matter of transparency for the record, I did want to indicate that I am with Bit Trade Australia.

Senator HEFFERNAN: The ABN attaches to which one of those?

Mr Tucker: Bit Trade Australia. I can also provide you with—

Senator HEFFERNAN: You are also the boss of the representative body?

Mr Tucker: That is right.

Senator HEFFERNAN: Could you provide us with the details of that too?

Mr Tucker: Yes, I can.

CHAIR: Please take that on notice. I do not want to get in the way of the discussion.

Mr Sommer: I am a taxation partner with the law firm Clayton Utz.

Ms Boring: I am the president and founder of the Chamber of Digital Commerce based in Washington DC.

Mr Cullen: I am the director of Bitcoin Brisbane. We specialise in writing software in the bitcoin space. I am also doing a bachelor of mathematics at QUT Brisbane.

Senator HEFFERNAN: Whose payroll are you on?

Mr Cullen: I am on Bitcoin Brisbane's payroll.

Senator HEFFERNAN: So you can provide us with Bitcoin Brisbane's—

CHAIR: We will handle all of this on notice. I will get it all for you on notice.

Mr Zhou: I am the economist and head of trading operations at Buttercoin, a Palo Alto based bitcoin start-up. We help users buy and sell bitcoin through our online marketplace.

CHAIR: Where did you say you were based?

Mr Zhou: We are in Palo Alto, California.

Senator HEFFERNAN: Where are you now.

Mr Zhou: I am currently in the US. I am actually on holiday so I cannot see what is going on over there. I am just listening.

Mr Shapiro: I am a director of Promontory Financial Group. Despite my accent, I am based out of San Francisco. We are a regulatory risk management and compliance consultancy. I lead our work on digital currencies as well as emerging payments more generally.

Senator HEFFERNAN: Could we have your tax identify and IRS information from the US?

CHAIR: We will take all this stuff on notice.

Senator HEFFERNAN: I would like them to take it on notice to provide their background. There is a purpose. The largest Inland Revenue taxation case—of tax avoidance—in the US last year involved an Australian company.

CHAIR: This is a little bit of a new approach for us. I want to have, as much as we can, a free-flowing discussion. That means people should take the opportunity to jump in, ask questions, participate and have their say. If the panel or those on the phone have something to add, please jump in. I will get us started with the fundamental, basic question: to what extent has—what Mr Sommer touched on, which seems to be the catalyst issue—the taxation issue and how the ATO has decided to deal with it had an impact on the potential growth of the industry? I want to start with you, Mr Tucker.

Mr Tucker: Certainly. We have seen the closure of some Australian Bitcoin businesses. Living Room of Satoshi was one of the first ones to go down. We have seen other businesses move, or plan to move, offshore and taking potential tax revenues and other revenues away from Australia. The proposed tax guidance that has been taken up here in Australia is not in line with international trends. That is one thing. Secondly, it also sends a message that this is something to question, which perhaps drives it more underground rather than out into the light where, from a tax point of view, we could be perhaps reaping the rewards from this.

CHAIR: Okay. Mr Pesce?

Mr Pesce: The big problem here is that treating it as a commodity effectively makes it very difficult to treat it as a currency. You have to have one or the other. You cannot have half the nations in the world deciding it is going to be a currency and the other half deciding it is going to be a commodity. It just is not going to work. It is going to jam everything up. If you are using a digital currency, whether that is bitcoin or something else, it is probably going to lead to an all-in scenario—all the parties have to treat it as one thing or the other.

CHAIR: I would not mind getting the perspectives of Perianne and others from the US on this. It seems like there is a split across the world in how it is being dealt with. Those economies that have decided to treat it as a currency have created an opportunity for themselves in a business sense, and those that have chosen to treat it as a commodity—especially those that have things like sales tax, like we have here—effectively have driven that business offshore. I would like to speak to our friends over in the US. Have the Americans treated it as a currency or a commodity?

Mr Shapiro: The answer is: somewhat both. It depends which US authority you are looking at. The Commodity Futures Trading Commission have indicated that they believe it is a commodity, the Internal Revenue Service have indicated they believe it is property, and the money-laundering regulator that Perianne was talking

about earlier has indicated that it is money but not currency. The SEC have said that they believe that, under the securities law, it is currency. There is a somewhat confused position here.

Perhaps another way of looking at it that might be helpful is—although this creates some confusion—the position of the taxation authorities here, which is to subject it to capital gains tax as the main tax. From an economic perspective, that seems to me to be a relatively logical outcome. If someone was fortunate enough to buy bitcoin when it was valued at only a few cents and now sells it, the capital gains tax seems to be an appropriate way to treat that for taxation purposes.

It is, as many of the witnesses said earlier, very hard to build a retail business if you have to put a value-added tax on top. It does seem to me, regardless of the treatment under the tax law—which I am not an expert on—to be something that is predictably going to hinder growth. That is why you see that some countries like the UK, which initially took that approach, have found a way to reverse it.

CHAIR: You have already explained the American context and we have had a fair discussion about the Australia context. Are you in a position to explain the British context?

Mr Shapiro: I can, a little. I should probably explain that, before I joined Promontory, I worked at the UK Financial Services Authority for about eight years. While I am not as expert, I have kept up contacts there and am in frequent contact with my London office and some of the companies in the UK space. You are welcome to ask me questions, and I will tell you if you are getting out of my knowledge base.

CHAIR: I would like you to give us a little run-down, anyway. In the Australian context, they made it fairly clear that they made a decision that the tax regime in Australia is not able to deal with this. The view of the Australian Taxation Office is: 'We are not passing judgement, but the framework we have been given does not allow us to treat this as currency, so we are treating it as a commodity.' You are saying that the American context seems to be a little bit more complicated—that it is an agency by agency approach. It seems a bit more muddled.

Senator HEFFERNAN: Which is bullshit.

CHAIR: A technical term!

Mr Shapiro: It is somewhat more muddled, although, to be fair to the agencies, they are all interpreting different laws. I would much rather see agencies try to come to a common-sense approach under the law that applies to them than worry about whether all the agencies have the same definition. I do not think that the US authorities have been doing a bad job on that. In the light of what these agencies look at, a lot of these definitions are quite sensible. In the UK context, it is notable that the UK is somewhat constrained by European Union legislation as well. The European Banking Authority, the umbrella authority that covers payment services and e-money, did publish a paper in July that says that they do not believe that virtual currency is subject to regulation at the moment. It called on the European Commission to make digital currency companies obliged entities for the purposes of the EU anti-money-laundering laws.

What I do see in the UK is an approach where all the relevant authorities—the Treasury, Her Majesty's Revenue and Customs, the prudential regulatory authority, the Bank of England and the Financial Conduct Authority—have taken sensible positions. They are trying to educate themselves and are not trying to take precipitous action. In some cases they may have made a judgement that made little sense in terms of development of the industry, such as the initial decision they subsequently reversed on VAT. I think they have done a very nice job of listening to concerns and seeing what they can do. Of course I make no comment on Australian law. It may be the UK authorities—

Senator HEFFERNAN: To put all that into about two sentences—because it is a sort of bureaucratic presentation—in the UK, are you in no-man's land? What you have said in the last five minutes sounds like a lawyer's feast. Can you put that in two sentences—where you are?

Mr Shapiro: In the UK, there is tax and there are capital gains. The regulators at the moment are not regulating it, although they are watching it closely. Part of that is driven by EU legislation. I do have some clients who think that is a great position. I also have some clients who think that being regulated is an important sign of legitimacy and would much rather be regulated in the EU than not.

Senator HEFFERNAN: I will just get you to pause there.

Mr Shapiro: It is a mixed bag. It depends on your perspective.

Senator HEFFERNAN: Are you saying it is really in no-man's land at the moment?

Mr Tucker: If I may interject—

Mr Shapiro: It is somewhat in no-man's land. Some people think that is really good for the development of the industry. It gives it flexibility. Some people think there needs to be a clearer long-term framework before you see mass adoption.

CHAIR: Mr Tucker, what brings us here today is that there is a key question—and it is a legitimate question. There are naturally going to be concerns—and there are concerns. There are concerns at a taxation level, at the money-laundering level, at a crime and misconduct level, and at a stability of banking level. The real challenge—and I would like Mr Tucker's and Mr Pesce's opinions on this—is the best way of addressing these concerns in the Australian context, and that means having an appropriate framework around it. It sounds, from what you are saying, Mr Shapiro, as if around the world there remains a lack of clarity or a single path forward. The challenge for us is whether we take that opportunity or not. What do you think, Mr Tucker?

Senator HEFFERNAN: Could I just add to that too? If that is the case and it is in no-man's-land—we have heard the US version of it—won't the cluster just go to the most economically convenient headquarters? If it is taxable here, won't they just say, 'We'll just slip it in through wherever'?

Mr Tucker: That is a very good question. I think that is also still being decided, and I guess one of the initiatives of ADCCA is to ensure that the favourable place for that to be is ultimately Australia, because we are the ones who want to reap the economic benefits that are due to come—

Senator HEFFERNAN: With great respect, there was \$3 trillion of tax avoidance last year, mainly in the derivatives and transfer pricing markets. Australia is a victim of it, but we cannot solve it. Australia can have a position on this which could be to Australia's own detriment if it is not a unilateral thing. It has to be an international agreement. You guys should go away and come back when you have global compliance on whether it is a commodity, whether it is finance and how you determine the value. When you have done that, come back and see us.

Mr Pesce: To the best of my knowledge, the New York state regulator is taking the lead on this and is currently drafting something known as the BitLicence, which you can actually review in its interim format now. That is going to be the first piece of legislation—because most of the banks are headquartered in New York—that will set the tone for what global regulation either should be, if they do it correctly, or what it should not be, if it is done poorly. They are taking a lot of advice during this process. It is going to be a few more months before it is done, but that BitLicence is probably going to be the very first flag on that mountain that will help guide the whole—

Senator HEFFERNAN: Will this determine whether it is a currency or a commodity?

Mr Pesce: It will determine how the financial institutions regulated by the state of New York—and they are done on a state-by-state basis in America—will work with digital currencies. That will then set the tone for at least the rest of the United States and then probably internationally.

Senator CANAVAN: Would there be any major business in the world that uses bitcoins or digital currencies?

Mr Tucker: Dell computers, Expedia.com, eBay, PayPal and Facebook are all making moves. IBM has just announced their—

Senator HEFFERNAN: They are fantastic tax avoiders, all of those.

Senator CANAVAN: So are they using bitcoins for the majority of their transactions?

Mr Tucker: No, it is a small proportion.

Senator CANAVAN: They are offering people the ability to pay in bitcoins?

Mr Tucker: This is correct, yes.

Senator CANAVAN: Do you have any idea what percentage of their revenue would be in bitcoins?

Mr Tucker: No, not at this time. We can follow up.

Senator CANAVAN: Presumably it would be very small at this stage, by definition.

Mr Tucker: It would be very small at this stage.

Mr Guzowski: Overstock.com released a statement that they were facilitating enough revenue for it to have contributed to a number of cents per share in earnings. Overstock, which is a large online retailer in the US, has clearly identified how much volume there is, and it is making significant profit to shareholders from revenue generated through bitcoin payments.

Senator HEFFERNAN: Can I just go to something you can touch and feel. In relation to those companies who are well-established multinationals, very successful and very good tax avoiders without breaking the law, don't they need to decide whether they are trading in terms you can touch and feel? You can have in-kind trading,

which is a bag of wheat for a bag of oats or a bag of corn, as a commodity. Are they determined to trade as a currency or a commodity and is it in-kind value? How do they determine the commodity value, other than the rush of the market, which is all about how many spruikers you have in the market? Are Google, or whoever it is, trading a commodity? In other words, I owe you \$10 and here is \$10 worth of wheat.

Mr Tucker: They are accepting bitcoin as a currency.

Senator HEFFERNAN: If they go to a regime where it is accepted as a commodity, how does one link with the other? Has Clayton Utz thought about that?

Mr Zhou: Let's just take a step back and pretend that we are back in 1999, when the internet was first coming out and a lot of the different regulatory bodies were trying to figure out how to classify it. What exactly is the internet? Is it more similar to a telephone, is it more similar to software, or is it more similar to electricity utilities?

The internet itself, when it came about, was so unique in its own right that it became very hard to classify, other than as itself.

Bitcoin has a lot of similar properties. In some ways it is like a commodity; in some ways it is like a currency. In some ways, if you really think about it, physically what it actually is is a configuration of bits on your hard disk. So it really is just data and information at its most basic physical level. Ultimately, on how to classify the internet, I think they decided that it was most similar to telecommunications but maybe still a little bit different. I think the best way to classify bitcoin, if you had to put it into one of the categories that we currently understand, would be to look at how people actually use it. I think the vast majority of people use it a lot more like a currency than as anything else. So, based on how people use it, I would say that bitcoin is a currency. That is my opinion, but obviously here in the States different regulatory bodies have different thoughts on how to classify it.

Senator HEFFERNAN: But wouldn't the revenue body of the United States, the Treasury, have to have made a decision on how to treat the trade that you are saying is going on now for tax purposes?

Senator CANAVAN: We had a discussion on that earlier.

CHAIR: We have covered that.

Senator CANAVAN: There is a US representative still on the line—is that right?

CHAIR: Yes, Ms Boring.

Senator CANAVAN: My understanding—correct me if I am wrong, Ms Boring—was that you said earlier that the IRS has defined digital currencies as property at this stage for tax purposes. So they are treated like the barter situation you mentioned before.

Senator HEFFERNAN: But we have just been told that they are treating it as a currency.

CHAIR: No.

Senator HEFFERNAN: One does not fit with the other.

Senator CANAVAN: No, that is how an individual company would like to treat it for taxation purposes in the United States, as it is here in Australia at this stage.

CHAIR: Senator Heffernan, you have come in quite late in a discussion we have had quite extensive coverage of. We spent about four hours covering this.

Mr Zhou: I think the IRS deems it as more of a commodity, but FINRA and FinCEN, the regulatory bodies responsible for money transmission, favour it more as a currency. They do not call it a currency, but they want to treat it more like a currency than a commodity. I think there is a bit of a conflict of interest here, because the different regulatory bodies—

Senator HEFFERNAN: You can say that again.

Mr Zhou: are having a duel to regulate it and have a little bit more sway in how things play out. I think the different bodies are fighting for control over this nascent space as bitcoin is growing. The IRS obviously wants to make it a commodity because it makes it much more easily taxable. If you treat it like a currency, the IRS would have no hold on taxing bitcoin. So for them it makes a lot of sense to classify it as a commodity, and it makes sense for FINRA and FinCEN to classify it more like a currency.

CHAIR: I want to bring the discussion back to the premise of why we are here. Let's just get some things on the table that we have already covered so that we do not cover them again. Firstly, we had Ms Boring and others give us evidence this morning that there is an inevitability about where we are heading with digital currency. That was the evidence of Mr Pesce and Ms Boring from the US—that there is an inevitability about where we are heading with digital currency because of the nature of the internet and the nature of the movement of money.

Secondly, we have been given a fair bit of evidence that bitcoin is probably the leading, most likely candidate to be the expression of that. The fact that there is \$6 billion worth of trade means that it has probably passed a threshold that others have not yet. If there is going to be a digital currency to emerge, it is quite likely that it is going to be bitcoin. I do not think we need to cover that ground again.

Thirdly, while I do not want to get sidetracked in a debate about international tax avoidance, the question here is: what is the best way for us in the Australian context to set laws and regulations to allow us to maximise the potential opportunities that bitcoin presents as a future industry and a future business and, at the same time, not expose ourselves in a regulatory sense to potential downfalls from a government level or place controls that stifle the growth of the industry here?

I would like to get back to first principles and bring the discussion back to that. Where is the potential? Mr Guzowski, I cut you off earlier when you were making your presentation. Talk about the innovation and the opportunities in the Australian context, if there is a framework here that allows the businesses to grow.

Senator HEFFERNAN: Add to that: how can you do that if you have not got global harmonisation?

CHAIR: But we are not going to solve the harmonisation issue.

Senator HEFFERNAN: If you do not, you will end up like Peter Costello having to explain why the Future Fund has 14 companies in tax havens.

CHAIR: I believe the world will be following our Senate inquiry and whatever we decide will become the global standard!

Senator HEFFERNAN: And I believe 99½ per cent of the people would not understand and could not give a derivative swap tutorial.

Mr Guzowski: Bitcoin is a software protocol and open source and therefore available to anybody who is inclined and technically knowledgeable to write code and facilitate applications utilising the Bitcoin protocol and allowing the transfer of digital property across the internet from one user to another. That has a huge host of applications, a lot of which we have not identified yet just as the internet 20 years ago was an unknown quantity. Twenty years ago Telstra, the government owned telco, started as a business facilitating Australian consumers to start purchasing modems and connecting to this World Wide Web. Do not quote me on the year that happened, because I was only born in 1984; however, I do remember as a teenager being able to connect through a dial-up modem to the internet and access this World Wide Web of information.

All of a sudden we have this technology which is very similar in susceptibility to the network effect, the network effect being the more users there are of this technology, the more useful it becomes to other users. The more merchants accept bitcoin, the more consumers are likely to use it. The more consumers use it, the more merchants will want to accept it. The more miners facilitating the reconciliation process, the more secure it becomes. The fourth layer of this four sided network effect is the application developers who are creating applications—programs—which make this technology more useful. This is a financial technology and therefore a little bit more sensitive than others. That is why we are having this discussion today before the real take-off of this technology: because it is potentially sensitive and we want to get the rules right before it gets out of our control and our rules will be a slap.

Senator HEFFERNAN: Correct—and we want to learn from the earlier technology. You said online buying. There was no global harmonisation. Google et cetera are getting away with no tax. Our retailers have been smashed, and we do not have GST on online sales. The build-up in the market is almost vertical. We have to get this harmonised before we start to play the game.

Mr Guzowski: That is right; but, on the flip-side of that coin, Australian retailers are now very aggressively attacking offshore markets. We have great online stores, whether it is Kogan—

Senator HEFFERNAN: To pause there: my point was that, if you want to have public schools and public hospitals, it has nothing to do with the profits of the retailer. Sydney Airport had its headquarters in a tax haven till 14 months ago. It is the common good that is important as much as the commercial good. We want to have public schools and public hospitals—even though Senator David Leyonhjelm does not, I do.

CHAIR: I think we are going back to what I was hoping to avoid, which was entering a discussion. Now we are discussing schools, hospitals and bitcoin.

Senator HEFFERNAN: It is pertinent.

Senator CANAVAN: I want to ask Mr Sommer's views on these issues—sorry to return to them. I do share Senator Heffernan's views on the issues involved in international tax avoidance. I suppose that, presumably, all of that has happened in a non-bitcoin world. Is that your view?

Mr Sommer: Yes, absolutely. If you look at the European Union's approach to this issue, you see they have the one framework for the operation of their VATs and yet there are different answers within the European Union as to the appropriate taxation of bitcoin and its characterisation. So I think that, in terms of harmonisation across the world, it is too difficult a process to adopt as to whether this should be taxed as a commodity or as a currency. The important thing for Australia is to ensure that the design of our tax system, both from an income tax and a GST perspective, gives us an appropriate share of the tax base but is also appropriate for what it is those things are supposed to be taxing. Income tax can tax income derived—the same principles as ever before, unless we would want to change those bases of source and residency from an income tax perspective. From a GST perspective, it is a far better tax for ensuring that Australia gets its share of the tax base, based on consumption in Australia irrespective of how you pay for it. That is the way that the tax system operates outside of bitcoin and with bitcoin. I am concerned particularly in relation to where we are with bitcoin at the moment. By taxing it as a commodity, we are not taxing it in the way that it operates and it is inconsistent with the functional aspects of bitcoin effectively as a means of exchange and a store of value.

Senator CANAVAN: To the extent that bitcoin or digital currencies could pose a threat to other financial institutions or their business models, the current tax laws protect banks and other financial institutions—would that be the right way to put it? For example, Western Union makes a substantial amount of money on international transfers, and if you have this double-taxation environment here in Australia on bitcoins, that protects Western Union's business model—is that right?

Mr Sommer: Yes. It protects those industry players that are dealing in existing fair currencies as opposed to virtual currencies or digital currencies.

Senator CANAVAN: Where are you at with the self-regulatory code that ADCCA wanted to put in place? I notice in your submission to the FSI inquiry you had some broad principles—when do you think the code will be complete? Is it in draft form at the moment?

Mr Tucker: There are some very good questions being asked here today and I think to know where we are going, we have to know where we have come from. We have taken a look back at what has come before in other industries that have faced similar circumstances. As it was told to me and from what I understand, a gentleman walked into the offices of Gilbert and Tobin some 20 to 25 years ago with an idea to send money electronically between banks. It did not get too far, it was called EFTPOS. It did not get too far early on, but they formed an association called the Australian Payments Clearing Association. The association advocated, essentially, a self-regulatory model with healthy government oversight to mock up a framework that would be appropriate to this new innovative technology. We have taken a look at their work—we are very big fans. We think we have similar DNA, considering where we are placed today at these early stages.

What we have developed essentially is a membership structure with a stringent set of best practices and a code of ethics and conduct. There are three membership types: the first being industry member, the second being associate member and the third being partner member. Industry member is the key one here—it is a digital currency-centric membership type. The second—associate member—is aimed at merchants who are accepting bitcoin and digital currencies. The third—partner members—are the major international participants and enterprise level industry members who may wish to join.

The key here is industry member. They are also eligible for something called an ADCCA certification, which is benchmarked off an Australian Financial Services Licence. Firstly, for the AFSL, the ADCCA certification starts with the requirement for all directors to undergo background checks. That would include disqualified directorship checks, bankruptcy checks, national police checks et cetera. Secondly, the ADCCA certification requirement is the need to implement a robust anti-money-laundering program by one of the approved providers. Thirdly, they then need to follow-up with an audit on this AML program and that would have to be undertaken every two years. Fourthly, they would have to acquire professional indemnity insurance, something of which we are speaking to some of the major international insurance providers about and are quite eager to see this happen. Fifthly, we are speaking with four services who are inclined to develop a financial services ombudsman structure or service that accommodates these emerging DC and bitcoin businesses. Lastly, and this is key, is the need for registered wallets. The great question around bitcoin and blockchain has not been on its ability to trace transactions from A to Z. It is, quite frankly, an auditor's dream on a transparent public ledger. It is about who is actually use these bitcoins. So our proposal here is that industry members who become ADCCA certified would be willing to voluntarily raise their hand and point out and say, 'This is my section of the blockchain. These are my wallets. These are my transactions,' when appropriate. That should also be made available to law enforcement, when appropriate. So this is the very—

Senator CANAVAN: Can I stop you there, just quickly? When you say their wallets, does that extend to people, or is that just the businesses?

Mr Tucker: The businesses.

Senator CANAVAN: Say I have an account with an industry member of ADCCA. Would they be recording my details under this code of conduct and would they potentially share that with law enforcement? Is that the idea?

Mr Tucker: The ADCCA certification is intended for businesses to lay claim. As far as consumers go, in line with industry best practice in the established financial services sector, our members are also required to ask for 100 points of ID. KYC—know your customer—you need to know who it is. So it would be consumers as well. This would be a requirement of the industry members.

Senator CANAVAN: So if you wanted to be a member of your organisation, you would have to comply with 'know your customer'.

Mr Tucker: This is absolutely correct, and you would then have to implement an ongoing due diligence program. There needs to be a robust AML program in place. Many of our members already do this and are in compliance with the AML regime up to as much as 90 or 95 per cent. It is that 5 per cent difference where we are literally unable to do so. For example, we are not able to register with the Document Verification Service. We are not required to report to AUSTRAC. Fortunately, we have been told that we can voluntarily supply information to AUSTRAC, in line with what would be required by the established sector. For example, there are three main reports that are given by financial institutions, day in, day out—IFTs, international funds transfers; TTRs, that is, transactions above \$10,000; and SMRs, suspicious matter reports—which our bitcoin companies fill out an equivalent to and keep on file or report to AUSTRAC voluntarily.

Senator CANAVAN: Does your company or some of the members do that every day, basically? Or is it that you monitor it every day, but you might not put a report in every day?

Mr Tucker: The reports are submitted as would be required.

Senator CANAVAN: So if you had a transaction over \$10,000, you would report that to AUSTRAC at the moment.

Mr Tucker: Those are required to be submitted within three days. Each company has its own processes. So you would have to speak with each individual company as to how that works. At the meetings we have had with regulators and departments they have been quite surprised that we are coming to them saying, essentially, that we do want to be regulated. It is not that we want to be regulated—that comes at a great cost. It is a matter of people wanting to comply with best practice and do the right thing—to walk on the sunny side of the street. That is also what we are asking for on the tax issue. That is the other major issue here. We are asking to be treated fairly and that Australian business be given the opportunity to thrive and to take hold and be an innovator on this front. There is a desperate need in Australia, moving forward, regionally—especially as this community globalises more, and so does the economy—that we position ourselves as an innovator and be on the front foot here.

Senator HEFFERNAN: Would you say that AUSTRAC has not caught up with the technology?

Mr Tucker: This is right. For example, we hosted a forum in Canberra on 9 July to raise awareness for government departments and regulators. We had 21 representatives from 11 departments, from ACCC to PMO, RBA and Treasury. A lot of people came to the table to learn about bitcoin. We started the conversation by saying that what we would like to do is agree to a common glossary of terms. You hear 'virtual currency', 'digital currency', 'cryptocurrency' et cetera. So we agreed to digital currency. Was it 'Bitcoin' or 'bitcoin'? And the reason we did this was to lay a foundation early on to avoid a situation where, in a set of legislation, the terminology for ASIC could mean something completely different to the Tax Office. In order to globalise this in the way in which we are discussing, it needs to be done. I think we first have to start at home here and get it right and get the terms right—you have got to wash your face before you put on your lipstick—and that is where we are at.

Senator WHISH-WILSON: I am interested to hear from any members of the panel, including those who are here via teleconference, about where the momentum for the advocacy of bitcoin is coming from. I understand that Coinbase and BitPay are venture capital for-profit organisations, but where does the advocacy come from to establish the legitimacy of bitcoin? Is it decentralised, like the whole concept? Or are you organised? How are you going about promoting the use of bitcoin?

Mr Tucker: Perianne Boring is essentially our counterpart, with the CDC in the US. We have seen counterpart associations emerge all over the world. In Japan they have the Japanese Authority on Digital Assets. There is the UK Digital Currency Association. South Africa has an association. There is something being formed

in Ireland, to the best of my knowledge. Singapore has something called ACCESS. I do not know what the acronym actually stands for. But there are counterpart associations emerging all around the world. We are communicating with one another, and that is the point of hosting this summit in San Francisco mid next year—to bring these participants to the table, as well as representatives from industry, as well as informed and educated and experienced participation from regulatory backgrounds, professional associations and government or ex-government where appropriate as well, to have a conversation, to talk about what an international framework could and should look like and what is in everybody's best interests.

Mr Pesce: There are two sides to this. There is the top-down side, which I think Ronald was representing, but there is also the bottom-up aspect, in that the basic innovations in bitcoin and block chain technology have solved so many problems—

Senator WHISH-WILSON: But they are demand driven, essentially?

Mr Pesce: Well, you are seeing a lot of very bright engineers and entrepreneurs get brainwaves and build companies around the brainwaves they are having, so it is really working from both directions.

Mr Shapiro: And certainly it was interesting in the United States, with the New York Bit License. The Department of Financial Services heard from a lot of people in New York who are using bitcoin, not just from the big companies and the trade associations. I think that grassroots point is important. But I think there is an important role for the growing number of venture-backed companies here. There are big risks here, as people have been talking about, about anti-money-laundering sanctions and consumer wallet security. And a lot of that venture capital funding that you heard about earlier has come recently. I think 75 per cent of it has been invested in the last nine months, and that is letting a lot of the companies that have that investment make much greater strides, employ larger staffs—in compliance, in engineering—to solve wallet security issues. And there is a really important role as well for those companies in showing that they can walk the talk as well as talk it, and solve the issues the industry needs to overcome.

Senator WHISH-WILSON: Just with my own community in Launceston, Tasmania, there is a big push to get bitcoin established there, including maybe an exchange, and two machines, I understand—which would be one more than in New York, if that is correct. And I understand that there is a tech community down there, and there is a lot of innovation, and they are looking to do different things. But the people I have spoken to already obviously own bitcoin. They have all invested in bitcoin. I am just interested in whether you are formalising an advocacy role for bitcoin and in who is paying for that, because clearly you have a huge task ahead of you to get this as a well-established traded currency that is a medium of exchange as well as a store of value. Is it just sort of coming from innovation? Or are you getting more organised in terms of people who get in at a base level? Will they benefit from it long-term as an investment as well if they can help drive it?

Senator HEFFERNAN: What he is really asking you, politely, is: who are the venture capitalists behind this—their details? I am a sheep farmer. I look after agricultural things here, and I always declare an interest. Do you have a declarable financial interest?

Mr Tucker: What I can say is that here in Australia we have identified five key stakeholders in Australia. The first level is the public peer-to-peer network, which drives bitcoin and the adoption of this phenomenon that we have seen move from an awareness by two out of 10 people 18 months ago to now nine or 9½ per cent who are at least aware of bitcoin. That is remarkable in itself. So that is No. 5, the base; No. 4 is the small and medium enterprises—the small business owners who are identifying the opportunity that exists within this and have established businesses. No. 3, in the middle of the five, is the network, and the nervous system, if you will. It is the professionals and the professional associations—the lawyers, the accountants, the tax agents et cetera. The professionals and their associations also include folks like the AIST and APO and the retailers' association and a number of others, many of whom are doing regular weekly presentations to educate them on bitcoin. We are being invited in across the country to show them what the risks and opportunities are here. This is also the army of professionals that service the SMEs below and reach up into No. 4, enterprise—the Qantas, the Telstras, the Westfields et cetera.

Senator WHISH-WILSON: Taking a small town like mine, for example, who goes out and sells the concept to SMEs? Is it a franchise-based model? Do you set someone up and say: 'You'll be the champion of bitcoin in this area. Go out and tell the world'? How does it work? I am not asking whether it is a pyramid scheme, but I am just interested in how you get these things started.

Mr Tucker: This is the public, this is the base. It is the place from which this thing was born, and the opportunity that is recognised. So, as we said, there are a number of advocacy groups, champions and early adopters who have recognised this opportunity and are bringing it forward. The Bitcoin Association of Australia,

for example, is a great organisation, and they represent the grassroots enthusiasts and do a lot of great work to promote, standardise and advocate bitcoin and bring awareness around it. And I believe that there are a few key representatives working out of Launceston who are driving this forward and bringing it to their local merchants in local towns, and this is—

Senator WHISH-WILSON: And by the way, my wife's business is thinking about signing on.

Mr Tucker: Fantastic. So, your wife's business is in Launceston, a town that is ready to adopt bitcoin as a mainstream means of payment and payment processing, right through to the tops of eBay and PayPal and Google and the like. So between both, and everyone who falls in between, this thing is going to touch people globally, around the world, and it is going to do it very, very quickly.

Senator HEFFERNAN: So, the answer to the question—

Mr Tucker: So, who are the interests that are—

Senator HEFFERNAN: Who are the venture capitalists—

Senator CANAVAN: All of these people I think—

Senator HEFFERNAN: He is working his way up—

Senator CANAVAN: Hang on: all the witnesses outlined their business interests and where they come from before they gave evidence this morning, just as any witness would to a Senate committee on any other topic. I know you were not here for that, Senator Heffernan, but it is on the *Hansard* record, and—

CHAIR: And I do not think there is anything inappropriate or surprising—that what you have here is those within the industry coming to government and saying, 'We want to actually be able to grow our industry in Australia, and can we find a way where we can assist government in getting the balance right between meeting the regulatory challenges and all the questions that we have and at the same time find a way that does not put an unnecessary burden on the industry?' It is about getting that balance right. I think Ms Boring outlined it very eloquently in her previous evidence. I think it is a fair summary of what you were saying—that you have to get the balance right between making sure you put a regulatory framework in place that assists business and assists government without stifling it.

Senator HEFFERNAN: I apologise that I was not here. You are traders in bitcoin, I take it.

Mr Tucker: Correct—well, two of us are.

Ms Boring: Perhaps I could make a statement on this as well. I personally do not have any investment in this space. I own bitcoin, but I am not an investor, and I do not own equity in any of the companies operating in this space or any of the companies who are a member of our organisation. And I personally am involved in this because I believe in the potential benefits this technology can bring to society. And when you ask, 'Who is invested in this, and who is going to benefit from this?' the biggest opportunity for block chain technology is for small businesses and consumers and the un- and under-banked population. Here in the United States over 50 per cent of our population does not have a bank account or is under-banked. There is a huge opportunity to bring financial services around the world, and we are an extremely small industry today. The market capitalisation today is between \$4 billion and \$5 billion—tiny; we are very, very tiny. That is why it is important that we have this conversation now. I absolutely applaud what the Senate of Australia is doing by having conversations about such a small industry. The potential benefit is very large. Few people are involved, but it potentially could enable billions of populations around the world to have access to financial services. We believe that it can increase the standard of living.

Senator WHISH-WILSON: I do not want anyone to misconstrue my questions, because I am not in any way putting a negative slant on it. I am looking for where the drivers of the success of bitcoin will come from. I get that it is cool. I get that it has got some advantages that may need to be pitched the right way et cetera. I just want to see where the momentum for this to succeed is going to come from. Unfortunately, I did not get to hear the answer to my question—I had to go off to a division in the Senate. I do have a concern about competing currencies because the barriers to entry are very low. The first-mover advantage is the only thing I heard which makes sense. In light of my question on the drivers, how quickly can you get there with your first-mover advantage before another hundred currencies like this get established?

Mr Guzowski: I had an interesting encounter a couple of days ago when I met with the chairman of the National Online Retailers Association. He has gone from being a sceptic earlier this year to being a believer that this is the new technological wave. His son, who is 16 years old, is mining bitcoin and has been for a year. I think that is a huge insight into who is driving this technology. We have children, teenagers, around the world who,

because they have a curious thirst for knowledge and for innovative products, are now starting to pioneer and champion this technology.

We have had \$295 million of venture capital investment in bitcoin related businesses this year. In Australia we have had less than \$1 million invested in this space this year. In the US there is a thriving venture capital industry. There is a burgeoning venture capital industry in Australia as well. However, most of the investment has been private investment because there is not a clear regulatory framework here. With Australia being so institutionalised, particularly the financial space, everybody is very hands-off until there is a clear framework for the technology and for the industry, because investors are scared about getting their hands burnt.

CHAIR: Are you saying: the lack of framework clarity is stifling the opportunity for people to invest because they are scared to invest?

Mr Guzowski: I am a strong believer in that, and I have heard that from many investors. The lack of regulatory framework or regulatory oversight is one of the key drivers for lack of investment in this space. Like any business, this industry needs resources to finance very smart, expensive people in Australia to stay and innovate here, where Australia can reap the benefits from it.

Senator HEFFERNAN: You need to work out whether it is a bag of wheat or a coin.

CHAIR: That is one of the key issues that we have to consider.

Senator HEFFERNAN: You did not answer my original question: who are your venture capitalists?

Mr Tucker: We are self-funded. I can speak as to Bit Trade and I can speak as to ADCCA.

Senator HEFFERNAN: Can you give us the details of the people, not just: 'We are'. I want to know who is putting the money up?

Mr Tucker: Sure.

CHAIR: I think we are going off on a tangent.

Senator HEFFERNAN: No—if you want to know what is going on, mate. You are as independent as the person who pays you. When Glencore sold out to ADM in Brazil, the Brazilian government, all of a sudden, said: 'Where did the tax go?' The next thing we know, the US government—your inland revenue—disappeared in the derivative market: \$700 million, just like that, in one transaction. When Mr Pinner—he was here and I chaired the inquiry—got back to the United States, ADM was hit with a \$700 million tax avoidance bill. You are right: it needs to be harmonised; people need to understand it. To do that, you have to answer all the questions.

Mr Tucker: Sure. I would be happy to answer that question.

CHAIR: Could you take that question on notice, Mr Tucker?

Mr Tucker: Sure.

Senator CANAVAN: What happens if people are not in the code that you are designing? What do you want government to do? What are you asking government to do in relation to the code?

Mr Tucker: We are looking for support with the proposed model that we put forward. It is based on a proven blueprint that has already been successful.

Senator CANAVAN: In that—

Mr Tucker: Regulators departments.

Senator CANAVAN: It is a voluntary code?

Mr Tucker: Yes, it is a voluntary code in these early days. I think in time there will need to be further legislation as we have seen previously with the likes of APCA. But we start now with a few small, nimble, agile steps, have conversations like this and can be positioning ourselves to reap benefits in the billions of dollars for decades to come—or we could miss out.

Senator HEFFERNAN: Can I ask a question of our US friends? Do you think there is a risk in this? There is no harmonisation around the world. We are saying it is a commodity. You are saying it is currency or whatever it is. We are at risk because you are technically insolvent! The definition of 'sovereignty'—or perhaps, if we do not get it right, would it be the demolition of sovereignty?

Mr Shapiro: I do not think this is a real threat to sovereignty. Firstly, it is way too small at the moment.

Senator HEFFERNAN: But from little things big things grow.

Mr Shapiro: People want their money. It is simple. People understand their Australian dollars, their US dollars and their British pound, and I think a lot of the future of this is actually going to be allowing consumers to hold balances in the currencies they understand and use the back end of this for payments just as merchants today

can use services. Most of the merchants in the US that accept bitcoin are not actually accepting bitcoin; they are using a third-party service like BitPay or Coinbase.

Senator HEFFERNAN: How do you capture it? Last year the United States Treasury missed on between \$650 billion and \$800 billion through tax avoidance. How do you capture this in the revenue base if we it is not globally harmonised?

Mr Shapiro: I think this needs to be worked out over time to some extent. You mentioned earlier the problems of collecting sales tax online. What we are seeing in the US is those problems are now going to be solved. The states have won over Amazon, and Amazon and most other major retail merchants are collecting sales tax on purchases. You know where the merchants are and you know who is accepting bitcoin; and, as the market grows, I think this will prove to be a very solvable problem.

CHAIR: I think it is fair to say, too, the transparency available in the block chain is actually unprecedented. It allows a viewing of transactions in an auditable way which is unforeseen in the existing banking sector. The way the block chain works—I am not remotely an expert on this, and there are others who are far better experts on this—

Senator HEFFERNAN: So the \$125 trillion of shadow banking last year, if these people would like to make a comment on the influence—

CHAIR: Here is the question, Mr Sommer. If, in a perfect world which is not going to exist, all foreign exchange types of transactions were done using bitcoin as opposed to other currencies and all transactions appeared on the block chain as a result of that, if I am a regulator or trying to make identification of the movement of money for taxation and other purposes, is that something I would welcome or oppose?

Mr Sommer: As a regulator, the amount of information that is available to you through the documentation of transactions on the block chain is unprecedented. It is not merely a passive record, but the way in which transactions interface with the block chain can have in them encoded tax characteristics so that the block chain can distinguish between a supply that is a taxable supply for GST purposes and a GST-free supply for GST purposes. That technology and that utilisation of the block chain technology is something we are just on the cusp of at the moment.

CHAIR: So is it fair to say—I want to get your words—that, like any technology such as this, which happens to be in the space of currency, if we get the regulation and framework right, yes, there potentially is a risk if unregulated that this becomes an avenue and a vehicle for nefarious activity; but, if we actually get it right, it has the potential to do the exact opposite and be a potential tool in an arsenal for regulators out there who want to make sure there are more transparent international transactions?

Mr Sommer: Yes, correct.

Senator HEFFERNAN: That is fair enough.

CHAIR: On that note!

Senator HEFFERNAN: Not on that note. Obviously we have not thought through the definition of 'sovereignty' at the moment. This is without a doubt a challenge to sovereignty if we do not get it right.

CHAIR: We are all paired till 12:30, and the Senate bells are now ringing, which means we have to go vote. Thank you all for appearing. I have no idea what time it is in the US, but I want to acknowledge the special effort from the US witnesses to participate.

Senator HEFFERNAN: Seventeen hours the day before.

CHAIR: So I say to our American friends: we are hopeful to get ahead of you in many ways, and I note you are already seventeen hours behind us! Thank you.

Committee adjourned at 12:35