A Discussion on the Role of Bitcoin in Australia

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Preface

As a consultant for a Melbourne-based Bitcoin start-up, I am honoured for the opportunity to share a little from our experience, especially with regard to the August ATO draft ruling on the application of GST to Bitcoin transactions. Many of the ideas presented here are founded on high-level strategic analyses performed for my client, but I believe important points help clarify what Bitcoin is (or isn't) and where economic value exists in the ecosystem. This article attempts to initiate conversations about the role of cryptocurrencies in Australia and how this technology may be used to positively impact the world at large. To this end, I shall briefly address the terms of reference put forward by the Committee where possible, and continue refining my thoughts in areas that are deficient.

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Introduction

In 2011, worldwide payment services generated USD 200 billion in processing fees shared between banks, processors and credit card companies. Bitcoin and other cryptocurrencies based on blockchain technology have the potential to profoundly impact the payments business principally by challenging the cost of cross-border transactions. These technologies could directly affect 10 percent of the industry's revenue, and may go on to disrupt half of the remainder over the medium-term future. Moreover, cryptocurrencies hold the key to accessing the world's underbanked population comprising a market in excess of two billion people.

A global perspective

By now, it should be clear that cryptocurrencies in some form may fundamentally change the world. In October, IMF and the World Bank explored applications of blockchain technology in their annual meeting. Likewise, many countries have commenced enquiries into integrating cryptocurrencies with their financial systems. This trend will prove increasingly pertinent for developing countries with a reliance on international remittances. However, developed countries can also leverage blockchain technology to bring better efficiency to the financial services sector, saving consumers billions of dollars annually.

Australian regulators should be cognisant of two truths in deciding the extent of the country's involvement with Bitcoin:

1) Blockchain technology, once released, is difficult to contain. Like other peer-to-peer network protocols, such as BitTorrent used extensively in file sharing, participation is easy and there is no central authority to shut down.

2) Cryptocurrencies largely operate outside the bounds of geography. Unduly burdening Australian participants pushes users and profits to platforms domiciled overseas. This hurts the country by stifling innovation, limiting opportunities to create economic value, and incurring far-reaching opportunity costs. If Bitcoin is suppressed here, others will gladly assume the role.

The role of cryptocurrencies in Australia

In Australia, credit, charge and debit card users paid $3.4 billion worth of processing fees in 2013. However, given that EFTPOS transactions cost 16 cents on average, there is little room for cryptocurrencies to improve on domestic point-of-sale purchases that account for around 40 percent of all transactions by value.

Nonetheless, Bitcoin has an even more crucial role in supporting the country's export-driven economy by reducing cross-border financial transaction fees, and by increasing the addressable market for Australian goods. With this in mind, the recommendations contained herein are targeted at encouraging participation—and, perhaps, the development

of innovation—in a revolution that will have important ramifications to the financial services industry and beyond. Specifically, the stated objectives of this discussion are:

- to open the door for Australian start-ups to pioneer a role in the global financial system,
- to reduce cross-border payment processing fees for consumers and export merchants, and
- to substantially increase the global market for Australian goods

Bitcoin as a business

The cryptocurrency industry comprises three business segments. Although, not every segment is suitable for Australia due to differences in local cost structures, effort from regulators is necessary to advance the goal of allowing operators to compete on an equal footing with global peers where Australia does participate. Australian start-ups must be allowed to fully leverage the country's reputation for strong corporate governance and first-world infrastructure.

Bitcoin 'mining,' also known as transaction verification, is an exceedingly profitable venture offering 70 percent EBITDA margin under the right conditions. Unfortunately, the high cost of electricity in Australia, which is about twice the USA, Canada and China tariffs, makes it uncompetitive to operate domestically. As such, Australian entrepreneurs should focus on undertakings higher up in the value chain, where exchanges and value-added services offer some chance of success.

1) Bitcoin mining is the fundamental process underlying the Bitcoin protocol. It is a method that authenticates transactions to establish trust between all participants. As a reward for performing this task, miners were rewarded 1.3 million newly-created bitcoins last year worth $450 million at the current price. However, mining is a commoditised business with decreasing margins—as a function of the Bitcoin protocol and market forces—that relies primarily on cheap electricity, computing speed and low power consumption. Australia is not competitive in any of these three areas, making this business unviable if hosted onshore.

2) Bitcoin exchanges allow users to acquire and dispose of bitcoins by converting them to and from other currencies. Since the emergent Bitcoin economy is still limited in size, traditional currency proves indispensible at times when bitcoins are not accepted. Furthermore, if Bitcoin is used solely as a mechanism for transfer, as opposed to a store of value, exchanges perform a vital role in providing the liquidity required to enable speedy and efficient end-to-end delivery of funds.

   As the market matures over time, trading costs are expected to decrease when the bid-ask spread narrows from increased market participation. However, other elements that contribute to trading frictions, such as GST, complicated record keeping requirements, and onerous operating limitations should also be minimised. This gives start-ups some degree of freedom to remain agile while the industry is still developing, and helps to ensure low total transaction costs—the foremost metric of any currency exchange.

Additionally, exchange operators require access to favourable wholesale foreign exchange rates, comparable to rates available in major financial centres such as New York, Hong Kong and London in order to support more currencies and serve a larger market. Electronic exchange platforms provide low profit margins that must be made back through high transaction volumes. In order to compete with exchanges all over the world, Australian operators require access to the same banking service rates.

3) Value-added services can describe any number of offerings that facilitate consumer participation in the Bitcoin ecosystem. These may include Bitcoin wallets, debit cards, credit facilities, etc. The possibilities are constrained only by market demands. To achieve parity in this area, equitable treatment under the law is a prerequisite. At the end of the day, Australian Bitcoin service providers compete globally with other providers, therefore operating in Australia must not be a disadvantage in the early stages of development.

Using Bitcoin to grow exports

There is a case to be made for treating Bitcoin as a strategically important technology in Australia. With the correct regulatory support, Australian merchants that adopt Bitcoin will have access to lower payment processing fees for international orders. This is especially applicable to online retailers who wish to develop a larger international export market, where total credit card processing costs are currently estimated to be around 5 percent depending on currency. Bitcoin has the potential to materially reduce this cost, making Australian products more price competitive.

Furthermore, there are 2 billion underbanked people in the world who have limited or no access to the payment systems that would allow them to participate in online commerce. Of these, more than 100 million affluent consumers don't have regular access to the online global payment networks. Allowing Australian merchants to accept Bitcoin opens the door to a market five times the size of Australia's own. If provided sufficient consumer protections and cost-effective, expedited logistics services, international consumers will have the means to acquire Australian goods, possibly boosting exports and creating markets for novel, new products.

In the long run, this gain will be eroded away as other countries also adopt Bitcoin, and as competitors—credit card companies—reduce rates in response. For this reason, it is imperative for Australia to exploit the first-mover advantage to develop an innovative blockchain technology sector, comprising many thousands of high-value, knowledge-based jobs. This will give Australia a chance to play a leading role in this dynamic new industry with universal implications. Expertise, products and services developed here may be deployed throughout the world supporting a sustainable competitive advantage into the future.

Having a thriving domestic customer base of online merchants is an ideal testing ground for the Bitcoin industry because it is essential for rapid innovation. It makes mistakes cheaper, learning faster, and helps to promote exploration. For these reasons, the importance of

regulatory support to foster the commercial adoption of Bitcoin cannot be underestimated if Australia is to have a role in what some have described as a revolution.

Bitcoin and the developing world

World Bank estimates put the global funds remittance value at USD 500 billion in 2013. The remittance market is a substantial and important flow of money sent typically by migrant workers back to their home countries, usually in the developing world, to support education, build homes and provide day-to-day essentials for millions of families. This flow is three times greater than the value of worldwide foreign aid contributions in the same year.

Remittance services are provided by commercial banks, money transfer operators and post offices, who between them charge an average rate of around 8 percent in fees and commissions for sending the equivalent of USD 200. The global weighted average rate, however, is lower at 5.7 percent, indicating greater efficiency along popular remittance corridors. Although the most economical G20 countries have rates as low as 4 percent, costs vary greatly depending on factors such as geographic region, delivery method and amount. South Africa is the most expensive G20 country with an average rate of 20 percent. Sub-Saharan Africa is the costliest region averaging around 12 percent—these are the people that stand to benefit the most from cost improvements promised by the deployment of cryptocurrencies.

Price transparency is often quoted as an important cause of high remittance costs. In addition to this, it should be noted that such transactions are fraught with structural failings that disadvantage users, especially when involving low value transfers. These factors include:

1) Low value transfers, typically USD 200, are relatively inefficient if a substantial fixed fee is part of the cost structure. Moreover, such users individually lack the bargaining power to negotiate for discounts.

2) The lack of competition to service providers, often perpetuated by high barriers to entry and exclusivity arrangements restricts the choices users have in repatriating funds. This effect is particularly pronounced if money is transferred between isolated, rural locations, where the consumer is presented with little choice at all.

Bitcoin can alleviate the burden of transaction costs by bringing the advantage of market forces to play. As a technology, it provides the medium to securely transfer funds internationally. More importantly, it opens the sending and delivery end points up for competition from literally any new entrant with a smart phone, an Internet connection and, optionally, a bank account.

In this scheme, the installation of a simple software application and access to basic banking services would allow anyone to provide global remittance services, increasing competition and bringing down transaction costs—every one percent reduction in fees is the equivalent

of USD 5 billion in savings per year. Additional benefits of this system include better local accountability because fees are negotiated at a personal level; improved economic activity due to new employment opportunities for local entrepreneurs, and commissions are more likely to be retained in their respective local economies. In fact, with some technical knowledge, remittance users may be able to bypass traditional service tolls altogether, notwithstanding the normal cost of Bitcoin transactions.

An analysis of draft ruling GSTR 2014/D3

The recent ATO draft ruling has encumbered local industry with insurmountable transaction frictions that could extinguish Bitcoin innovation in Australia. Under the current scheme:

1) **Consumer pays GST to acquire bitcoins:** Consumer pays $110* cash for $100 worth of bitcoins. ATO accrues $10 in GST from the bitcoin supplier.

2) **Consumer pays GST to spend the same bitcoins:** When the $100 worth of bitcoin is spent on goods or services, the consumer only receives $90.91 worth of value because the ATO accrues another $9.09 in GST from the merchant.

3) **Merchant pays GST to convert bitcoins back to dollars:** When the merchant sells the bitcoin, he is only left with $82.64* cash to pay suppliers, employees and tax. The ATO receives another $8.26 in GST from the merchant services provider. Although merchants registered for GST may claim input tax credits, the additional complexity negatively impacts operating cash flow by 9 percent and incurs a small financing cost.

* Calculation does not include fees charged by bitcoin supplier or merchant services provider

Not only does the application of GST on exchange and payment services mitigate the primary benefits of cryptocurrencies—low cost—it punishes consumers and merchants by making Bitcoin the costliest transaction medium in the country on what is effectively a currency-like transaction.

The root cause of this issue is that the ATO attempted to classify Bitcoin under one definition within the existing legal framework. Clearly, this is not an easy task because Bitcoin is altogether a currency, a store of value and a process. An alternative approach could be to apply GST on the basis of how Bitcoin is used. That means, identifying key stakeholders in the system and applying the appropriate tax treatment for each transaction based on:

1) who the user is, and
2) the action that transpired

The table below serves to illustrate this idea and is in no way exhaustive or authoritative on tax matters. It is meant only to demonstrate one alternative to the dilemma of defining Bitcoin in a manner that is equitable to users and society at large from a tax perspective.

Use Case	Tax Treatment
Consumer	
Buys bitcoin	No GST
Sells bitcoin for profit or loss	Apply individual income tax rules
Spends bitcoin on goods or services	Apply GST
Consumer gifts bitcoin to third party	Apply individual income tax rules
Trader	
Buys bitcoin	Treat as trading securities under mark-to-market rules
Sells bitcoin	Realised profits and losses are reflected in earnings and are taxed accordingly
Investor	
Buys bitcoin	Treat as available-for-sale securities under mark-to-market rules
Sells bitcoin	Realised profits and losses are reflected in earnings and are taxed accordingly
Merchant	
Merchant acquires bitcoin for sale of goods or services	Merchant collects GST on domestic sales. Retained bitcoins are treated as trading securities under mark-to-market rules if merchant bears price volatility risk
Merchant disposes of bitcoin at profit or loss	Realised profits and losses are reflected in earnings and are taxed accordingly if merchant bears price volatility risk
Payment Processor	
Payment processor accepts bitcoin	Processing fees are treated as revenue. Retained bitcoins are treated as trading securities under mark-to-market rules if processor bears price volatility risk
Payment processor disposes of bitcoin at profit or loss	Realised profits and losses are reflected in earnings and are taxed accordingly if processor bears price volatility risk
Other stakeholders	
Exchange platform	Commission or fee is treated as revenue as long as exchange does not bear price volatility risk
Value-added service provider	No GST on the transfer, storage, distribution or processing of Bitcoin

Impact on retail sector

Bitcoin will have minimal impact on the retail sector regarding domestic sales. With transaction verification taking up to one hour to be sure, it simply was not designed for real-time, point-of-sale transactions.

Online domestic retailers could experience marginal upside. Bitcoin will enable users without prior access to debit or credit card facilities to pay for online purchases; this is evidently a small market in Australia.

Impact on payments sector

The Australian payments sector is relatively efficient when processing fees are compared with rates in the USA and major Euro zone countries. Although Bitcoin has its advantages, it is not a good replacement for cash, and it does not offer meaningful savings, if any, relative to debit cards, EFTPOS, electronic funds transfer, BPAY and other existing payment methods.

Without established Bitcoin lending systems in place, Bitcoin usage is not comparable to credit cards, but is more akin to debit or prepaid card services. The estimated processing cost for these two financial instruments is between 0.5 percent and 1 percent of the purchase value when charges are routed through the Visa or MasterCard network. This makes it difficult for Bitcoin to match from the onset as users must contend with exchange commissions, trading frictions and processing fees. However, as Bitcoin trading liquidity improves, rates are expected to decline markedly—perhaps reaching the lower end of this range.

The nation-wide EFTPOS payment network is difficult to improve on for low fees. Charging merchants only 16 cents, the equivalent of 0.27 percent, on an average $60 purchase makes it challenging for Bitcoin to achieve materially lower rates.

In a comparison with PayPal, Bitcoin is more expensive for domestic personal transfers because this service is free if it is funded from the user's bank or PayPal account. Personal transfers funded by debit card or credit card are costlier than average credit card processing rates. So are merchant transaction fees, however, applying the highest volume discount brings this cost down to a level comparable with high-end debit card processing costs.

Generally, Australian processing fees are competitive enough that Bitcoin poses no serious threat of making inroads into the domestic payments market. A possible risk to this assumption is the encumbent's exposure to cost competition from cryptocurrencies due to high credit card merchant fees. While this may be the case, the premium on credit cards processing fees can be partially attributed to the cost of credit delinquency. These are the same risks all creditors must provision for whether they lend out dollars or bitcoins.

Impact on banking sector

As a store of value, Bitcoin is different from gold bullion, fine art, or any object of perceived value in that it potentially offers better liquidity with lower transaction frictions; and the supply is absolutely capped, perhaps declining over time as bitcoins are lost. Like these other objects, however, it poses no apparent threat to the banking system in this capacity.

Bitcoin presents no foreseeable direct risk to the funds management or insurance businesses of banks. On the other hand, it may have a role in bringing efficiency to retail international telegraphic transfer services because rates offered by commercial banks, usually ranging between 3 percent and 10 percent on top of a fixed fee of around AUD 20, are considered high. Additionally, credit card interchange fees derived from cross-border transactions may be negatively affected if users trend towards Bitcoin-based payment services for overseas purchases. However, these offerings don't contribute materially to banking revenue making their overall influence rather muted.

The extent to which Bitcoin can impact other banking sector businesses is predicated on its ability to challenge the Australian dollar as legal tender. At present, this has proven to be a philosophical question not unlike the comparison of gold to fiat money. Despite gold's alleged ability to protect against inflation—an important Bitcoin claim—evidence does not support the notion that gold can disrupt the banking sector in a well-functioning economy, despite its status as both legal tender and a store of value.

Nevertheless, it has been suggested that Bitcoin is better than gold because it is infinitely divisive and it can be easily transmitted anywhere in the world. These advantages should be considered in the larger context given that Bitcoin's drawbacks are considerably pertinent to this argument:

1) Bitcoin is not superior to cash, EFTPOS, electronic funds transfer, BPAY or perhaps debit card for applicable domestic transactions. It does not offer material cost savings, if any at all.

2) Bitcoin is not suitable for real time purchases. Since verification blocks are only created every 10 minutes, it takes on average more than five minutes to verify any transaction once. Now, to prevent double spending, the recommendation is to wait for six verification blocks before finalising a purchase. This makes Bitcoin unsuitable for everyday situations where cash, EFTPOS or debit card clearly outperform.

3) Bitcoin is reliant on technological amenities such as computers, mobile phones, special software and a live Internet connection. These requirements bring fragility into the system, making it unusable in many scenarios, especially outside the stability of a peaceful, modern and functional society. Without these features, Bitcoin assets may be easily lost or inaccessible.

These factors will serve to limit Bitcoin's relevance to everyday transactions, mitigating the threat that it poses to the Australian dollar. Without widespread general acceptance, usage cannot take off regardless of Bitcoin's status as legal tender. But, it is worth noting that legal tender status is not important if Bitcoin is utilised in the applications put forward in this proposal as long as the suggestions on GST are taken aboard. That is, consider cryptocurrencies primarily as a tool for performing cross-border payments. Under this hypothesis, Bitcoin should have minimal impact on the deposit-taking and domestic credit functions of the banking system.

Bitcoin credit may prove to be an exception to this view if it is not well managed. In theory, the widespread use of Bitcoin lending facilities, with an obvious application in the financing of imports, has the potential to compete with this banking function. Further, the introduction of new credit, in the form of Bitcoin, increases the total credit supply, indirectly putting downward pressure on interest rates. This situation has two important implications:

1) It contributes complexity to existing tools the government has for managing the economy.

2) Furthermore, although the supply of Bitcoin is known, it has been estimated that seven percent of users hold 96 percent of the inventory. This concentration of ownership exposes early adopters of Bitcoin credit to the risk of market manipulation if there is insufficient global liquidity to ensure the price discovery mechanism is working efficiently.

Bitcoin and security

There is a misconception that cryptocurrencies are secretive and unaccountable due to having no central authority. When combined with the capacity to electronically transfer funds anywhere in the world, Bitcoin potentially becomes a powerful tool for distributing illicit funds. This suggestion is not without merit, but important safeguards are there to manage blockchain technology for legitimate personal and commercial uses that contribute to improving the world.

Bitcoin transactions are not secret. Every transaction ever performed is collected, published and indexed in the blockchain for public access. Analysing transactions has helped US law enforcement officials convict offenders in some well-publicised cases. This was possible because Bitcoin transactions specify both a source address and a destination address that inform the system where to withdraw funds and where to deposit them. These addresses are stored in Bitcoin wallets, and wallets can in turn be linked to user identities. Although there are methods of creating addresses outside this scheme, the fact remains that the underlying protocol works on the principle of traceability.

Transaction limitations serve as another level of protection against unlawful use by controlling fund transfer volumes. Reasonable limits may be applied to personal and commercial accounts to increase the difficulty of relocating large sums. When used in conjunction with judicious monitoring of Bitcoin exchanges and the blockchain, authorities can prevent the purchase and disposal of suspicious funds, and gain a better insight into illicit activity.

As a mechanism for transferring funds, those who seek to use Bitcoin for unlawful purposes inevitably exist. In this regard, it is no different from existing financial services, cash or other exotic means that are currently employed to achieve this objective. However, the safeguards provided by Bitcoin, traceability and volume restrictions, make it relatively unattractive to those wishing to transmit large sums of money without restriction.

Moreover, having all transactions unconditionally published makes it easier to ultimately discover such activities in the battle against money laundering and terrorism financing.

Conclusion

The disruptive power of blockchain technologies is becoming clearer every day. Although, it is not granted that Bitcoin or related applications will succeed for certain, there is a strategic opportunity for Australia to develop special expertise in a system with far-reaching implications.

As an industry, Bitcoin holds the promise to create many thousands of knowledge-based employment opportunities allowing local participants to create economic value by developing innovative services that can help reduce the cost of cross-border transactions. This benefits consumers across the globe. Moreover, as a country reliant on exports, Australia stands to gain from Bitcoin's ability to markedly enlarge the addressable market for consumer goods.

While there may be risks associated with new technologies, this discussion has attempted to demonstrate that they can be managed, and that the benefits of Bitcoin far outweigh them for early adopters. For their part, regulators can support this vision by ensuring equitable treatment under the law, low transaction frictions and low barriers to entry. Let Australian start-ups compete on an equal footing with the best operators around the world.