

The Effect of Blockchain Technology on Tax Reduction in Joint-Stock Companies

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ABSTRACT---- *In the modern scenario, the concept of blockchain has been utilised by many business organisations across the globe. In addition, to make revolutionary changes in the operational behaviours of the companies the concept of blockchain has been utilised. Although, the technology is still under progress and needs several improvisations by contracting on the financial services and tax-paying operations it can be observed that the blockchain concept has made the entire process far more enhanced and secure. Blockchain is an essential and effective managerial factor that focuses on encrypting the personal data. However, this is identified that in case appropriate blockchain method is not implemented, the tax reduction process can be corrupted. On that basis, an innovative technology process such as anonymous blockchain technology can be taken in consideration. With the assistance, anonymous blockchain technology, the managerial activities of the organisation can be easily completed without any issues.*

1. INTRODUCTION

The blockchain technology is one of the simplest and de-centralised processes to keep the records safely in digital assets. However, the transactional records can also be kept within the blockchains. In this case, the transactional records are called blocks and public or several databases within the blocks is known as chains. The chains of the technology mainly connect through peer to peer nodes. In addition, the database in which data of the transactional operations gets stored is known as a digital ledger. The primary motive of this particular assignment is to demonstrate the use and effectiveness of blockchain technology and its usefulness to record the transactions in an authorised way. Besides that, in the modern scenario, there are various joint-stock companies available in not just in Saudi Arabia, but across the globe that utilises the blockchain technology to keep their transactional record more fluid and enhanced.

In the modern digital age tax rates have acquired completely new and enhanced shapes through which the inter-taxation between the taxpayers and tax authorities have been changed. The potentiality of the digitization taxes has been implemented by many nations across the globe that have made the tax collection process easier and faster. However, while discussing the financial and accounting treatments in the financial institutes at Saudi Arabian Banks and other financial institutes have made the financial treatments of multiple transactions more apt and easier. Moreover, while discussing this particular aspect within the tax-related activities of joint-stock companies, the probability of fraudulent activities and errors can be identified and mitigated as well. On the other hand, it can be understood that the potential of blockchain technology mainly explores the entire universe and operational process of cryptocurrency. In addition to that, it can be understood that the tax administrators and Saudi Joint Stock Companies have become interested in implementing the blockchain facility within their organisational tax-paying structure.

However, due to the application of the blockchain facility in tax system external and unwanted outflow of cash can be minimised and efficient record of economical transactions can be established. For this, an effective understanding and coordination between the tax administrators of government and authority of the joint-stock company must be assured. Privacy is one of the most critical factors in this case as tax applications and blockchain database codes are the confidential aspects that are required to be protected from the intruders. It can be observed that there are multiple traits have been presented within the financial and economic concepts of Islamic organisational transactions. It can be stated that based on the Islamic accounting standards that are exceptional from conventional accounting. Apart from that, to reduce the conjunctions in the Islamic joint-stock companies, the block-chain concepts have been utilised. On the other hand, one of the crucial aspects of blockchain concept works similarly for the joint-stock companies so that certain stakes can be mitigated. Apart from that, the participants of the company that uses the blockchain concept to assess the fraudulent activities within the companies. In addition to that, the majority of the developed nations across the globe uses the block-

chain conceit to calculate the payroll of the employees and to minimise the flaws of financial transactions within the organisation. Moreover, based on the tax-related concepts of blockchain technology it can be understood that the banks and other financial entities of the nations along with joint-stock corporations use the blockchain technology to automatically generate the salary for the employees by deducting the taxes. However, positive impacts can be ascertained within the companies after using the blockchain technology that can make the payroll taxes faster and help to initiate the financial transactions and other inter-organisational operations easier and less costly.

2. LITERATURE REVIEW

2.1 Overview of the blockchain technology

Blechsmidt & Stöcker (2017) have stated that in the modern scenario the concept of blockchain is one of the most essential aspects that supports the utilisation of cryptocurrency in various organisational concepts. Apart from that, the block-chain concept can also be used to sign business contracts, property, patents and initiate the documentation of multiple business operations. On the other hand, by using the technological extensions while using the blockchain technology also supports to initiate smart contracts.

According to CGMA (2018), it can be observed that the blockchain can also be defined as a public ledger that efficiency records all the financial transactions. On the other hand, in respect of the joint-stock companies, the tax-related operations can be initiated automatically. The blockchain concept is also divided into three different types, such as public blockchain, consortium blockchain and private blockchain. Demirhan (2019) have also expressed that there are several blockchain platforms have been developed over the past few years that have their own unique characteristics and peculiarities.

2.2 Blockchain in Tax administrations of Joint-stock companies

Peterson (2018) have stated that the potential of blockchain technology mainly extrapolates within the universe of cryptocurrency. Apart from that, there are several application can be observed that have been created based on the blockchain concept. Additionally, this concept has also been used within the government area for initiating the registration related operations and ensure a significant and cost-effective supply chain. In the modern scenario, the concept of black chain used by joint-stock corporations effectively pays the tax amounts to the government and pays salaries to the employees after automatically deducting the taxed amounts.

Demirhan (2019) have expressed that one of the most interesting aspects that is also related along with this concept is the internet of things that help this particular technology to develop drastically. On the other hand, there are many experts that criticise regarding this concept and have stated that the utility of the blockchain can be improved by using a wide range of smart gadgets and devices so that the global network can be properly used. The tax administrators of joint-stock companies and government are also specifically interested in using the blockchain concepts to properly initiate the financial transactions and tax-related obstacles. Typically the transactions that are related to the VAT management operations and other tax payments can be managed by blockchain concept. Hossain et al. (2019) have stated that the application of blockchain also requires specific coordination from other managerial and IT (Information Technology) departments so that the infrastructure can be properly maintained.

However, as per the organisational professionals, blockchain concept has also been explained as a potential facilitator that can allow the company to take several actions in between the tax administrators. Apart from that, Theodorou & Sklavos (2019) have stated that by maintaining a significant interrelation in between the internal organisational departments and tax administrating department of the joint-stock companies. However, as in the modern scenario, the global digital world has drastically expanded a huge part of the nation's GDP have been utilised for enhancing the use of technological innovations and implementations. In addition, the government of the nations have also incorporated new and enhanced legislation policies so that taxes can be easily collected and payables can be collected against the sales and profitability. Hossain *et al.* (2019) have explained that the investment and market information are required to be properly analysed and considered so that so that the tax authorities can understand the sales and profit potentials of the joint-stock companies.

2.3 Blockchain implications for tax

The blockchain has a significant strength to initiate a disruptive recognition within the market. However, it also allows the joint-stock corporations to recognise the most effective financial operations and makes the tax payment process easier and error-free. Apart from that, the blockchain technology is still under processed and requires significant and regulatory changes in both organisational and government perspectives. On the other hand, based on the most effective implementation of the blockchain concept effective strategy and training must be assured for the IT team of the joint-stock company as the regular transactional data must be uploaded to the system. However, while discussing the concept of integrated and enhanced IT solutions the blockchain concept may require far-reaching changes within the legal prospects and intellectual property rights. In addition to that, it can be understood that in respect of a long-run the perspective and concept of the blockchain can be utilised as a driving factor that can be implemented on a real-time basis and to make the tax payments automated.

Based on this Demirhan (2020) have stated that the automated tax process can be beneficial for large and small scale and even joint-stock corporations so that the financial transactions can become more effective and easy. On the other hand, majority of the developed countries across the globe makes their payroll systems automated by using the blockchain concept so that the salaries can be credited in the employee's account in a particular date and time. However, there are several government organisations available that use the blockchain concept to transfer the social tax and payables after deducting the amount from the employee's salary accounts.

3. METHODOLOGY

In order to analyse the impact of blockchain in tax reduction in joint-stock company, this is necessary for the IT department to analyse the methods used in blockchain. Blockchain is an essential and effective managerial factor that focuses on encrypting the personal data. However, this is identified that in case appropriate blockchain method is not implemented, the tax reduction process can be corrupted (Crosby *et al.* 2016). On that basis, an innovative technology process such as anonymous blockchain technology can be taken in consideration. With the assistance, anonymous blockchain technology, the managerial activities of the organisation can be easily completed without any issues. Moreover, the tax reduction process can be completed by the joint-stock company. Similarly, the legal risks can be avoided by implementing this process by the joint-stock companies. The anonymous blockchain technology has various using methods such as CoinJoin, Dash, ZCash and Monero. The description of these methods is described in presented below:

3.1 Coin Join

Coin Join is a protocol that focuses on conducting the blockchain related activities without trusting their Bitcoin to other parties. On that basis, this can be stated that the management can avoid financial risk. As a result, the financial risks are reduced, the blockchain related activities cannot decrease in the future. In other words, according to Zheng *et al.* (2017), this protocol allows the user to arrange mixing the payments into one single transaction. On that basis, this can be stated that the capabilities of joint-stock management can be taken in consideration. Along with that, the quality of blockchain technology can be developed with the implementation of this method. This method focuses on implementing the most secure encryption in the personal or business related data. Therefore, third party cannot be capable of accessing the tax related data. In this regards, it can be stated that tax reduction process easily maintained.

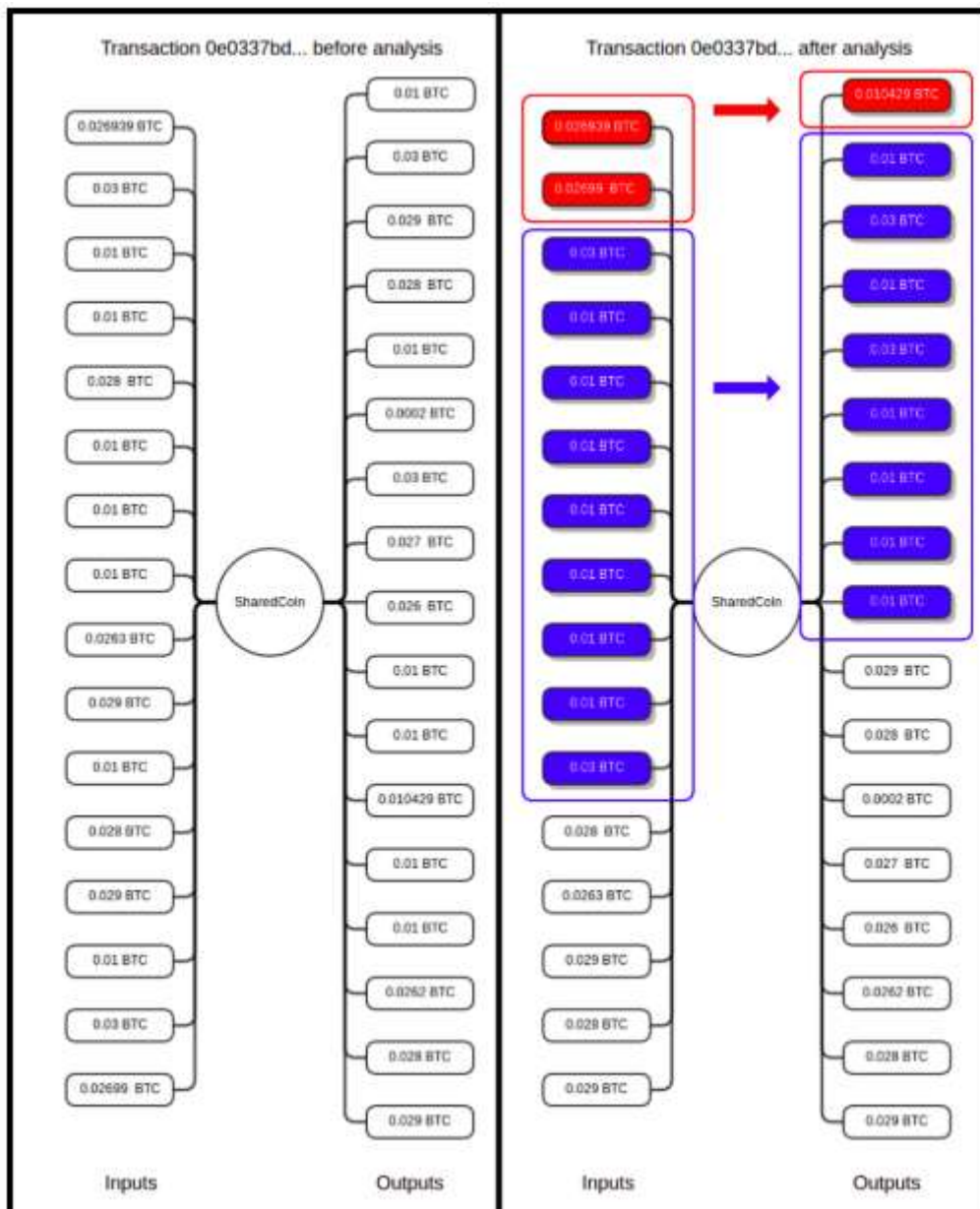


Figure 1: The practices of Coin Join

(Source: Zheng *et al.* 2017)

In the above figure, the practices regarding CoinJoin has described in a detailed manner. This identified that shared coin inputs and outputs are realised. in the first section, this realised that security of the block chain has not been expanded. As the CoinJoin was not implemented in the first section, the quality of encryption was extremely ineffective. On the other hand this has been identified that after implementing the analysis regarding CoinJoin, the security of BTC has expanded in an extreme manner. The red BTC is the most extremely secured and encrypted data and the purple BTC is less secure data. Compare to the first section the second section has improved due to the implementation of CoinJoin. Therefore, this is clear that this process helps in improving capability of blockchain.

3.2 Dash

Dash is also known as Dark Coin which also helps in conducting the anonymous blockchain process. This Dark Coin can be used instead of Bitcoins so that the user can be callable of implementing high quality encryption process in the data chain. With the assistance of dash, the encryption process can be completed within a less amount of time. Similarly, this is a simple process that helps to provide better and improved quality compare to Coin Join. On that regards, this is clear that join-stock companies can focus on implementing this method that helps to analyse the managerial capabilities and conduct the trading process without facing additional taxrelated charges.

From (amount)	To (amount)
XrvtoosZNBcEsvq8qik9KFNLWppzPDvme	1.00001 DASH XaoZjLdH8ZcTey7tjjoXV7zCjryk18S3Ev
Xcqx1LDNluhkZWmD9hkDF8uywza39e3hPL	1.00001 DASH XcB8eEGq8LGE7knnakYSWtmoCwUifayki6
Xxuqnr2JdNjibZ2KaKoGVJcFmjQ7Og7j82R	1.00001 DASH XfwrdaCYgUoUcUHRJuVQxgTqtaL8DLWCWG

Figure 2: The transaction of Coin Join

(Source: Yli-Huumo *et al.* 2016)

In the above figure Dash related transactions are evaluated and analysed by the management. With the assistance of these transactions, it can be understood that the actual dash amount is higher compare to the Bitcoin amount. Therefore, in case the management focuses on implementing dash instead of Bitcoin, the anonymous blockchain related activities can be conducted within a short period of time.

3.3 Z Cash

Z Cash is a new and innovative technology that was invented in the year 2016. With the assistance of this technology, the management was capable of supporting confidential transaction in the market. With the assistance of Z Cash, the joint-stock companies were capable of understanding the needs to confidential transaction and able to implement latest blockchain technologies. On that basis, the data security of the company can expand in a constant manner. Similarly, the current hackers will not be able to decrypt the current data regarding the conversation and generate high benefits per year.

Even though the Z Cash process is high beneficial and extremely effective in the market, this has been clearly identified that many faults regarding the Z Cash process recognised. Due to the many irrelevant faults, many joint-stock companies are not capable of conducting the managerial activities in a constant manner. Similarly, as per the opinions of Pilkington (2016), the financial capabilities of the company can be reduced due to massive uncertainties. The main issue or drawback of this system is this system capable of only working with fairly narrow time interval of 2000 blocks. Due to these issues, massive amount of time is consumed that slows down the transaction process. In order to generate high benefits from the blockchain transactions this important for the management to conduct their business activities in an efficient manner by reducing wastage of time.

3.4 Monero

The joint-stock companies have focused on using Monero which is a famous and innovative process based on Crypto note protocol. Crypto note is one of the most secure encryption processes used during a confidential data transfer. In order to avoid third party access, the management focuses on using Crypto note or cryptographical method that helps in ensuring the quality of blockchain. As a result, the personal information of joint-stock company cannot be accessed by any other members expect the business members. Therefore, the data security can be expanded and the joint stock companies will be capable of easily reduce their tax in the upcoming years.

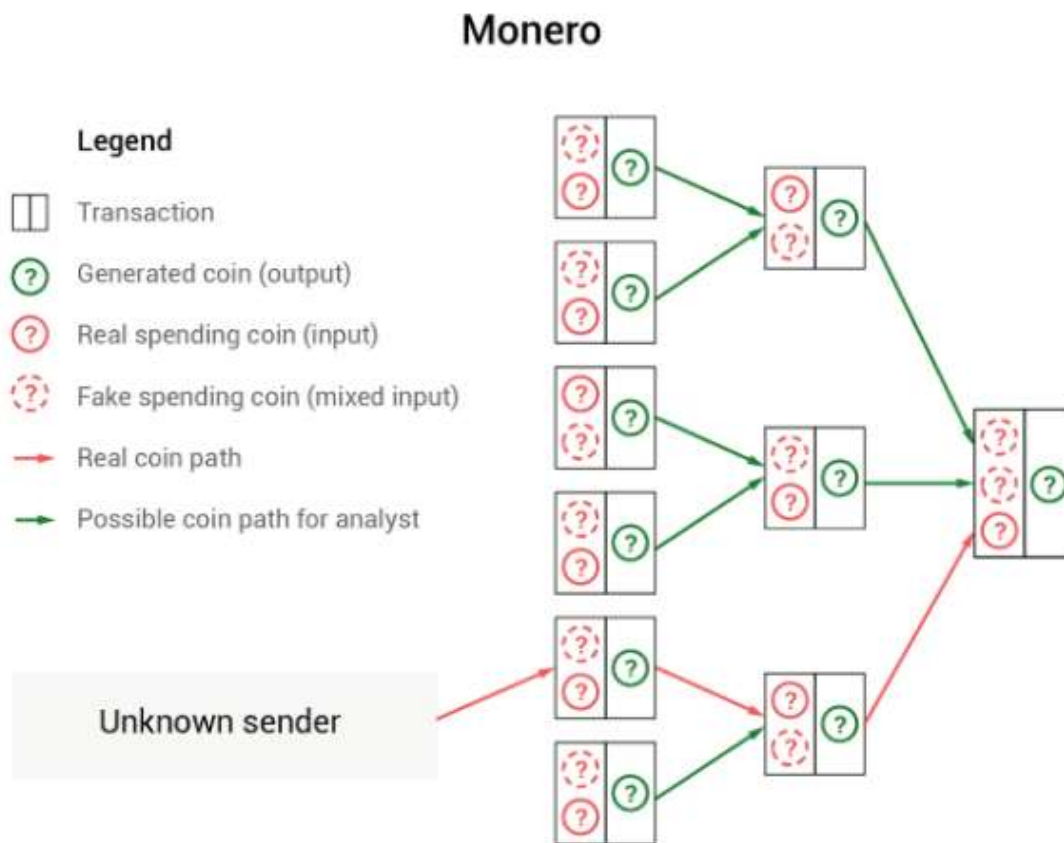


Figure 3: The practices of Monero

(Source: Mettler, 2016)

In the above figure, the practices regarding Monero have been identified. This is clear that with the assistance of Monero, the transaction of data can be conducted securely and without revealing own identity (Mettler, 2016). On that basis, the blockchain analytical process can be completed without issues. Similarly, this process shows the real coin path and possible coin path which helps to reduce wastage of Bitcoin.

4. RESULT

In respect to the above methodology, this is identified that each process is capable of having a significant impact on the blockchain process. In the result section, one method among the above methods will be analysed by using proper analytical method. As a result, this section will analyse the current benefits and limitations of the above methods by using significant analytical tactics. For the current section, ZCash has been taken in consideration. The following analysis regarding ZCash can be taken in consideration:

Name	Pattern T	Pattern Z	Mined Value	Linked Portion
Flypool	14,435	94,277	1.79M ZEC	0.995
F2pool	1,075	0	1.35M ZEC	0.994
Nanopool	0	40,083	338K ZEC	0.981
Poolin	126	0	138K ZEC	0.996
Suprnova	12,920	0	167K ZEC	0.961
Coinmine.pl	0	7,204	78K ZEC	0.925
MiningPoolHub	7,598 ²	0	156K ZEC	0.999
BitClub Pool	67 ²	0	1.9K ZEC	0.969
DwarfPool	2,953	0	27K ZEC	1.0
Slushpool	3,027	0	49K ZEC	0.999
Antpool	378	0	93.8K ZEC	0.999
Zpool.Guru	88	0	824 ZEC	1.0
Nicehash	203	0	429 ZEC	0.999
Luxor	185	0	6K ZEC	1.0
Solo Miners	3,698	0	43.8K ZEC	1.0

Table 1: Analysis of block chain capability regarding Z Cash

(Source: Ahram *et al.* 2017)

In respect to the above analysis table, this can be identified those names which have 1.0 linked portion is extremely beneficial for the block chain process. This is identified that as the link portion of the blockchain methodology will expand, the potential capabilities of the activities will also expand in a rapid manner. Therefore, the management can be capable of generating massive financial benefits per year. Similarly, the block chain security can be ensured by the company based high quality Z Cash procedures. Along with that, this can be also analysed that those names which have 0.999 linked portion are also extremely beneficial for Z Cash. With the assistance of these analytical tools, the management can be easily capable of conducting and implementing management related activity per year. Therefore, the chances of managerial risks can be reduced and the organisation will be capable of generating high benefits. Based on the above analysis, the following result regarding the use of Z Cash in blockchain can be identified:

- i) In case transaction has spent two or above transparency outputs then it is clear that the outputs are controlled by same entity (Sikorski, Houghton & Kraft, 2017). In this case, not only transparent outputs are included but also shielded and mixed outputs are also included.
- ii) In case the transparent transactions have one recipient, then all funds are sent belongs to only that specific recipient. In this case, the recipient may not be capable of generating managerial benefits in the future years.
- iii) In any case shielding transactions has more than hundred outputs, this can be identified that the output belongs to a mining pool. Therefore, all the transaction regarding that output will not be collected by the user. Only the miners will be capable of accessing the transaction regarding that output and using the transaction as per their requirement.
- iv) If the transactions are similar to 250.0001 ZEC, then it can be clearly stated that this transaction has made within a network founder. In other words, this transaction is not secure as a third party already knows about this transaction.
- v) In case both shielding and deshielding transactions recognises the similar amount, it will be assumed that both transactions are linked as same entity has provided them.

Similarly, some drawbacks of this process have been recognised based on the above analysis. the drawbacks as follows:

- i) The first drawback of this system is this system capable of only working with fairly narrow time interval of 2000 blocks. Due to these issues, massive amount of time is consumed that slows down the transaction process. In order to generate high benefits from the blockchain transactions this important for the management to conduct their business activities in an efficient manner by reducing wastage of time.
- ii) The second drawback is regarding identification of transaction in the smaller pools. The management cannot be capable of identifying the transactions in the smaller pools. Due to this issue, the managerial capabilities can be corrupted and the management may not be able to generate high financial benefits per year (Beck *et al.* 2017). This can also increase a financial gap which may expand uncertain managerial risks.

5. DISCUSSION

In respect to the above discussion, this can be clearly understood that with the assistance of Z Cash the management will be capable of generating massive benefits per year. In addition to that, with the assistance of this process, the management will be capable of analysing the aspects of encryption process. Therefore, the uncertain risks can be identified and mitigated without facing ineffective managerial issues. Similarly, this can be stated based on the above analysis that, the current security related ability of the joint-stock companies will expand by implementing Z Cash tool compare to others. On that basis, the managerial risks can be identified and mitigated in the upcoming years.

In respect to the analytical process this is distinguished that as the connection part of the blockchain approach will extend, the likely capacities of the exercises will equally grow in a fast way. Along these lines, the administration can be fit for creating enormous money related advantages every year (Biswas & Muthukumarasamy, 2016). Correspondingly, the square chain security can be guaranteed by the organization based top notch Z Cash techniques. Alongside that, this can be additionally examined that those names which have 0.999 connected parts are equally very gainful for Z Cash. With the help of these investigative instruments, the administration can be effectively fit for leading and executing the board related movement every year. Along these lines, the odds of administrative dangers can be diminished and the association will be equipped for producing high advantages.

Moreover, regardless protecting exchanges has in excess of hundred yields, this can be recognized that the yield has a place with a mining pool. In this manner, all the exchange with respect to that yield will not be gathered by the client. Just the excavators will be fit for getting to the exchange with respect to that yield and utilizing the exchange according to their prerequisite. In the event that exchange has burned through two or above straightforwardness yields then obviously the yields are constrained by same element (Treleaven, Brown & Yang, 2017). For this situation, straightforward yields are incorporated as well as protected and blended yields are likewise included.

6. CONCLUSION

Based on the above discussion it can be concluded that the concept of blockchain is still under process and there are several issues that are required to be properly resolved to initiate the best use of the technology. Apart from that, as a common blockchain technology that is used by the joint-stock companies and cryptocurrency users enters into a more complex situation in which the system becomes more crucial and tough to handle. Apart from that, the utilisation of this system into the tax-related affairs is still under development as several glitches and bugs are required to be fixed. This current assignment has discussed the effects of blockchain technology within joint-stock companies for operating tax-related activities. Apart from that, to analyse the impacts of the block-chain technology for tax reduction effective managerial factors and skills of the IT professionals are required to be enhanced. Apart from that, the block-chain can also be determined as an efficient managerial and operational tool that can assist in analysing and conducting the financial operations in an apt manner. However, in the current scenario, the blockchain is also one of the most effective platforms to reduce transactional errors and difficulties. Therefore, based on this the joint-stock companies can easily mitigate the financial risks and can also pay the taxes within the respective timeframe.

The coin join protocol can be utilised in case of block-chain technology that includes the concepts of bitcoins. On the other hand, by using this protocol financial risks can be mitigated and proper technological supports can also be utilised. Apart from that, the third party intruders can be avoided in the database of the company by using coin join protocol. Therefore, with effective security measures and secure tax payment options, the block-chain can be recognised as a secure and effective organisational tool for the current world. The concept of "dark coin" such as dash is also discussed in the assignment that assures the implementation and use of the anonymous process of blockchains. On the other hand, by using the ZCash basic needs of the joint-stock companies can also be fulfilled as well. By using this process confidential transactional can also be done without any risks of error. On the other hand, this protects the transactions from the hackers to hack into the system and decrypt the entire channel. Therefore, it can be stated that with proper and considerable utilisation of the blockchain concept within the joint-stock companies across the globe, immense structural and operational support can be acknowledged and profitability can be raised.

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