The Role of Electronic Currencies in Money Laundering

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Abstract

This study investigates money laundering due to electronic currencies like bitcoin. Currently, electronic currency is a new method of outgoings and each country adapts in a different way how to apportion with it. Nonetheless, new technologies offer us new likelihoods in our life for unspecified dealings as payments for online shopping and certainly they can be used in illicit actions as in money laundering and terrorism financing. Moreover, unrecognizability is the foremost characteristics of electronic currency which aids to disappear the income source. This is the problematic issue for developed and developing countries for the reason that they should fight such threats as money legalizing and terrorism financing. Consequently, this paper reviews and surveys the methods of these doubtful operations that can be used for money laundering by bitcoins and how to overcome or restrict these unlawful operations technical issues.

Keywords: Virtual Money Laundry, Bitcoin, Transaction, Financial Monitoring.

I. Introduction

Recently, there are many online transactions that arrange for us new probabilities for payments for goods and other purposes and they are feasibly employed in unlawful goings-on like money laundering. money laundering is a method where by the incomes of crime are transmuted into seemingly valid money or other resources[IX] and funding terrorism activities. The foremost goal of the se activities is to overawe a populace or force are gime to do assassination, truly spoiling or imperiling one or more persons; producing considerable property destruction that is probable to completely hurt persons; or interfering vital amenities, services or organizations [XI].

Crypto currency is an exchange method like typical moneys as in dollars, but considered for the intention of switching digital information throughout a procedure of cryptography operations. Cryptography can be employed to lock up the businesses and manage the conception of new-fangled coins for transactions in anew-fangled payments technique and each nation resolves in anadifferent way how to transact business with it [X]. In addition, secrecy is one of the focal characteristics of cryptocurrency that supports to
make income source hidden. This is the problematic issue for nations, as they must fight against monetary laundering and terrorism bankrolling.

Bitcoin is the most widespread cryptocurrency that has doubtful processes with employed currency via internet technology.

In this study, the approaches of electronically doubtful operations that can be used for money laundering by bitcoins are explained, along with methods to overcome or restrict these unlawful operations technical issues.

II. Money Laundering Concept

In general, money laundering is the procedure in which one hides the presence, unlawful resource, or prohibited income relevance to create it appear sensible [X]. Namely, the used manner by lawbreakers to make unlawful money a clean. However, it originally reflects a phase importance to merely drug marketing, laundering has a compulsory action in each illegitimate deed which practically produces incomes.

Lawbreakers involve in money laundering due to the following. Firstly, money has the organization essence that participates illegal behavior for fiscal expansion for the reason that it includes operational expenditures, refills records, pay for the facilities of fraudulent administrators to outflow discovery and the interests of the illegitimate business, and expends for a profligate lifestyle. On the way to employ money in these conducts, offenders should make the money they originated illegitimately look like authentic. Secondly, a money track from a transgression to offenders can be implicating substantiation. Criminals should hide their wealth supply or otherwise conceal possession to make sure that illegal incomes have been not used to accuse them. Thirdly, the crime profits by electronic or physical currencies are frequently the objective of analysis and appropriation. To defend illegal benefits from doubt and shields them from appropriation, offender must disguise their presence or, otherwise, create them justifiable.

III. Bitcoin

Bitcoin is the first decentralized peer-to-peer (P2P) reimbursement system as depicted in Figure 1 that is functioned by its customers exclusive of the dominant foremost organizations or representatives. From the viewpoint of customers, Bitcoin has likenessto ready money but it is by means of internet[I, IV].

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Secrecy is unusual to Bitcoin owing to system subsidiarity and presence of cash belonging and there is a hazard of its usage for legalizing of illegal income and terrorism financing.

As financial records of Bitcoin, addresses don't have ID information regarding users and there is no principal services provider in the system. The protocol of Bitcoin does not request and afford setting up participants and preserving data on tasks for previous times that were performed in the real world. In addition, there is no significant managerial agency at the present time there is no anti-money software for laundering and fighting terrorism sponsoring. It can locate and disclose outlines of distrustful tasks. Altogether, it offers extraordinary secrecy that is basically unmanageable in e-wallets, debit cards and credit cards and other automated payment methods.

Practically, the leading concern regarding electronic coins is that it is electronic currencies are hidden and out of customary financial societies and at complete absenteeism by law that is accessible as a sensible option.

Accordingly, Bitcoin can be positioned to a definite wallet and processes with it are inessential blocks. The integrated on-line payments record of the Bitcoin system disregards chance to find the actual wallet holders. In general, Cryptocurrencies depend on crypto analysis and the attached value is within the circulated network of the controls that are achieved by miner worker for the cryptographic task solution. It correspondingly, in addition, make difficulties for tracing and establishing truths of unlawful use of electronic coins.

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Bitcoin transactions

From the user opinion, Bitcoin is a method of electronic cash. Every individual owning connection to the Internet and required volume of memory on their computer has the possibility to be a customer of this electronic currency. The first step to initiate using bitcoins is selecting a wallet on the "bitcoin.org" website and its consequent setting up. The wallet is feasibly a traditional desktop on the computer or a mobile wallet via Internet access. A Bitcoin address is created spontaneously after generating a wallet. By means of this wallet, a user has the possibility to construct any transactions. Bitcoin transfer from one customer to another can be completed using Bitcoin transmission from one address to another. This address has complete secrecy to his possessor, it seems like a grouping of letters and figures, for example: "1D5wZqCjxNuPqfUN3RMFx5xtqRBwiAeTZ". Each wallet of Bitcoin has the secret data about secretive key to each Bitcoin address that is preserved by the explicit customer. Despite this system is somewhat reliable, website managers endorse using as many new Bitcoin addresses as feasible for each transaction. It is because of that task of re-establishment of a served key in the Bitcoin system is inattentive. Consequently, if secretive key is lost, the user will lose entirely funds that are saved on this address. Stealing secretive key will likewise cause the loss of savings. The remarkable reality is that for bitcoin delivery to the address, the customer mustn’t be linked to the Internet. This requirement is just obtainable to that customer who pays bitcoins.

The structure of handling cryptocurrency will be unmanageable to sustain if not for the self-adaptable tool being at the Bitcoin essence; specifically the blockchain.

The blockchain

This technological component has a mutual community record in each established transaction continually generated within the system. It is saved and tolerates each user to path the value of Bitcoin at any time. Based on Figure 2, for each new operation, the whole blockchain is checkered to validate that a definite bitcoin by this time was not spent. This facilitates the "double-spending problem" where any user can expend the equivalent of bitcoin two times by copying. The blockchain is not preserved by a third party, nonetheless by "bitcoin miners", persons who give their individual computational authority to adjust and hold onto the complicated system running. For blockchain record, each block is realized as a different page having entirely effective dealings as the latest page has been inserted, with a different created page perten minutes. Each Bitcoin miner worker can solve a problematic computational issue to be the first one to insert the different page. Consequently, making a competition where the victor is waged with bitcoins from the Bitcoin protocol. It is this motivation arrangement that preserves the Bitcoin network sustained, but as well inserts numerous significant security methods. If a user wants to fake one page, he must also revise each page that came from faster than entirely truthful users [III, V].

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Foreachpagevalidation, a transaction is unbreakable to change. Once six established pages, the deception is computationally unfeasible. If the deceitful user uses secure and huge values of the necessary computational control, he or she can in this case get more bitcoins from honest mining than dishonest deception.

The given bitcoins as remuneration to the miners are the solitary influx of new-fangled electronic currencies in the structure. The gained quantity from efficiently resolving a block is up to date 25 bitcoins, however, it is considered to split fifty-fifty for each 210,000 blocks. With the fundamental arithmetic fixed to uphold a percentage of one block resolved each ten minutes, the remuneration quantity will be decreased to half for every 4 years till the last Satoshi (0.0000001 bitcoin). This can make the Bitcoin system with a restricted source of roughly twenty onemillion bitcoins.

Figure 2 Bitcoin and Blockchain Procedure
IV. Bitcoin's Role in Money Laundering

Bitcoin has been partially generated with low business budgets in mind, that is reflected in their numerous incorporated properties. Though this contention is doubtful, with Bol and Cerić indicating at extraordinary information and regulating price, Bitcoin's deficiency of mediators amid purchasers and traders create outlays commonly inexpensive and processes transactions quicker than fiat currencies. Nevertheless, these properties offer transactions profit to encourage users to employ the Bitcoin network for laundering money, where three causes expressly have a huge part in dropping the business deal charges for money launderers [II, III, V]. Initially, the regionalized method that Bitcoin is created allows users to transmit monetary value to each other exclusive of involved third-party in the deal. As explained before, a core policy in customary anti-money laundering instructions is to observe the mediators who stand in amid the purchasers and traders in marketplace to bound the capability of lawbreakers to transmit monetary wealths with no analysis. The absence of mediators in Bitcoin creates the customary methodology of monetary transfer unmanageable and the deficiency of confrontational dealings for bitcoins transaction obscures the proof of identity process in further as explained from Figure 3.
Privacy Trade-Off

Bitcoin's decentralized structure, which eschews trusted intermediaries, requires all transactions to be publicly announced. Satoshi Nakamoto, the currency's creator, argued that privacy could be protected by keeping public keys anonymous.

**Traditional Privacy Model**

- **Identities** → **Transactions** → **Trusted Third Party** → **Counterparty** → **Public**

**New Privacy Model**

- **Identities** → **Transactions** → **Public**

Source: 2009 Bitcoin white paper

Furthermore, although each transaction is saved and feasibly handled in the blockchain, there is no linkage to the person or association for that transaction. Bitcoin's pseudonymous network just discloses the random record succession that is the open key, whereas the secretive key is preserved concealed, creating the binding of an actual individuality to a Bitcoin address particularly problematic. This difficulty is more complicated when a user can require numerous electronic wallets, providing them many open addresses that create probable money laundering defilements difficult to inspect. Finally, the rapidity and easiness of carried out transactions in Bitcoins creates it extremely exclusive to the customary unidentified monetary transfer used to launder money. Customary paper bills transmit with it a substantial restraint in size and weight, bitcoins are...
possibly saved in themillions onatypicalUSBdevice and handled
toanyuserintheworld intenminutes.The easinessof the Bitcoinmonetary
transferconfiguration as wellcreates itsstraightforward to avoidsupervisormeasures
bysplitting atransactionintosmallertransactions.

In accordance withmoney laundering asauthorized coinage, it is hard tomeasurethe
actuallaundered moneythroughBitcoin network. The European Banking
Authority, FBI and Financial ActionTask Force oftheG7,altogether consider
Bitcoin'seffectinthemonetary laundering difficulty, nevertheless, they
cannotprovide detailed information.Along withthe CEOof ICE3X, Vaultoro and
Bitcoindealers, money laundering isnot a noteworthydifficulty and it is justafew
distrustful casesencountered.

Nonetheless, Sweden's and Austria's Financial IntelligenceUnits, overall stated that
money laundering can absolutely arise through Bitcoin.

V. Whom to Regulate?

Based on Danton Bryans published study, adjusting all the facetsof Bitcoin could be a
close to be intolerable undertaking owing tothesystem intricacy. Attentionmust
begivenon every specific business deal entity with the intention of determining
mainlydualthings; that Bitcoinunit inthesystem, ifcontrolled, could convey the uppe
rmost atransaction budgets for money launderers, without bearing
irrationallygreattransactioncharges forthe controlled and transaction controller [VI].

A money laudnererfeasibly use fivesesentialentities thatstructures thesystem
tocover the factual money source.

Firstly, asenderwhooriginates the Bitcointransactionresulting from anillegal origin.
The pseudonymous and disappeared characteristics of userransmitting
their bitcoinsoverthenetwork, may create guidelineimpracticable and not
cause any augmented transactional charges formoney launderers. None ofgenerally
recognizableinformation is switched if atransaction hasn done amiddualusers, thatcreates
joining the dotsamidareal-life individual and a Bitcoin address
tremendously problematic. Additionally, government ruligof Bitcoinusers has a
tendency to seedense pushback from thesociety itself, as non-governmental
participation was one ofthe significant causes for Bitcoins creation. This
extremely likely conflict in aggregation with an individuality cloaked user base might
create the price tag of such adjusting application compensate its profits.

Secondly, areceiverwhoreceivesthe fraudulent bitcoins to complicate its source as well
as the Launderers. Pointing attentionontheusers of reception terminal tolerate for a
moredirected implementation on those acting with clear illegitimate intention, whereas remaining
clear of the possible resistance that ruligof the senders might demand. Nonetheless, the drawback of pseudonymity another
timedelay the credentials of such intention and law administration must employ
enormous resources for tiny interests. The consequence would be the identical as with
senders
Thirdy, Bitcoinminers whoproves thetransactionby blockimplementation. TheBitcoin organismisconstructed as a result that bitcoinminers don’t require interfacewiththeusers whosedealingsthey authenticate, and contrarily. Thiscreates ruling ofminers needless and emphasismustbeplaced somewhere else.

Forthly, the Bitcoinexpansionlineup or Team whopreserves theBitcoinsystem rationalized. AsBitcoinisanopen-sourcesoftware, imposing achangeontheadeominant power figure would not harvestconsiderablefallouts. Theexpansiongroup hasthebarring roleofatypicalactivity, continuallyenhancing thesoftwarebutpowerlesstorsoobliges avariationwith nothewhole consent of its users.Anybodycanselect anypreceeding softwarevariety,so thatanuncomplimentary transformationintheBitcoinpractice could not be approved.Itsconsequentlyextremelyimpracticablewhich any ruleplacedonthexpansionplayers has any consequence onthe transactional rateof money launderers.

Fifthly and lastly, the Bitcoinagents whotransferbitcoins fornumerouscategories ofcoingage. The majority of Bitcoincurrency exchanges provides official sanctioncoinage and bitcoins butrunningas avaluevesselamidsellers and buyers. This causes them straightforwardly categorizedas money conveying mediators, creating them validfortypicalmoneyspreaderand money interchange rules. These groupings make it simpler to laterulising without termination inlawfulgrey areas. Additionally, Bitcoinagentsareof a lessreorganizedand lessspecified characteristics overtheotheressentialthings deliberated before. Consequently, ruling Bitcoincurrency exchanges probablydisplay theextremeprofitsfor the smallestexpenses. Likewise, asthe Bitcoin dealersarean energetic portion ofthe incorporationstage inthemooney laundering development, by-lawhas worthy prospective of intensifying the transactional charge ofmoney launderers.

VI. Opposing Money Laundering Rule in Bitcoin

Ruling in Bitcoin differs significantlyamongst regions, with several nations enforcing severe necessities, others are not adaptablerealistically and severalare having disqualified Bitcoin into total. As it will shortlybe obvious, therule that is preparedpractically entirely concentrated on Bitcoin dealersand typically represents theroolecreated inmajority of banks. Entirely Bitcoin dealers in Europe are required to follow the third Anti Money Laundering Instruction preparedby the European Commission, owing tobe categorized as money communicating mediators. The instructioncontains the threekey directingo constraints, specifically, to classify and validate the individuality of its clientele and theadvantageous owners of its clientele, besides observing their transactions; to describe doubt money launderingor fanatical bankrolling to the communal powers and to yield supportive actions, for instance, guaranteeing the appropriate preparation of employees and the formation of suitable internal blocking rules and measures [VI].
In USA, there is no federal directive ruling Bitcoin, but there is variable governing rules in every state. For instance, in New York, a Bitlicense conception was applied as a method to reinforce the ruling on Bitcoin dealers. The Bitlicense is a commercial authorization that involves firmer AML instructions, that each dealer who needs a transaction in the state must afford. A cost that affected several dealers to depart the New York marketplace. In California, rule just obliges dealers to hold bank-style assets in the occurrence of likely shortfalls, whereas North Carolina is just in the process of forcing forward Bitcoin regulating bills without existing instructions in place. The huge most of South American, Asian countries African and have no Bitcoin by-law ready or have completely excluded the digital currency. New Zealand in Oceania has presently noruling in place, however, Australian possesses just guideline of overriding taxes. It is problematic to find concrete proof of the efficiency of the Bitcoin rule that is in place nowadays. Nonetheless, with the Swedish and Austrian FIU, the Swedish FSA, the Swedish ECA and a Bitcoin Proficient saw that money laundering has come to pass in Bitcoin to an noteworthy measure, the existing directives is feasibly thought deficient.

VII. Conclusions

The international risk of money laundering by electronic coins presents exceptional encounters to the regulation administration community. To carry out the evidentiary track of a money launderer, regulation administration organizations should categorize and employ tools and methods that can aid in restricting virtual money laundering. Multidimensional treaties must necessitate contributors to implement anti-laundering actions and the provincial and worldwide governments that have settled and stimulated a consistent methodology to address laundering and supplying efficient developments to address the encounters. Carried out determinations by countries without global community frequently cause important disparities from the conventional standard and have the consequence of easing laundering action rather than battling it. Merely with operational digital techniques and regulations employed jointly with monetary organization superintendents and controllers, virtual money laundering including bitcoins can be impeded efficaciously.

Recommendation and Future Trends

1. Increase collaboration between law execution, fiscal organizations, and law lords: an organized response including the judiciary, monetary industry, and regulation putting into practice is essential to fix the concerns on the subject of in effect counter-laundering dealings of virtual money transfers.

2. Launch a virtual monetary intelligence or radar section largely comprised of agents, banking specialists, and monetary experts, that gets and evaluates data from monetary symptomatic of virtual money laundering to an apposite government authorization for analysis.

3. Found in effect anti-money laundering lineups in banks: banks must launch operational virtual money anti-laundering timetable by conducting laundering-
detection guiding from majors and staffs, and arrange for significant influential accountability.

4. Guarantee global mutual aid: prearranged the straightforwardness and rapidity that lawbreakers can layer and assimilate capitals through worldwide electronic wallets, collaboration between enforcement establishments on an intercontinental basis is needed. Nations must approve regulations to ease such intercontinental cooperation.

5. Approve penalization regulations: nations must develop digital techniques and regulations that authorize the penalization of property associated with virtual money laundering and the pretrial limitation and appropriation of property subject to penalization in national cases and upon entreaty by establishments from extraneous authorities.

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