



The geopolitical position of cryptocurrency smart contracts in the contract of sale in Iranian law

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Abstract

Smart contracts have gained importance in transactions based on sales contracts because they can transfer ownership, pay the price, and enforce the terms of the contract without the need for an intermediary and based on predetermined codes. The possibility of establishing the intention and consent of the parties, the ability to attribute will to the code, the validity of the terms, and the possibility of terminating or dissolving the contract after registration on the blockchain platform are very important issues in Iranian law. Although a smart contract can be considered a template for realizing the agreement of the parties and an example of a sale from a legal perspective, the fulfillment of the basic conditions for the validity of transactions, including competence, the certainty and certainty of the subject of the transaction, and the possibility of applying the general rules of contracts, requires interpretation in accordance with technological developments and sometimes amendment of existing regulations. The result is that cryptocurrency smart contracts have significant potential for streamlining and clarifying sales contracts, but for their full acceptance in the Iranian legal system, challenges such as the validity of electronic evidence, the possibility of monitoring and the ability to apply classical legal institutions to the decentralized structure of the blockchain, the lack of legal identification, the inability to exercise some options, and the irreversibility of transactions that prevent their full acceptance must be considered and reviewed. The present study was conducted using an analytical-descriptive method and shows that smart contracts, if intent and consent are established and the ability to attribute will to the message data, can be included in the form of sales contracts. Finally, legislative and legal proposals are presented for the acceptance and legal regulation of these contracts.

Keywords: contract, sale, smart contract, cryptocurrency, blockchain

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Introduction:

The rapid growth of decentralized and cryptocurrencies has created new topics in contract law. Smart contracts, first proposed by Nick Szabo (1997), have become a reality in the blockchain era and are now used in millions of cryptocurrency transactions. With the expansion of the use of digital assets, the question arises whether smart contracts can be accepted as a form of contract realization from the perspective of Iranian law?

The main issue of the research is how the elements of sale, including intention and consent, capacity, object and price, and effects of the contract, can be adapted within the framework of contracts that are executed

by code and without human intervention. The research method is descriptive-analytical and based on the study of Iranian laws, legal theories, and studies in the field of blockchain technology.

The concept of contract:

The word contract means to tie, fasten, and fasten something. If we want to define a contract from the perspective of law, we must refer to Article 183 of the Civil Code. The legislator has stated in Article 183 of the Civil Code that "A contract is one in which one or more people make a commitment to one or more other people and it is accepted by them".

As stated in legal doctrine, this definition faces some objections. The effect of a contract is not limited to creating a commitment and may include the acquisition of property, the cancellation of a commitment, abdication, alliance and partnership, the creation of a legal entity, and marriage. (Katouzian, 1403: 196)

Dr. Seyyed Hossein Safaei, stating that Article 183 of the Iranian Civil Code is taken from Article 1101 of the French Civil Code, does not consider this definition complete and has raised four general objections:

-The definition of Article 183 of the Civil Code does not include contracts whose subject is the transfer of a commitment or the termination of a commitment.

-This definition does not include contracts that create obligations for the parties, such as a work contract for wages.

-The use of the word "person" does not include contracts between legal entities with each other or between a natural person and a legal entity.

-The legal definition of contract does not include property contracts. In this regard, they cite the interpretation provided in French law and have stated that in a property contract, an obligation is also created, but as soon as it is created, it is expressed and canceled, therefore, the aforementioned contract will also be subject to the definition of civil law. (Safaei, 1403: 19)

Finally, in order to avoid the four proposed forms, Dr. Safai has provided a definition of contract, which is "the agreement of the will of the two parties in order to create a legal effect, whether this effect is the creation, change or collapse of an obligation or the creation, change or collapse of a tangible right such as ownership and others". (Safaei, 1403: 20)

Dr. Jafari Langroodi has translated the word "contract" as meaning "agreement" or "clause", but ultimately he has expressed doubts that Persian speakers of Ferdowsi's era and before him used "clause" for contracts and agreements. (Jafari Langroodi, 1400: 2556)

The definitions we have stated, by combining the elements and pillars of the declaration, can provide a definition of a contract that illustrates the concept of a contract.

Smart Contract:

The word contract has a broad and general meaning.

A smart contract is a self-executing program that stores the terms of an agreement between parties in code and executes them automatically (Buterin, 2014.)

These contracts are executed as soon as the conditions are met, without the need for human intervention.

A smart contract is a self-executing piece of computer code that contains a set of predefined rules that automatically enforce the terms of the contract. (Hyde et al., 1959)

Cryptocurrency Smart Contracts:

This type of smart contract is mainly used in the cryptocurrency ecosystem and is based on networks such as Ethereum, Solana, and BNB Chain. The subject of the transaction is usually a digital asset, and payments are made in cryptocurrency.

In fact, in the field of cryptocurrencies, contracts have been established that allow transactions and settlements to occur without the intervention of individuals, and all these operations are self-executing. For example, Ethereum is a cryptocurrency smart contract. (Yano et al., 1401)

Blockchain:

Blockchain is a distributed, decentralized, and immutable ledger (Narayanan et al., 2016).

Blockchain may still be unknown to many people. The ledger is a permanent fixed book. The record must be correct and unaltered. Blockchain is a ledger that is collected by an unlimited number of participants in a decentralized manner on the Internet. (Yano et al., 1401)

These same features ensure that contract information cannot be forged or deleted.

Cryptocurrency and its place in transactions:

Although Iranian lawmakers have not yet recognized cryptocurrency as money, there is no absolute prohibition on its storage and exchange, and from the perspective of private law, it can be considered as property with economic value.

Definition of digital currency or cryptocurrency:

"Cryptocurrency is a secure digital representation in encrypted form of value or contractual rights that uses some type of distributed ledger and can be transferred, stored, and traded electronically." This broad definition has been used by the Cryptocurrency Working Group report. There are many types of cryptocurrencies and why some prefer the term cryptocurrency to cryptocurrency, cryptocurrency seems to have a narrower meaning and is likely to be interpreted as meaning that its use depends on the transaction or is equated with currency (Hyde, Thomas, Armstrong QC, 1403: 38).

According to this definition, cryptocurrencies have other properties in addition to the nature of money, and the working group formed on cryptocurrencies believes that we should use the term cryptocurrency so that the mere use of money for cryptocurrencies is not removed from the definition and that all cases, even the title of digital assets, are included.

Most cryptocurrencies are designed for greater security, the elimination of intermediaries and anonymity. Digital currencies are currencies that use encryption for transmission on the Internet. Some governments recognize virtual currency as money, in other words, they believe that virtual currency has three main functions of money: a medium of exchange, a unit of account, and a store of value. Digital currency is a complex and abstract concept that is considered the latest evolution of money. Cryptocurrencies are just a series of computer codes that store monetary value. These codes are generated by high-powered computers, which consume a lot of energy. Cryptocurrencies are also called digital currencies. Cryptocurrencies and digital currencies are both types of public money that are generated through a very complex computing process and monitored by millions of computer users, known as miners. For this reason, it is almost impossible to counterfeit this money. This currency uses cryptography to keep transactions secure and to control the creation of new units (blocks). The special attraction of digital currencies is that they are not owned by governments and states. In fact, no individual, organization, government or country has control over these currencies, and it is the digital and virtual world that maintains its security and value. (Abadi Lamar, 1400: 14-15)

Bitcoin is a digital currency, decentralized, peer-to-peer and anonymous based on cryptography. (Abasi, 1397: 9)

The definition used terms that we must explain in order to get acquainted with the correct concept of cryptocurrencies:

-Digital

Cryptocurrencies are merely computer codes and do not have a physical existence, so cryptocurrencies are identifiable in the virtual world and symbols have been created for them that are used.

-Decentralized

Bitcoin does not belong to any individual, organization or country, in other words, no central bank or institution controls it. In fact, there is a group of anonymous and anonymous experts from all over the world who run its software program and are trying to manage the Bitcoin monetary system. (Abbasi, 2018: 9)

-Peer-to-peer

In the cryptocurrency system, the main goal is to eliminate intermediaries, banks and financial institutions, so for example, when you send Bitcoin to another person, no intermediary plays a role in this transfer and the amount of Bitcoin you transfer is directly deposited into the destination wallet account and you do not pay any fees or commissions for this transfer.

-Anonymous

While all cryptocurrency transactions are observed in a general ledger called the blockchain, the names of the sender and receiver are not known and their identities will only be a string of numbers and letters that are not identifiable to individuals. If you do not want anyone to know your identity, you can make your Bitcoin transactions anonymously or anonymously. (Abbasi, 2018: 10)

-Cryptography

What is cryptography? This word seems scary at first glance. Cryptography involves the science of secure communication. Cryptography involves receiving information and converting it in such a way that only the intended recipient understands it and uses that information for their intended purpose. The process of converting a message is called encryption and the process of opening it is called decryption, which is done by complex mathematical methods (Borinsky, Tatar, 2019: 60).

History of Digital Money:

Anyway, because of these problems, humanity thought of a solution and invented a currency that, on the one hand, would not have the problems of gold and silver money; because, as we said, firstly, the volume of gold and silver in the world is small and does not meet the economic needs of today's industrialized and advanced world, and secondly, its transfer and storage have many problems, and on the other hand, it would not have the disadvantages of credit money. And when some people paid attention to the fact that humanity has trusted in a currency that has no intrinsic value, but rather its value is credit, and its issuance and control are mainly in the hands of those who do not have any control over the individual users of the money, except perhaps indirectly, for example, through elections and voting for people who have anti-inflationary and anti-expansionary monetary policies, they can have some influence in this field; So they thought to themselves that if we could create a credit that could gain the trust of society and did not have the limitations of gold and silver money and the problems of credit money dependent on specific centers, it would be a more useful money. The financial crisis of 2008 and its destructive effects in major parts of the world intensified this thought; because the fear of stagnation and falling behind the caravan of economic growth and development and financing of increasing costs prompted governments to release as many credit notes as possible into the market, and as we said, although this practice brought benefits, it also brought many harms. So it was better to produce a money that could not be exploited in such unfair ways. The new conditions required that the new money, in addition to having the general characteristics of a money, also have the following conditions:

First, it should be pure credit.

Second, it should not be under the control of a person, group, legal entity, or even a government or international institution that might misuse it in times of difficulty.

Thirdly, it should be in line with today's technology.

And considering the new technologies and the extraordinary achievements found by numerous computer programs, it occurred to them that nothing is better for this than software and computer programs. (Tabatabai Yazdi and Ahmadi School, 1401: 68-69)

With the emergence of problems, the question was raised again whether it was possible to create money that, while enjoying the advantages of not having a metal backing, did not have the disadvantages of credit money. Money that was not only easy to use; but also that no government or institution had the ability to produce it indefinitely. In other words, it must be universal and reliable. In these circumstances, creating money that was reliable on its own and without the backing of any institution was a very difficult but possible task.

The idea of forming digital money and using cryptography in the financial industry dates back to ancient times, and has been implemented in various forms several times, but for some reason it did not reach the stage of widespread adoption. (Brunton, 2010:11-12)

Thus, money has become more intangible, virtual, and digital over the ages, and has undergone a several-thousand-year evolutionary process that has now reached the concept of Bitcoin. With the development of information technology, electronic money entered the economy, which is essentially the same as paper banknotes, but has transformed from a physical and tangible form into a series of numbers and figures inside a computer and network. In other words, electronic or digital money is a new mechanism for paying conventional bank notes. In recent years, a money has emerged that is inherently very different from bank notes and has brought with it a new unit of measurement with a completely different and unique mechanism called cryptocurrency. (Abadi Lamar, 1400: 12)

It has been claimed that online money can expand to the point of challenging current government money. (Ingham, 1400: 259)

Thus, some people thought of creating digital or digital money, and some trace the beginning of this idea back to the early 1980s, when it is said that two people named "David Chum" and "Stephen Brands" presented an article and methods for electronic money in 1983. Until 1998, the first ideas of encrypted and decentralized virtual money were presented in order to free the use of conventional monetary centers, but this issue remained dormant until 2008, when a person or persons or even an entity under the possibly pseudonymous name "Satoshi Nakamoto", which is a Japanese name, presented an article entitled "Bitcoin, Peer-to-Peer Electronic Money", in which he presented a specific proposal for digital and cryptographic money, and it is said that the first Bitcoin network was actually launched in January 2009. (Tabatabai Yazdi and Ahmadi School, 1401: 70) As mentioned, the idea of digital money goes back to the research of David Chum and Stephen Brands in 1983. People such as Adam Beck developed confirmation of work in the network and a mechanism for controlling spam until Vida proposed the encrypted money protocol. Widay, an IT expert, first proposed the concept of virtual money, meaning encrypted money, as an idea on his personal website in 1998. His intention with this proposal was to facilitate financial affairs and create money without the presence of intermediaries. In fact, this idea sought to enable self-governing money that would be used among its users with a global scope and of course virtual, and on the other hand, governmental institutions, including the central bank, would not interfere in controlling it. Over the years, this idea was generally pursued in various forms by IT experts such as Hal Finney, until in 2009, Bitcoin was introduced as the first virtual currency and a successful operational example of previous projects. (Riyazi Mand, 2018: 21)

Bitcoin is a successful example of virtual money:

Bitcoin is the latest form of money that has entered this world with the help of high-level technology. Bitcoin is an innovation in the field of capital acquisition that has been discovered with the help of technological facilities of the digital age to solve a problem that has always existed for all humans (Amos, 1400: 21).

To understand the importance of technology for digital money, it is instructive to look at the world before the invention of Bitcoin. In general, payment methods are divided into two distinct categories that have nothing in common:

First, cash payments that are made between individuals as two parties to the transaction. These payments are made and completed quickly and there is no need for a third party in the transaction to confirm and settle it. There is no delay in these payments and no third party can interfere with this type of transaction

and prevent it. The main and main problem with these types of payments is that they require the simultaneous physical presence of both parties to the transaction in the same place. A problem that is becoming more and more apparent every day, as remote communication has made it more likely that people will want to transact with people who are not nearby.

Secondly, intermediary payments that require third-party approval include checks, credit cards, bank transfers, money transfer services, and recent innovations such as PayPal. Intermediary payments are defined as payments that involve a third party, a party that transfers money between two parties to a transaction. The main advantage of intermediary payments is that these payments no longer require both parties to be in the same place at the same time, allowing payers to make payments without directly handling money. The main problem with these payments is that these transactions require third-party approval and settlement, and this need for a third party involves risk, the risk of non-settlement by the third party. There is also a risk in the costs and time it takes to complete and settle these payments (Amos, 1400: 231).

Since Bitcoin is a common and successful example of virtual money; in order to better understand the nature of this type of money, we will examine Bitcoin. It is clear that the mechanism of other digital currencies is very similar and in parts identical to Bitcoin.

Where did Bitcoin come from? Although Bitcoin is only a few years old, it has a unique story. It was stated that the idea for Bitcoin came from a developer named Satoshi Nakamoto. This was the name that appeared in the papers describing the technical aspects of this new project, of course, it was a pseudonym and Nakamoto's real identity is still unknown. The initial Bitcoin white paper was written in October 2008. It was a nine-page document that briefly described the key aspects that Satoshi had in mind. The paper also named this peer-to-peer electronic cash system. The name we know today: Bitcoin. The white paper's abstract reads in part:

“A fully peer-to-peer version of electronic cash that allows online payments to be made directly from one person to another, without an intermediary such as a financial institution. Digital signatures provide part of the solution, but if a third party is required to prevent double-spending, the main advantages of the system are lost. We provide a solution to the double-spending problem by using a peer-to-peer network”.

The first sentence says it all. It outlines the purpose of Bitcoin and why it can be considered valuable. For the first time in history, we have a system that can send value from point A to point B without physically moving anything or involving a third party. It is difficult to express in words what a major turning point this event was in the payment system. (Lara, 1400: 18-19)

Bitcoin's goal was to transfer the credit value of the credit money embodied in paper banknotes and possibly metal coins that did not have much intrinsic value, especially in that small volume, to the software world and to correct their shortcomings. (It was said that the main problem with paper banknotes was that the exclusive privilege of issuing them was directly or indirectly in the hands of governments, and by increasing the volume of money, governments caused harm to some people, although it might also have benefits for some people or even for the entire nation) and to achieve this goal they had two axes:

1- Using computer encryption to protect against theft by others and prevent the creation of counterfeit money.

2- Using blockchain technology, which can both increase the security of this credit money and decentralize it in a way (with the help of a peer-to-peer network) and maintain the credibility of the money over time. (Tabatabai Madrasa, Yazdi and Ahmadi, 1401: 71)

After the publication of those papers, Satoshi created the first software program to start the mining process of Bitcoin production. In January 2009, Satoshi mined the first Bitcoin block called the Genesis Block. Some time later, Satoshi brought this project to the attention of a group of cryptographers, many of whom were members of the Cypherpunk movement. Satoshi developed many of the ideas for Bitcoin inspired by previous Cypherpunk activities. At first, this group of computer scientists looked at Bitcoin as a fun hobby,

talking about how the system would work or not, and of course, how governments would react to it. It took until early 2010 for Bitcoin to be used in global transactions. During this time, a larger community of developers, along with Satoshi, evaluated the Bitcoin code and released version 2.0. The first Bitcoin transaction for a physical good took place on May 21, 2010, when a Bitcoin user named Laszlo bought a \$25 pizza for 10,000 Bitcoin! This transaction led to the formation of the famous Bitcoin Pizza Index, and the price of that pizza increases every year! The Bitcoin community has grown slowly since 2010. Mt. Gox, the largest Bitcoin exchange, was founded, making it easier to buy and sell Bitcoin. The price of Bitcoin finally reached parity with the dollar in February 2011, reaching \$1, and then rose rapidly. This rapid growth was primarily the result of increased media attention. Many sites covered Bitcoin, and Internet users gradually began to buy Bitcoin. At the same time, news about the Silk Road gradually spread. This website allowed its users to buy and sell illegal goods, mostly drugs, with Bitcoin (due to its security and anonymity). (Lara, 1400: 19-20)

The attention to this emerging phenomenon continued to increase the price, and in June 2011, Bitcoin reached \$31. However, this rapid price growth subsided after a while. The database of the largest exchange at the time, Mt. Gox, was attacked by hackers, which led to the theft of hundreds of thousands of dollars worth of Bitcoin, and this reduced confidence in the new currency. The price dropped dramatically, and many considered Bitcoin a failed project. But that wasn't the end of Bitcoin, and it gradually gained more users over the next year. By the end of 2012, there were more Bitcoin users than ever before, and more businesses were accepting Bitcoin as a way to pay for goods and services. In late November 2012, the first Bitcoin halving occurred. The Bitcoin blockchain network experienced its first halving after reaching block 210,000. This reduced the reward for miners from 50 to 25 Bitcoin.

2013 was the year of Bitcoin's leap. At the beginning of the year, the price of Bitcoin was around \$13, but with more media coverage, the price quickly grew. Popular Internet brands such as WordPress and Reddit also switched to Bitcoin. New users quickly entered the market, and since obtaining new Bitcoin (the mining process) is not easy, demand greatly exceeded supply, and of course the price increased again. On April 10, the price of Bitcoin reached an astonishing \$266. (Lara, 1400: 20-21)

In early May 2013, the first dual-currency Bitcoin ATM was launched in San Diego, California. It allowed for the purchase and sale of Bitcoin with bank notes. This event sparked a wave of Bitcoin ATMs around the world. Of course, many of them were not profitable because demand did not meet expectations at the time. However, when the Mt. Gox exchange experienced another technical problem, the price fell again. This time, the problem was excessive delays in registering Bitcoin orders. As the price began to fall, new buyers panicked, and a huge number of sell orders caused the price to reach \$55 in just a few days. After this bubble, the price gradually rose and became more stable, most likely due to the increasing acceptance of Bitcoin among merchants and the introduction of new services that made it easier than before to trade Bitcoin. Today, in the first half of 2021, the price of Bitcoin has reached more than \$30,000 and its market cap has surpassed \$600 billion. At the time of writing, it is estimated that the United States has the most Bitcoin users in absolute terms, but the Scandinavian countries have the most Bitcoin users per capita. The highest rate of Bitcoin adoption is now in China. Since Bitcoin requires a strong Internet and computer infrastructure, it may not yet have established itself well among developing countries. (Lara, 1400: 21-22)

From the first quarter of 2015 to the first quarter of 2018, the number of blockchain wallet users has grown by nearly 654 percent, from about 3 million users to 24 million users, and the total value of virtual currencies has increased from 5.5 billion euros in 2016 to 256 billion euros in 2018. The transaction volume of the top ten virtual currencies is more than 10 billion euros, which means that if a country's daily oil sales volume is 2 million barrels and the rate per network is 60 euros, this transaction volume is less than 2% of the daily volume of virtual currency transactions. After the growth and development of Bitcoin around the world, it was the turn of ATMs. Today, the most Bitcoin ATMs are in the United States, with 2,134 Bitcoin ATMs installed in this country. After the United States, the most Bitcoin ATMs in the world are located in Canada. This country has 606 machines installed in different locations. The UK is next with 169 machines, followed by Austria with 146 and Russia with 69 ATMs in fourth and fifth place. There are currently 3,443 Bitcoin ATMs worldwide. An average of six Bitcoin ATMs are installed per day, with 63.06% of ATMs

operating in a one-way fashion and 36.94% operating in a two-way fashion. Cryptocurrencies and their associated technology (blockchain) are rapidly gaining popularity. When Bitcoin was introduced in 2009, few people knew or understood it. Bitcoin was like the Internet in 1994, and many people considered it a useless technology. Of course, those who were enthusiastic and interested in the technology invested in Bitcoin, this was the first phase of the boom. The second phase of the boom occurred around 2014, when investment institutions began to invest in Bitcoin. In 2017, people's interest in digital currencies intensified. They were no longer looking for Bitcoin, but their attention was also drawn to hundreds of other digital currencies that had amazing returns and profits. They are now investing in other lesser-known and small currencies. One of the most important reasons for the spread of cryptocurrencies is the unique advantages they provide to users. These advantages include: high speed and efficiency in payments, especially cross-border payments, security of currency exchanges, as well as the elimination of additional operating costs charged by intermediary institutions. Along with the advantages mentioned, this type of currency also carries risks that have caused governments to take contradictory positions on it. Among these risks are the risk of money laundering, tax evasion, internet and cybercrime, facilitating the purchase and sale of illegal goods, use in terrorist operations, and speculative bubbles, all of which are very likely due to the encrypted nature of these types of currencies, which will be explained below. (Abadi Lamar, 1400: 15-16)

The concept of sale:

According to Article 338 of the Civil Code, sale is "the acquisition of a thing in kind for a certain consideration".

Therefore, the thing sold, the price, and the will of the parties are the main elements of the sale contract.

Basic conditions for the validity of transactions:

A verbal transaction includes a contract, and in other words, the word "deal" also includes a contract, while both words "deal" and "contract" are used in the Civil Code. The word "contract" can be considered to be related only to specific contracts stipulated in the Civil Code, and "deal" can be considered to include private contracts subject to Article 10 of the Civil Code. In any case, as explained in Article 190 of the Civil Code, four conditions have been foreseen for the validity of transactions:

The intention of the parties and their consent

The competence of the parties

The specific subject matter of the transaction

The legitimacy of the transaction

Given that most jurists have explained the four conditions stipulated in the law, there is no need to repeat them in this article; However, in the following chapters, when we discuss the currency codes, the corresponding section will examine and explain the compatibility of the four cases with the main topic of the treatise.

Determining the price in a sale contract:

As we explained in the previous sections, the price can be in different ways; it can be a specific thing, the whole thing in the liability and other cases, as well as its common type, which is money. However, what can be examined based on the types of price naturally requires conditions that we will examine:

- **The price being known**

In the definition that we presented of the sale contract in Article 338 of the Civil Code, "known consideration" is considered; now, what does the price being known mean?

Being known is used in contrast to being unknown, which is the same difference between knowledge and ignorance. We have previously stated that a contract of sale consists of two elements: the thing sold or the price and the price, and the difference between the price and the thing sold is like the difference between the consideration and the consideration, but ultimately, the custom of transactions and economic

circulation has made the price in a contract of sale money, and if there is no evidence that another contract has been fulfilled, that contract is considered a sale.

Article 216 of the Civil Code, although it has dealt with the issue of the transaction (or the thing sold), the issue of whether it is clear or not is current in the discussion of the thing sold and the price, because as we have previously stated, the angle of view is the position of the consideration in the contract of sale. Now, the interesting point is that Article 216 of the Civil Code has not been clarified in the discussion of the contract of sale and its provisions, but we know that the basic conditions for the validity of transactions in certain contracts are also attached to the specific provisions of certain contracts. What is certain is that the subject of the transaction in our main discussion, the price of the transaction, must be known in detail, and general knowledge is an exception, because the nature of the definition of the contract of sale is specified in exchange for a known consideration.

As can be understood from the use of the word exchange in Article 338 of the Civil Code, which states that "sale is the acquisition of a thing for a known consideration," the range of properties that can be considered as price is wider, and according to Articles 214 and 215 of the Civil Code, any property or action that has a legitimate rational benefit can be considered as price. (Emami, 1403: 417)

Now, considering the above-mentioned levels, if the price is an external thing or in the form of an external thing that is subject to observation and the removal of ignorance. If it is a general thing that is not subject to liability, its type, description, and amount are specified in order to obtain knowledge, which is stated in Article 342 of the Civil Code.

One of the important issues in a sale contract is knowing the price, and it seems that mentioning the price in the contract is not the only way to determine the price, although it is the common and customary method of determining the price in a sale contract. (Yahiapour, Al-Hawiyah Nazari, 2012)

One of the important jurisprudential rules that considers the price to be known as obligatory is the rule of gharar, and famous jurists consider the price to be known as obligatory in order to prevent gharar, and there is also a claim of consensus in this regard. (Ansari, 1415, vol. 4: 206 - Naraqji, 1375: 83 - Araki, 1373, vol. 2: 253)

According to the famous Imamiyyah jurists, it is necessary for the price to be known in a way that eliminates gharar, and some jurists, citing a narration (Rifa'ah al-Nakhas), rule that the sale is valid, the determination of which is left to the buyer. Some jurists, while recognizing the validity of this narration and quoting the consensus from the owner of the tazkirah that the price must be certain at the time of the contract, say that in resolving the conflict between the narration and it, just as in many cases, verses of the Quran and narrations have been attributed, consensus is also attributed here, and since the narration is authentic and its chain of transmission is free from objection, it is the duty of the jurist to act on it. As a result, a sale whose price is not specified and is referred to the customer's decision is valid, and in these cases the market price is the price in the contract. (Yahyapour, Al-Hawiyah Nazari, 2012: 122)

Therefore, according to this opinion, it is not necessary for the price to be known at the time of the sale contract, but the ability to determine the price is sufficient.

Regarding the claim of consensus, an argument has also been put forward to reject consensus, because consensus here is evidence, not devotion, in addition, the rulings of the jurists actually refer to the Prophetic hadith, and consensus here is not considered an independent argument, and also the Prophetic hadith prohibiting gharar is weak in terms of both evidence and implication, and finally, it is understandable that there is no specific evidence for the validity of knowledge of the amount of the price in the sale. (Khuyi, 1374, vol. 5: 318) According to this view, contrary to the well-known theory of jurists, the possibility of knowing the price makes the sale contract valid and is not considered a reason for invalidating the sale in this case, because considering that the price of the goods can be determined in the market, it can eliminate the gharar because it is indirectly known and noticeable between the parties.

Regarding the famous prophetic hadith "Nahi an-Nabi an-Bii' al-Gharar", it was said that it is weak in terms of evidence and implication, with the explanation that it is not known in terms of the evidence of the entire chain of narrators. (Khuyi, 1374, vol. 5: 257) Of course, some jurists believe that fame between the specific and the general compensates for its weakness. (Naraq, 1375: 312 - Ansari, 1415, vol. 4: 206) An action known to be narrated weak does not make it valid, just as leaving an action narrated sound does not make it invalid. Fame in itself is not an argument, so it does not make the news authentic. (Khoi, 1374, vol. 3: 89)

In terms of the meaning of gharar, which is general, they have raised objections. Some believe that gharar is anything related to negligence, deception, and danger, or that which is outwardly popular and inwardly abhorrent, but its close meaning is deception. (Isfahani Company, 1418, vol. 3: 277)

Shahid Awal believes that gharar is anything that is outwardly popular and inwardly abhorrent, and in Islamic law it is ignorance regarding the acquisition and obtaining of an object. Therefore, if the acquisition of an unknown object is known, there is no gharar. (Makki Amili, Bi Ta, vol. 2: 137)

Unlike Shahid Awal, the owner of the jeweler considers gharar to be due to ignorance of the quantity or characteristics of the transaction, not ignorance due to acquisition, and they believe that ignorance due to the failure to determine the transaction leads to danger and is included in the title of gharar and prohibits attempting it. (Najafi, 1374, Vol. 22: 388-387)

Some others believe that gharar should not be equated with ignorance because it is possible that there may be ignorance about the thing sold but there is no gharar involved, such as the sale of two goods that are equal in price and characteristics. (Naraq, 1422: 302)

From what has been mentioned, the conclusion is that the meaning of gharar is general and its generality has spread to the narration and has deprived it of significance. (Khuyi, 1374, Vol. 5: 257)

In other words, based on the rule "if the possibility arises, the inference is invalid", the above argument is no longer valid and another basis should be sought. (Amini, 1386: 22)

The price in a sale contract is one of the two pillars of consent, and just as knowledge of the thing sold is a condition for the validity of the sale, given the need to eliminate the ambiguity, the price paid should not be unknown. Sometimes the parties specifically and definitely mention the price in the contract and the contract is created with a combination of other conditions, but sometimes the type of contract is such that at the time of its conclusion, it is not possible to specify a definite figure. For example, in car transactions, factories determine the price or in the sale of oil, the daily price is applied in the transaction. In transactions between individuals, sometimes the determination of the price or fee is left to the customer. In all these cases, the intention of the parties is that the other party dictates what is customary and reasonable in society. (Khoi, 1374, Vol. 5: 321)

Now the question arises whether the condition of the specific nature of the transaction, which we mean here is the price, has been observed in the civil law?

At first, it seems that, in view of Article 339 of the Civil Code, the ruling of this type of transaction is invalid due to the lack of determination of the price, but this appearance should be abandoned. In fact, a closer look at the issue provides another answer. The explanation of the matter is that, apparently, today's custom has made some changes in how to apply the removal of ambiguity from the subject of the transaction. (Katouzian, 1403, Vol. 1: 150)

One of the jurists believes in this regard that whenever the subject of the contract is known in custom, it is not necessary to express or observe it, and this customary situation can be considered the reason for the subject of the transaction being known to the parties, for example, considering that the price of many goods is known due to government intervention in controlling the market, if even the transaction price is not mentioned at the time of the contract, it should be said that the transaction price is known by custom and the transaction is valid. (Shahidi, 1998, Vol. 1: 321)

In support of this opinion, it has been stated that when there is agreement on the criteria of the actual subject of the transaction, as when a contract is agreed upon at a daily rate by appointing an expert, then there is no ambiguity and both parties are assured of the effects of the contract and its results. (Qasemzadeh, 1998, Vol. 2: 121-120)

The above opinion can be confirmed, but it should be noted that the ruling on the validity of the contract in the event of the absence of price refers to a case where the sum of intention and consent, that is, the realization of agreement in this regard, has taken place. Sometimes the parties agree on all issues, but during the negotiations they do not reach an agreement on the quality of the criterion for determining the price, or the process does not reach this stage at all. This issue is outside the scope of our discussion, and there is no doubt that such transactions are invalid. (Khoi, 1374, Vol. 5: 319)

In such a case, the validity of the transaction cannot be judged by the current price, because the element of agreement and consent between the parties is still incomplete, and applying the current price instead of the missing price in a void contract is an imposition of something that was not the intention of the parties and is tantamount to moving against the principle of freedom of contract. Therefore, the place of discussion is where the price is not mentioned in the contract, but the parties have agreed that, for example, the opinion of the customer, an expert, or the custom of the day should be referred to, or a criterion and rule for determining the price should be specified. Here, since the price is certain or is certain in the judgment, based on paragraph 3 of Article 190 of the Civil Code and Article 339 of the Civil Code, the judgment takes precedence over the validity of the transaction. (Yahiapour, Al-Hawie Nazari, 1391: 129)

- **Ownership of the price**

A property is something that is under the control of the owner, such as a house, horse, land, etc. (Jafari Langrudi, 1403: 688)

In fact, being under the control of the owner can have a common aspect with having ownership and the ability to be surrendered.

In contrast to the properties that are the subject of individual ownership, there are properties that do not have a specific owner, and they are divided into three categories: common properties - permitted properties - properties of unknown owners. (Emami, 1403: 41)

Perhaps ownership can also be examined in terms of the ability to be assigned to the owner. Sometimes property does not have the ability to be under the control, and if it does not have this ability, it cannot be considered as price.

- **Ability to deliver the price**

Just as the delivery of the thing sold in a sale contract can be examined as the effects of the sale, the ability to deliver the price is also important and the origin of the effect is in the sale contract.

Capability means the possibility of delivering the price, and delivery according to Article 367 of the Civil Code is the giving of the price to the seller in a way that allows for various types of possessions and benefits, and receipt is the seller's seizure of the price. Given that this section discusses the delivery of the price, we have changed the text of the article regarding the delivery of the sold item to the delivery of the price in order to examine its effects.

According to the provisions of the Civil Code, delivery of the price occurs when the price is placed under the seller's control, even though the seller has not yet actually taken possession of it. Delivery of the price is of different qualities and must be in a way that is commonly called delivery.

Also, if the parties to the transaction have set a deadline for delivery, the power to deliver on that deadline is a condition and the time of the contract has no effect on the matter.

Article 372 of the Civil Code states: If the seller has the power to deliver some of the goods sold and does not have the power to deliver others, the sale is valid for some of the goods sold and invalid for others.

We should note that the discussion of the division of the transaction, which is established in this article and the related option in Article 441 of the Civil Code, can also be applied to the price. Therefore, if part of the price is invalid, the same provisions of Articles 372 and 441 of the Civil Code apply.

Article 441 of the Civil Code is applicable if the lost part can be divided and transferred separately and is equal to a part of the price. (Katouzian, 1403: 337)

The option of division of the attribute is created in the case of a shortage of price and any other compensated transaction. (Katouzian, 1403: 338)

As we have already stated, the conditions that have been announced for the thing sold must also exist for the price, and one of these conditions is the power to deliver the price, which is the ability to deliver the price. At the end of Article 348 of the Civil Code, it is stated that the sale of something that the seller does not have the power to deliver is void unless the buyer is able to receive it. The same ruling applies to the price, so if the price is such that the buyer is unable to deliver it, it will invalidate the sale unless the seller is able to receive it.

- **Ownership**

In the ownership of the thing sold or the price, the criterion of personal ownership is considered. It is sufficient that the seller has financial value in the relationship between the two parties, that is, the custom of giving money for it is reasonable. (Katouzian, 1403: 297)

Ownership means the ability to be valued in money. (Jafari Langrudi, 1403: 3169)

Having property means having exchange value. (Emami, 1403: 418)

One of the conditions of the transaction is that it has property, that is, it has economic value. A transaction is invalid for something that has no property. (Shahidi, 1403: 49)

Here, the issue of having property is raised regarding the thing sold, which of course, when we look at the conditions of the transaction, will include the thing sold and the price.

Some jurists have defined property as follows: "Al-mal ma yabdil baza'e al-mal" means "property is something that is given in exchange for property." This definition is not free from problems because the definition is circular and logically impossible, meaning that understanding the meaning of the word "property" at the beginning of the sentence is dependent on understanding the word "property" in the definition sentence, while understanding this second word "property" is also dependent on understanding the meaning of the first word "property". Because it is assumed that the concept of property is not known, while the title "property" is mentioned again in the definition of the same property. (Shahidi, 1403: 50)

The best definition of property is to say that property is something that has economic value.

Property is not an absolute concept, but a relative concept and is measured by specific conditions and circumstances. We know that the concept of "property" contains the element of society. Because the existence of economic value without society is meaningless. (Shahidi, 1403: 50)

According to Article 190 of the Civil Code: Intention and consent, competence, the specific nature of the transaction, and the legitimacy of the transaction are the main elements.

Data message and digital signature according to the Electronic Commerce Law (1382) can be used to meet these conditions.

Effects of sale:

Transfer of ownership, necessity of contract, options, and necessity of delivery and collection are among the most important effects of sale.

Realization of the elements of a sale contract in cryptocurrency smart contracts

Intent and consent:

Message data, digital signature, and recording of a transaction in the blockchain can be examples of expression of will (Electronic Commerce Law, Articles 10-12).

In foreign studies, recording a cryptocurrency transaction has also been considered a form of expression of will (Werbach & Cornell, 2017).

Eligibility:

In blockchain, the identity of users is anonymous, and although authentication is performed by the network, transactions can be carried out with an identity other than the original identity.

This poses a challenge to establishing eligibility and can prevent the validity of some transactions.

Subject and price

Digital assets such as tokens and NFTs can be specific subjects of sale, because they have a unique identifier.

Cryptocurrencies can also be considered valid price, provided that there is no specific legal prohibition (Safaei, 1400).

Of course, based on the identification of cryptocurrencies in each country, cryptocurrency can be considered as a price or a price.

Legal effects of a smart contract in sales

Transfer of ownership:

Registering a transaction on the blockchain is considered a digital delivery and receipt.

In international research, blockchain is also known as a system for transferring ownership (Tapscott & Tapscott, 2018).

Options:

Since transactions are irreversible, the exercise of traditional options is difficult and faces ambiguities.

The only solution is to foresee the right of termination in the contract code; which is implemented in some cryptocurrency protocols.

Evidence:

Blockchain is considered a document that can be relied on in lawsuits, because it is unforgeable and has probative value (Electronic Commerce Law, Article 12).

Challenges and Solutions

Legal Challenges

Lack of explicit laws

The legislature has not yet provided for regulations on smart contracts, and this gap has raised doubts about their legal validity.

Government and Supervision:

Governments do not have the ability to stop or manage blockchains, which prevents traditional supervision.

Solutions

Legislative Solutions

- Enact a special law on digital assets
- Recognize smart contracts
- Create a legalized digital identity system

Legal Solutions:

- Possibility of issuing a court order to stop or suspend a cryptocurrency smart contract
- Amend the e-commerce law to include blockchains and digital assets

Conclusion:

Cryptocurrency smart contracts have a high potential to revolutionize the sales system. However, for their acceptance in Iranian law, issues related to eligibility, options, judicial supervision, and the probative value of data must be resolved in a transparent manner. The present study showed that despite the possibility of adapting smart contracts in principle to sales contracts, the lack of specific regulations and technical challenges prevent their full acceptance.

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