Potential risks and regulatory countermeasures of the development of pass economy in the meta universe

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ABSTRACT

The rise of Metaverse provides a new opportunity for the development of communication economy. Metaverse provides an ideal digital space for the equal participation of pass economic subjects, the economic value of creators, and the realization of rights and obligations by consensus rules. The potential risks associated with the development of the new economic form should be prevented. For example, the price fluctuation of the pass may infringe the rights and interests of creators, consumers and other subjects. The virtual space of the Metaverse may breed behaviors that violate laws and public order and good customs. Metaverse may be controlled by capital to form monopoly, etc. The combination of meta universe and pass economy can be used to regulate “law + technology”, including legal registration/certification + blockchain technology verification, legal procedure + automatic execution of smart contract, governance according to law + Dao autonomy. Specifically, the administrative organ uses blockchain technology to verify digital identity and digital property, review participant identity and activity content, supervise operator monopoly behavior and formulate national standards.

Keywords: meta universe; pass economy; NFT; “law + technology” regulation; general economic law

1. Intruduction

The normalized prevention and control of the COVID-19 has changed people’s work and lifestyle, online work, online entertainment, online education, etc. Have gradually become the norm, aiming to build a digital world parallel to the real world—Metaverse has begun to come into people’s vision. We should take the initiative to respond, turn danger into opportunity, deepen structural reform, and give birth to new development momentum with scientific and technological innovation and digital reform[1]. Metaverse is a pass economy with integrity as the core as its operation basis and driving force, and constructs a “non-contact economy” characterized by fair participation, encouraging and rewarding creation, rule construction and ecological sharing, which provides a new path for the combination of digital identity and digital property for economic development. The technical fit and integration between the meta universe and the pass economy can promote better economic development. How to prevent the potential risks of the pass economy in the meta universe and establish a pass economy law in line with the combination of digital identity and digital property is the key to whether the
pass economy in the meta universe can “give birth to new development momentum”. The regulation of the potential risks of the pass economy in the meta universe is not to limit its development, but a realistic response to how to build a personal relationship that adapts to the pass economy in the meta universe based on digital property and the governance rules established to adjust new social relations.

2. The “blueprint” for the development of Tongzheng economy under the background of meta universe is beginning to appear

The concept of metaverse first appeared in the science fiction avalanche. The characters of the novel enter the cyberspace designed by the developer, generated by the program, without material form and can interact with others in real time through specific devices. With the continuous development of blockchain, artificial intelligence, network and computing power, virtual reality (VR) and other technologies, the meta universe described in science fiction is being established. At present, the connotation and extension of the meta universe are developing rapidly, and it is too early to define the concept of the meta universe, but it does not prevent us from describing its basic outline according to the development characteristics of the meta universe. The prominent feature of Meta universe is the use of technology combination to establish a social relationship between participants based on digital identity and digital property. Metaverse is a virtual digital space that can interact with the real world. We cannot deny that “the meta universe is objective, open-source, dynamically evolving, user-oriented, and essentially an artificial virtual parallel world”[2].

2.1. Metaverse is an ideal operating environment for Tongzheng economy

The emergence and development of the Metaverse cannot be separated from the support of emerging technologies. First, relying on blockchain, we can build an open and transparent platform. The characteristics of blockchain, such as point-to-point real-time transaction and economic incentive, make it the basic technology for the operation of meta cosmic economy. Second, artificial intelligence provides digital images and other artificial intelligence products for the participants of the meta universe, making it possible for the meta universe to develop parallel to the real world. Third, 5G provides high-speed network operation (there will be higher speed and safe network technology in the future). Fourth, virtual reality allows participants to have almost real experience audio and video communication without time and space constraints. Among them, blockchain solves the problems of effective allocation and circulation of resources/value, while artificial intelligence is used to create value[3]. The above technology combination enables the meta universe to continue to operate on “a complete economic system formed by key elements such as digital identity, digital assets, digital market, digital currency and digital consumption”[4]. Among them, “the pass should be a ‘pass’ with integrity as the core and a digital asset in the blockchain network”[5], including both divisible and non unique homogeneous pass and non divisible and unique non homogeneous pass (hereinafter referred to as NFT).

The pass economy and the meta universe share a common technical foundation and have developed before they are combined with the meta universe. “In the narrow sense, ‘blockchain + token economy’ is a combination tool”, “the organic combination and comprehensive use of technologies with multiple specific functions of blockchain have realized the advantages of complementary functions”, which has brought governance changes in the aspects of “equal participation of multiple subjects, automatic realization of rights and obligations, and value obtained by token in circulation”. There are also risk control tasks such as “circulation circulation may not form, dishonest behavior, rule monopoly”. However, due to the lack of a wide range of application scenarios, the pass economy has not been fully utilized as a combination tool, and has not “changed the existing production relations and formed a new economic model through the effective allocation of resources”,
that is, it has not developed into “blockchain + pass economy in a broad sense”[5]. Introducing the pass economy into the meta universe can make the pass economy with the essence of combination tools fit the network. Ecology-meta universe, which is also established based on combination tools, and endow the meta universe and pass economy with new development characteristics, rather than the simple superposition of the two (Figure 1).

Figure 1. Relationship between meta universe and general economy.

The pass economy is the bridge between the meta universe and the real world, which makes the meta universe move from the internal cycle to the external cycle of the real world, and realizes the complete cycle of creation, right confirmation, circulation and transaction of the pass economy in the meta universe (see Figure 2). In sharp contrast to the fact that the early meta universe only operated in the meta universe, it also charmed the technical worship of the meta universe, “return to the instrumental nature of information network technology and point the research of network culture from the technical world to human life, especially to the spiritual world of human life”[6].

At present, although the meta universe is in the embryonic stage, the combination of different advanced technologies is not a stack of dog tail and mink. On the contrary, it increases the inclusiveness of the meta universe, provides an ideal digital ecology for the development of the pass economy, and makes the pass economy move from the core of digital property to the core of the combination of digital identity and digital property.

(1) The digital identity of the Metaverse promotes the equal participation of the economic subjects of the pass.

The decentralized identity system provided by the meta universe allows participants to participate in the meta universe as a digital identity, which can ensure the equal participation of the economic subjects of the pass. a. When participants enter the meta universe as a digital identity, their online behavior will be recorded under their digital identity, regardless of the real identity behind the digital identity. b. The relationship between digital identity and real identity is many to one, that is, the subject of the real world can have different digital identities in the meta universe and use different digital identities to carry out economic activities. c. Even so, the digital identity can still correspond to the real identity, which determines that the digital property under the digital identity in the meta universe can be transferred in the real world through the real identity.

(2) The creator economy of the meta universe promotes the value of Tongzheng in its generation and circulation.

The digital space of Meta universe is jointly built by participants, who can digitize their works and trade them. You can also create directly in the meta universe and circulate your digital works in the form of NFT through the pass economic system. Generally speaking, creator economy refers to the latter NFT refers to the unique, indivisible, encrypted and transferable proof of rights and interests used to represent digital assets, which is the value embodiment of the creative activities of meta universe participants. The work carried on the pass has value due to the work itself or the creator, which determines whether it can continuously obtain value in the process of circulation.

(3) The consensus rules of the meta universe promote the realization of the rights and obligations of the participants in the pass economy.

The subjects participating in the pass economy can realize their rights and obligations under two sets of rules. When the first set of rules is set based on the meaning of the contract, that is, when the conditions
of autonomy are met, the first set of rules is automatically set based on the meaning of the contract. The second set of rules is the consensus rules jointly recognized by the participants of the meta universe. All participants should trade on the basis of the consensus rules, so as to maintain the stable, sustainable and safe trading order of the pass economy. The consensus rule is the premise for the economic participants to carry out autonomy, and the rights of the participants will be guaranteed under the consensus rule.

2.2. Development goal of pass economy in Metaverse

The development goal of pass economy in the meta universe is inseparable from the development of the meta universe itself. According to the relationship between the meta universe and the real world, this paper divides the development of the meta universe into three stages. The primary stage based on the game, the intermediate stage of mapping the real world, and the advanced stage overlapping with the real world (Figure 3). In the primary stage of the meta universe, build a general certificate economy. In the intermediate stage, the pass economy not only connects the Metaverse 1, Metaverse 2, Metaverse n, but also connects the meta universe and the real world. In the advanced stage, the “cloud” representing the meta universe is fused with the “Rectangle” representing the real world.

“Game + social” stage of the meta universe: Building a pass economy in the meta universe

At present, it is in the primary stage of meta universe. It mainly builds a network platform based on “game + social” to provide participants with real experience scenes. There is a relatively complete and stable economic mechanism in the game in this paper, the property in the game is divided into two categories. The first type of game property can be used as money in the game to buy the equipment, skin and other second type of game property. In the primary stage of meta universe, the operators of meta universe pay attention to the immersion experience of game users, reward or encourage users to participate with different types of passes, cultivate users’ sense of belonging to meta universe, and gradually establish the ecology of meta universe.

The stage of “mapping the real world” of the meta universe: The pass economy connects the meta universe and the real world

In short, the “real world mapping” stage of the meta universe is to put some contents of the real world into the meta universe, that is, restore the real world in the meta universe, let more people participate, and make the meta universe a part of social life. This exploration has been started in the primary stage of the meta universe, which can not only digitize some resources in the real world and flow in the meta universe in the form of pass, but also transfer the digital resources created in the meta universe in the form of pass, and further convert them into corresponding rights and interests in the real world. The above process implies the connection between the pass economy and the meta universe. The digital identity and digital property of one meta universe also need a carrier to enter another meta universe. “The most basic requirement of interconnection is that the virtual products/virtual property/virtual equipment obtained in a small world can still be used in another room/theater. This requires a common currency, a common code for the protection of private property and so on”[7]. Pass brings the legal rules of the real world into the meta universe, and the digital property of the meta universe that conforms to the legal rules of the real world can be accepted by the real world.

Even though the current meta universe is only explored in limited fields, this does not prevent people from turning their attention to the development goal of the meta universe. It can be imagined that there are black box operations in the transaction process, open transaction selection algorithms, users choose the core subject of the transaction, consumers + creators. The meta universe wants to establish a digital world inseparable from the real world, and the meta universe is the extension of real social life.
in the virtual space. The economies of scale brought by real value oriented big data and the right confirmation economy to protect the rights and interests of creators apply the rules of the digital world. The concept of meta universe may even cease to exist because it overlaps with the real world, which absorbs it as the development feature of the real world in the digital age. According to this development idea, the idealized meta universe cannot and does not need to operate independently above the real world, but produces a digital world closely interacting with the real world under the background of comprehensive digitization, which is a networked and real virtual reality. It can be expected that the pass economy established by relying on different types of pass is expected to use advanced technology to greatly improve productivity, change the existing production relations through the effective allocation of different forms of resources, and make the pass economy develop into a new economic model.

2.3. Advantages of pass economy development in Metaverse: Comparison with internet economy

Both the pass economy and the Internet economy in the meta universe can complete the cycle of “generation circulation exchange” of resources/value. The development of the pass economy is not completely separated from the Internet economy. “Metauniverse is the comprehensive integration, connection and reorganization of various Internet related technologies. It is the ultimate model for the organic integration of all elements of the Internet and an ultimate ‘vision’ for the development of all elements of the Internet in the future”. Table 1 shows the comparison between the two. An important feature of the Internet economy is to achieve economies of scale through replication, driven by consumer demand.

Table 1. Comparison of characteristics of general certificate economy and Internet economy in the meta universe

| Internet economy | Pass economy in the meta universe |
|------------------|----------------------------------|
| Transaction mode | Central platform leading transaction | Point to point transaction |
| Transaction link | There is a black box operation | Disclosure of transaction process |
| Transaction selection | Algorithm selection | User selection |
| Core subject of transaction | Consumer | Consumer + Creator |
| Value orientation | Economies of scale brought by big data | Right confirmation economy to protect the rights and interests of creators |

The whole life cycle of resources/value in the pass economy will be fully recorded, and each exchange will be confirmed as the ownership of rights, driven by the creation of creators. “The first important indicator of the prosperity of the meta universe is the number and activity of digital creators. The founders of the meta universe need to provide more and more simple creative tools to reduce people’s creative threshold”. The essence is that there are two breakthroughs in the basic technology of meta universe pass economy compared with the Internet Economy. First, blockchain technology can clarify the property rights of virtual goods and digital assets that were difficult to confirm in the past, which is the basis of exchange. Second, somatosensory technology makes it relatively easy to bridge the gap between the real world and the virtual world. “The underlying technical foundation supports the healthy operation of the meta cosmic social system. The social system also needs to adapt to the technical system. Only when the two promote
each other can we realize the maximum efficiency of the meta cosmic economic system.\textsuperscript{[11]}

3. Potential risks of the development of communication economy in the meta universe

At the initial stage of the development of the pass economy, the pass more reflects the mapping of real-world goods in the blockchain network, and is the representative of real-world resources in the blockchain network. The pass economy in the meta universe is not only the representative of digital resources, but also reflects the value of digital resources and radiates the vitality of the pass economy. In the meta universe that can realize value through creation and increase value through circulation and exchange, the subject of the legal relationship of the pass economy has the power to participate, which is also a self-innovation of the economic incentive mechanism of the pass economy in the meta universe. However, the development of new economic forms is inevitably accompanied by potential risks. It should be noted that the risk does not lie in the technology itself, but the high-speed circulation of digital assets has impacted the existing relatively stable economic order and the resulting social relations, resulting in the lack of governance in the existing social system, which can not be adjusted timely and effectively to reduce the risk.

3.1. The price fluctuation of the pass may cause the rights and interests of creators and consumers to be infringed

Pass economy is a bridge between the meta universe and the real world. According to the circulation of pass in the meta universe and the real world, it can be divided into three stages. The potential risks and regulatory countermeasures/values of pass economic development in the real-world resources. Meta universe enter the meta universe, the circulation of digital assets in the meta universe, and the circulation of pass from the meta universe into the real world. The possible risks in different stages are different, and the infringement of rights and interests of different rights subjects is also different.

**Direction 1: When resources/values flow from the real world into the meta universe, there may be violations of property ownership and use rights**

The operation of the pass economy in this direction is that the resources/values of the real world are digitized and transformed into corresponding types of passes, according to their own nature, which flows in the meta universe. Generally speaking, the default carrier of real-world resources/values is the owner or user, that is, the legal possessor. However, in the real world, even if the owner does not directly occupy the object, he can still judge his possession of the object through corresponding legal rules, which can be called “character separation”, that is, the legal owner does not occupy the physical resources/value. Once the resources/values in the real world are digitized, the digitized resources/values have been separated from the resources/values in the physical world, which can be called “material number separation”. After “character separation” and “object number separation”, it directly leads to “number separation”, that is, the legal possessor of physical resources/values does not occupy digital resources/values.

After these “three separations”, there may be three types of infringement. a. The carrier of real-world resources/value does not have the ownership or use right to the resources/value, that is, the non owner or user can not obtain economic benefits by taking advantage of the characteristics of anonymous transaction of Metaverse economy. b. The carrier of resources/values in the real world is the legal possessor of the resources/values, but uses the characteristics of anonymous transaction of meta universe pass economy to exercise the rights beyond the scope of its rights, such as only having the right to use the resources/values, but making the behavior of transferring the resources/values. c. The carrier of resources/values in the real world is the owner of the resources/values, but he made use of the characteristics of anonymous transactions in the meta universe economy to make behaviors that derogate from
the rights and interests of the legal occupier. The existence of prior infringement at this stage directly determines the lack of legitimacy of the storage, use and circulation of digital resources/value and pass in the meta universe, which destroys the operation order of pass economy.

**Direction 2: Digital assets flow in the meta universe, and the creator of the meta universe may infringe or be infringed upon**

Creative works that can be circulated in the meta universe include both works already created in the real world and digital works directly created based on the resources of the meta universe. Although both of them are original works, the difference of possible risks between them is directly determined by the different forms of expression and the types of rights they carry.

First, for works created in the real world, we should pay attention to the circulation of which rights they carry. For tangible works, there are ownership and copyright of works on them, which can be separated, that is, the two rights can belong to different legal subjects. At this time, it should be noted that when the copyright owner transfers the ownership of the work to others, others will become the owner of the work, not the copyright owner. If the owner digitizes the work and circulates it in the form of NFT, it may infringe the copyright of the author of the work.

Second, for digital works created by creators directly using meta cosmic resources, we should pay attention to whether they infringe the copyright of existing works or whether they can be called digital works. For example, case 1: will the participants of the meta universe infringe the copyright of the existing works by using the existing works of the meta universe and circulating the created works in the form of NFT. Another example is the case: the program design of binary universe allows participants to “generate” their own digital works with one click, so can the artificial intelligence generated content that may contain the personal characteristics of participants become the creative works of participants.

**Direction 3: The circulation of the pass from the meta universe to the real world may infringe upon the rights and interests of consumers**

This is mainly aimed at the sales of pass. For example, situation 1: consumers of Metaverse pass economy cannot effectively distinguish between issuers and speculators of pass (especially NFT) due to the anonymity of pass economic transactions. The pass that consumers want to buy can be exchanged into corresponding rights and interests in the meta universe, or they can exchange corresponding rights and interests in the real world by holding the pass. However, the price of such scarce pass as NFT may be raised by speculators and paid by consumers. This is the same as the real world “scalpers” hype tickets for performances, events, amusement parks and so on. Scenario 2: participants in the meta universe can have multiple digital identities and multiple digital wallet addresses. Speculators can trade between the potential risks of the economic development of the pass in multiple digital identities and multiple digital money universe and the address of the regulatory countermeasure package to improve the price of the pass and create the illusion that the pass has high liquidity and high value. Once consumers buy the pass, they are likely to face the loss of liquidity of the pass. Become a string of worthless data obviously, at this time, the pass has become a tool for improper profit and interfered with the honest operation of the pass economy.

**No direction: Metauniverse may not be able to provide a stable operating environment for the pass economy**

At present, metauniverse is still a service/product platform with simulation, interaction and certain economic ecology provided by specific business entities. This means that the meta universe can be copied into different meta universes by other business entities and provide similar services/products. Although it can create the illusion of the prosperity and development of the meta universe to a certain extent, it increases the difficulty of discrimination for consumers. If such a similar meta
universe “runs away with money”, consumers’ digital assets in the meta universe may become worthless. In addition, the meta universe in the current stage can be connected with the real world through pass, and there can also be a certain connection between the meta universes, which can realize the circulation of pass in different spaces to a certain extent. However, at present, the circulation between meta universes is mostly realized between different meta universes platforms of the same enterprise, while the meta universes belonging to different business entities lack connectivity, which may form a new monopoly.

According to the analysis of this idea, we can know that the pass economy does not necessarily form a complete cycle or can only cycle in a limited space. Although metauniverse emphasizes co construction, CO creation, sharing and co governance, platform operators play a decisive role in the ecology of the whole metauniverse. On the one hand, the setting of the underlying code determines the basic rules of the operation of the meta universe, which should be built and shared by participants. On the other hand, the platform operator is the “law enforcer” of metauniverse. That is to say, even if there are a set of rules in the meta universe to ensure operation and governance, once individual participants have the behavior of destroying or affecting the meta universe, the platform operator can use his “law enforcer” identity to punish the participants or delete the identity information of the participants in the meta universe, and the digital property directly related to the identity information may disappear.

3.2. The virtual scene application formed by “digital identity + digital property” may violate laws and public order and good customs

In addition to its successful application in the field of games, metauniverse in the initial stage has also begun to be applied to virtual concerts, virtual education, etc. At present, what is widely known is the virtual concert held by singer Travis Scott on the game “Fortress night”. In this virtual space, Travis Scott uses his own digital image and takes the game world as his concert stage. The audience is game users from all over the world. From the background of normalized epidemic prevention and control, metauniverse virtual concert can avoid personnel gathering, break the space-time limit, real interactive experience and other advantages, but it may also become a breeding ground for violating laws, public order and good customs for example, the virtual space of metauniverse may become a stage for the comeback of bad artists. Bad performers are those who are exposed for breaking the law or violating public order and good customs. As artists have certain influence in a specific group, their behavior may be imitated by the audience or fans. In order to prevent the illegal and immoral behaviors of bad performers from being imitated or having a negative impact on the society, relevant state departments have restricted the performance behaviors of bad performers. Among them, the administrative measures for self discipline of performers in the performance industry, which was tried out on March 1, 2021, clearly stipulates the professional norms of performers, implements self-discipline disciplinary measures for performers who violate the professional norms, and can also boycott the performers in the industry. Before returning, artists with bad deeds need to apply for and give consent to their return after comprehensive evaluation by the Ethics Construction Committee, and improve their social image by “participating in industry training, vocational education, public welfare projects and other activities”.

However, the basic feature of Metaverse pass economy is the combination of digital identity and digital property. With the help of Metaverse, artists with bad deeds can come back with their own digital image and use the pass as the proof of rights and interests of tickets to earn a lot of income. This situation has to be prevented: bad performers are well known to the public because of their bad deeds. If bad performers publicize their performance activities in Metaverse through different ways, they are likely to attract users who have the psychology of watching and chasing and investors who invest in it
as a gimmick. In that case, the bad performers are not restricted by their bad deeds, but become the “business card” for them to obtain the pass income. At present, the keen participants of metauniverse are mainly teenagers born in the Internet era. The performance activities of unscrupulous artists in the real world are limited, but they can be unrestricted in the meta universe. Once such a situation occurs, it will not only produce a negative demonstration of teenagers’ behavior, but also lead to the illusion that the meta universe is an unrestricted behavior and will not bear the potential risks and regulatory countermeasures that are not conducive to the development of communication economy in the meta universe. We do not refuse to return to the performing arts circle for those who meet the conditions for comeback, but as an extension of real life to the digital world, metauniverse is also subject to the constraints and norms from the rules of the real world. If the behavior of the meta universe is not subject to this restriction, the restriction and banning of unscrupulous artists will become a dead letter. They can transfer space and change the stage to continue to collect money and endanger the society. It is no exaggeration to say that as long as we master a certain amount of personal image materials and funds and have a corresponding technical team, it is possible to hold groundless performances and other activities in the meta universe for the misdeeds artists who are serving their sentences. Therefore, we must be highly vigilant to prevent the meta universe from becoming a universe that harbors dirt.

3.3. Investing in the meta universe may let capital control the meta universe

Metauniverse focuses on the creator economy and emphasizes the co construction, sharing and co governance of participants, but this does not exclude the investment and influence of capital forces (large investment companies) on Metauniverse. It must be noted that the power of capital is to seek absolute control in the form of monopoly. A typical event in the current development of metauniverse is that Facebook renamed the company “meta” to build metauniverse. Long before Facebook invested in metauniverse, many capitals saw the potential of metauniverse as a future lifestyle of teenagers and invested in the emerging metauniverse company. The above are the two main ways for capital to invest in metauniverse: first, turn the company’s core business to metauniverse, build a metauniverse with the company as the core enterprise, and attract other companies to invest and jointly build metauniverse through their own influence, so as to expand the influence of metauniverse. Second, invest in the existing meta universe company. A typical performance is to invest in the virtual land of Metauniverse. The virtual land of Metauniverse is a digital space that can be created in Metauniverse and store different digital assets. Virtual buildings, blocks, etc. Can be built on the virtual land of Metauniverse. Other participants of Metauniverse need to pay virtual land use fees to use the virtual land for activities. For example, a virtual land of Metauniverse platform “decentraland” was sold at a price of more than 900,000 US dollars. In fact, this is not fundamentally different from the land use in the real world, because (virtual) land has high value due to its rarity.

No matter what form of meta universe capital investment, it has actually formed a situation that meta universe is controlled by capital forces. “As more and more worlds are digitized, space property rights may become the most important property rights in history, controlling not only who or what can access our space, but also what content can be displayed and even the way and place of transactions”[12]. Then, the participants newly joining the meta universe will pay for the meta universe built by investors, forming a top-down circular economy from the operator of the meta universe to the participants. Therefore, the co construction, sharing and co governance created by the meta universe has an implicit premise. It should be realized on the basis of paying consideration.

A direct manifestation of the control of meta universe digital resources by capital is the violent fluctuation of NFT price. To a certain extent, it can be considered that the pricing mechanism of NFT is controlled by capital. For example, the virtual house NFT designed by the creator can be sold at the price
of hundreds of thousands of dollars, and the first tweet of the CEO of “Twitter” that has long been published can be sold at the price of more than one million dollars after NFT, etc. At present, there is no clear pricing mechanism to regulate whether such NFT has value and how much value it has, which reflects the manipulation of NFT price by capital forces. Then, under the realistic condition that most of the digital resources of the meta universe are controlled by capital and the NFT price is manipulated by capital, a big question mark needs to be drawn to determine the extent to which the fair participation of the meta universe can be realized.

4. The regulation countermeasures of “law + technology” of pass economy in the Metaverse

The Metaverse is a self-growing ecosystem with a set of rules for self-operation and self-governance. At the same time, it needs to be sober that the meta universe is a digital public space established based on the autonomy and co-governance between participants. How sovereign states implement effective legal regulations on this kind of digital public space needs to be explored in time. The possible risks can be resolved directly through the governance rules in the meta universe, but also need to be adjusted by the legal norms in the real world. The self-regulation and legal regulation of the pass economy in the meta universe are not exclusive, but play a joint role in preventing the potential risks of the pass economy. Among them, the self-regulation rules of the pass economy in the meta universe must not violate the law, public order and good customs. Once this premise disappears or is destroyed, the law will directly regulate the pass economy in the meta universe. Based on the operation characteristics of the potential risks and Regulation Countermeasures of the development of the pass economy in the meta universe, this paper puts forward the regulation path of “law + technology”, hoping to provide reference for the orderly operation of the pass economy with digital identity and digital property as the core.

4.1. General idea of “law + technology” regulation of General Certificate economy in Metaverse

Pass economy has new characteristics in the meta universe. It not only pays attention to personal identity and property, but also emphasizes the publicity of the meta universe. Not only focus on the operation of pass economy in the meta universe, but also emphasize the interaction with the real world, which determines that the operation risk of pass economy in the meta universe may affect the circulation rules, circulation order and rights and interests protection of the meta universe and the real world at the same time. It may not be enough to deal with the possible risks only by relying on the autonomous rules in the meta universe. The possible infringement of the monopoly position of the operator of the meta universe platform on the rights and interests of the participants of the meta universe requires legal intervention.

The regulation idea of “law + technology” is adopted for the risk of pass economy in the meta universe, which is in line with the legal rules of the real world and the autonomous rules of the digital world. For the possible risks in the operation process of the pass economy in the meta universe analyzed above, it can be roughly attributed to the fact that the resources/values carried on the pass and the activities related to the pass economy have not been verified or reviewed, which occurs in the process of entering the meta universe, circulating in the meta universe and interacting with the real world after the encrypted pass of the real world resources/values. Combined with the characteristics that the pass economy in the meta universe is based on blockchain technology and maintained by decentralized autonomous organization (DAO), blockchain technology and Dao can be used to implement legal rules, break through the barriers between real world and digital world rules, and protect the rights and interests of meta universe participants and the healthy ecology of the meta universe. Therefore, it is not so much the self-regulation of the pass economic risk in the meta universe as the ability of continuous self-healing under the guidance of law in the de-
development process of the pass economy in the meta universe.

Specifically, the general idea of “law + technology” regulation of pass economy in the meta universe is reflected in the following three aspects. First, the combination of legal registration/certification and blockchain technology verification. The essence is to realize the legal rules through technology, improve the efficiency of law enforcement, and improve the credibility of legal registration/certification by using the non tamperability of blockchain technology. Second, legal procedures are combined with automatic execution of smart contracts. The operation of the pass economy in the meta universe needs the guarantee of the legal procedures in the real world to confirm the right of digital assets, transform the legal rules into the code language of smart contract, use its automatic execution attribute to supervise the pass economic activities in advance, simplify the approval process, etc. Third, the combination of rule of law and autonomy. In order to promote the sustainable operation of the Metaverse pass economy, decentralized autonomous organizations have emerged, which are jointly managed by participants. The consensus rules formulated should be based on the premise that they do not violate the law and public order and good customs. The meta universe is not idling in the digital world, but is closely connected with the real world. Only by observing the legal rules of the real world can it be recognized by the real world.

4.2. Specific countermeasures of “law + technology” regulation of general certificate economy in the Metaverse

The specific countermeasure of using “law + technology” to regulate the pass economic risk in the meta universe is to make the administrative organ become the verification node of the blockchain and open up the identity and property relationship between the meta universe and the real world. Administrative organs can better extend the law enforcement tentacles of the real world to the digital world by using technology.

**Administrative organs use blockchain technology to verify digital identity and digital property**

The essence of verifying digital identity and digital property is to use the blockchain verification mechanism to protect the rights and interests of the participants in the interaction between the meta universe and the real world. That is to verify the resources/value and owner information through the blockchain verification mechanism to ensure the right of digital identity over digital property in the pass economy. For the carrier who is difficult to determine whether the resource/value is a legal possessor and whether it disposes of the resource/value beyond its scope of rights, it can be judged by combining the information record on the blockchain with the information about the resource/value and carrier under the blockchain, that is, through the way of “identity + property”, the meta universe and the real world can be connected, and a complete credit record chain of the participants can be constructed.

Even if the existence of the property and identity recorded on the chain can be ensured through the blockchain authentication mechanism, there is no guarantee that there must be all the relationship between them. “People should know the difference and connection between themselves and the digital world in the world of algorithms, grasp their subject value in the real environment, endow human value and ethics to the reconstruction of algorithms and future media, and realize the symbiotic development of people and technology—This is the rough picture of future communication and virtual media (the universe of potential risks and regulatory. Countermeasures of communication economic development in the meta universe)[13].” Taking the administrative supervision authority as the verification node of the block chain in the meta universe, it can mutually verify the existing information about identity and property in the real world with the information in the meta universe. The resource/value verified by the administrative supervision authority and the resulting pass can obtain dual certification from technology and law, which can avoid the infringement of the
Potential risks and regulatory countermeasures of the development of pass economy in the meta universe

In addition, in order to prevent the possible dishonest behavior of the carrier, a disciplinary mechanism can be added to the blockchain verification mechanism to limit the economic activities of the above infringers in a certain period of time or field. A smart contract can also be set to freeze all or part of the digital property obtained by using the circulation of the pass for a certain period of time, and make an announcement in the meta universe. The income can be distributed after the specific obligee declares and confirms his identity.

First, the intellectual property administrative organ becomes the verification node of the blockchain to protect the rights and interests of the intellectual property rights holders. As the verification node of blockchain, the intellectual property administrative organ can protect the rights and interests of intellectual property rights holders from two aspects: first, registration protection. The intellectual property right holder can register the relevant intellectual property rights in the real world and meta universe, and the state power will confirm and protect the intellectual property rights. The smart contract can also be used to pay the royalties for the use of intellectual property rights by others to the obligee, so as to avoid the non obligee from falsely claiming various benefits continuously generated by the obligee based on intellectual property rights. The second is the protection of the autonomous association. If the relevant obligees have not registered their rights, the intellectual property administrative organ cannot directly determine the specific obligee, but can supervise the establishment of an autonomous organization for intellectual property protection. All digital assets involving intellectual property in the meta universe can automatically enter the “intellectual property protection fund pool” in the intellectual property protection autonomous organization according to the program setting. Participants in the metauniverse pay royalties or license fees directly according to different rights, usage times and other conditions set by the smart contract Relevant obligees can obtain benefits by verifying the identity of obligees. If the obligee does not verify his identity and obtain relevant income within a certain period of time, the income will directly enter the “intellectual property protection fund pool”. In addition to paying the maintenance expenses of the members of the autonomous organization, it can also be used to support the operation and development of the meta universe.

Second, creators use previous works in the meta universe to create and use artificial intelligence technology to directly generate content, which is an important content for the sustainable operation of the meta universe ecology and the healthy development of communication economy. “Metauniverse can provide users with multi-level, collaborative and open production tools, including a large number of UGC (user generated content) and PGC (platform generated content), and build a certification system and economic system based on blockchain technology, which can form linkage with the real economy to form a closed loop of virtual and real transformation to a certain extent”[14]. The above-mentioned behavior of banning participants directly considering infringement is not in line with the concept of metauniverse encouraging creation and the development of artificial intelligence. Generally speaking, meta universe participants are digital assets formed by using artificial intelligence programs and meta universe digital resources. The participants themselves do not create the formation of digital assets, and the participants usually enjoy the right to use the digital assets. The artificial intelligence generation program in the meta universe is a service provided by the operator of the meta universe platform for participants. Generally, participants cannot bring the digital asset to other meta universes. The ownership of the digital asset is jointly agreed by the owner and the operator of the platform. However, if the digital asset is obtained by the participant due to the personalized service, the participant will become the owner after purchasing the service, and the platform operator only needs to provide after-sales services such as upgrading service[15]. Specifically, a smart contract can be set up between the creator, the creator and the programmer who generates the content by artificial intelligence.
The creator can pay a certain royalty through the smart contract for the works created by the creator and the works generated by the artificial intelligence program, which can not only promote the economic development of the creator, but also protect the rights and interests of different right subjects.

Third, the behaviors of raising the pass price and infringing on the rights and interests of consumers can be regulated by “law + technology” from the following aspects. First, consumers can’t tell whether the issuer or investor of the pass is the subject of the pass transaction with them. They can use the blockchain verification mechanism to record the pass and issuer in a tamper proof way to effectively help consumers identify. Second, for the behavior of creators transferring NFT with different digital identities and digital wallet addresses, raising the price of NFT and causing consumers to misunderstand, in addition to using the blockchain verification mechanism to record the pass and issuer, it can also monitor the circulation of pass and issuer behavior, and automatically record suspicious transactions in the blockchain network. When consumers purchase the pass, the meta universe system can automatically send a risk warning to the digital wallet address with frequent transactions in a short time, and the consumer can decide whether to continue the transaction. The administrative supervision authority can monitor the suspicious transaction records recorded on the blockchain and give timely play to the function of supervising the potential risks and regulatory Countermeasures of the development of pass economy in the meta universe. In addition to the post regulatory measures, the administrative regulatory authority can supervise the digital asset pricing rules and their operation of the meta universe. At the same time, the operator of meta universe platform and Dao can negotiate to establish a pricing mechanism for digital assets such as NFT. Of course, in addition to the basic pricing, NFT often includes the subjective value of the seller and the buyer to NFT. The transactions reached by both parties based on agreement are also protected.

**The administrative organ uses blockchain technology to conduct identity review and content review**

The Metauniverse is an exploration of the infinite possibilities of future life, but the behavior and freedom of the participants should be limited and should be limited to the laws and public order and good customs in the real world. Whether it’s artists with bad deeds who use the meta universe to resurrect, or others who use the meta universe digital space to display pornography, violence and other illegal and criminal contents, the administrative organ can use blockchain and smart contract to implement the existing real-world legal rules in the meta universe. Specifically, the list of bad artists and the boycott time of the industry (1 year, 3 years, 5 years and permanent boycott) can be written into the smart contract. Once the bad artists perform in the metauniverse in their digital identity during the boycott, it will trigger the automatic prohibition of the smart contract, and the behavior of others to help the bad artists will also be prohibited. After the application of bad performers and the consent of the Ethics Construction Committee, the performers who lift the industry boycott are allowed to perform in the meta universe by adjusting the smart contract settings. As for other performances or activities that violate the law and public order and good customs, the industry association needs to conduct self-discipline review first. If the autonomous organization encounters difficult problems that are difficult to judge, it can report to the regulatory authority for content review. If it is determined that it should be prohibited, it shall be punished by restricting the perpetrator’s use of Digital Money Wallet and other activities in the meta universe.

**The administrative organ shall conduct normal supervision on the monopoly behavior of the operators of Metauniverse**

“The metauniverse may eliminate all kinds of inequalities (status, identity, gender, etc.). In human beings to the greatest extent and completely, but it still retains a fundamental inequality, which is the inequality between control and control, or active passive”[16]. Pass economy connects the real world
and the meta universe, but this does not mean that the rules in the meta universe can cross the boundary of legal rules in the real world. Technology cannot bear unlimited “bottom-up” responsibility for the stable, sustainable and healthy development of communication economy. The legal system of the real world should also provide guarantee for the meta universe blending with the real world. If the administrative organ is lazy in performing its regulatory duties and unilaterally shifts the responsibility to technical governance, then technical governance will also go to its opposite. This puts forward requirements for the regulatory authorities to normalize the supervision of new business forms. The opinions on carrying out pilot work of business environment innovation issued by the State Council clearly pointed out that. We should “deepen ‘Internet + supervision’, accelerate the construction of a national integrated online supervision platform, actively use big data, Internet of things, artificial intelligence and other technologies to empower supervision, explore the formation of a full life cycle supervision chain for market players. Implement inclusive and prudent supervision over new industries and new formats, and establish and improve the platform economic governance system promote industry associations and chambers of commerce to establish and improve self-discipline norms for industry operation and give better play to the role of social supervision.

The operator of the meta universe platform is the designer and executor of the operation rules of the meta universe. “It determines the basic structure of the meta universe, determines the value standards and behavior rules in the meta universe, and to a large extent, the laws in the meta universe are automatically executed by code rather than the legal provisions presented in the form of words”. The meta universe may become “a living space firmly controlled by power, capital and technology”[17]. Once they improperly intervene in the behavior of meta universe participants for their own interests and “punish” the participants by using their identity of “law enforcer”, the participants have nowhere to seek relief. As an autonomous organization representing the interests of participants, Dao can strive for the rights and interests of platform operators. The basic rules on the rights and interests of both parties are determined by the subjects of both parties on the basis of negotiation, and Dao will supervise the “law enforcement” behavior of meta universe platform operators. If it is difficult to coordinate the interests of Dao and platform operators, participants can sell the pass issued by platform operators to reduce property losses.

Although the meta universe gives participants autonomy over identity and property, it is by giving rules to control the participants of the meta universe. At this time, the intervention of legal rules in the real world is needed to provide rights relief channels for participants in the meta universe. On the one hand, the administrative organ can “promote the formation of a dynamic system of self-organization and evolution of the meta universe, establish a positive circular feedback relationship with the real world, and endow the meta universe with vigorous vitality”[18]. The potential risks and regulatory Countermeasures of communication economic development in the meta universe promote the formation of a legal, stable and sustainable meta universe on the other hand, as the verification node of the block chain in the meta universe, the administrative organ shall perform the responsibility of monitoring the operation of the meta universe and play a supervisory role in time when the operation rules of the operator of the meta universe platform are likely to infringe on the rights and interests of participants. This also means that higher requirements are put forward for the regulatory authorities, that is, “the regulatory authorities expand from the introduction of macro ethical governance principles to the establishment of an integrated regulatory mechanism that can deal with uncertainty and control random risks”[19]. Even if the operator of metauniverse can delete the traces of monopolistic behavior and infringement on the rights and interests of participants through technical means, the administrative organ can still use the non tamperability and traceability of blockchain technology to check and verify the above traces.

In addition, in order to prevent the operators
and investors of metauniverse from using technical means to monopolize metauniverse and raise the pass price to seek illegitimate interests, the industry can first formulate the industry standard on the design and operation of metauniverse, report it to the national network supervision department for filing, and the network supervision department will conduct normal supervision on it. We should not only avoid bad content from entering the meta universe, but also avoid bad content from entering the real world, “adhere to the unity of development and governance. Integrate online and offline, and widely gather upward and good forces”\^[20\]. When the conditions are ripe, the meta universe can be regarded as one of the public infrastructures, and the national standard is formulated, which is not only the normative standard of the meta universe, but also the industrial development standard. For example, the Seoul municipal government of South Korea announced that it would build an infrastructure “meta universe Seoul” to provide government services to citizens, so as to gradually realize the virtualization of services for citizens and enterprises\^[21\].

5. Conclusions: The “general economic law” connecting the real world and the digital world is ready to come out

Even though the meta universe is still in the early stage of development, the operation rules of the pass economy in the meta universe have taken on a new look, retaining the positive function of stabilizing the economic and social order brought by the transfer and confirmation of property rights, and changing some aspects of the real-world property rights system that contradict the security and efficiency value of digital identity and digital property. The pass economy is not only the driving force of the operation of the meta universe, but also the value channel connecting the real world and the digital world, which realizes the integration and connection between the digital rules and legal rules of the pass economy.

Human beings must rationally understand the development opportunities brought by the rise of emerging technologies and technology combination. The goal of idealizing the meta universe will indeed make people feel like “another bitcoin myth”, because “futurology and science often look alike, but the most fundamental difference between them is that science must be down-to-earth, and what futurology doesn’t need is down-to-earth. Mistaking futurology for science is the root cause of our disease illuminated by the meta universe”\^[22\]. For example, it must be explained to the participants of the meta universe that the meta universe is not a place outside the law, and the illegal and criminal acts in the meta universe must bear the legal responsibility corresponding to the real world. However, we don’t need to be alarmed. After all, we have started to hold virtual graduation ceremonies, concerts, art exhibitions and other activities in the small meta universe. Economic activities around the meta universe pass are constantly being tried and happening NFT corrects the name of digital currency to a certain extent NFT is giving full play to its unique advantages in realizing the human rights benefits of digital assets, promoting the circulation of digital assets and maintaining the order of fair digital transactions, so that there is no more tension between the development of pass and national supervision\^[23\]. In addition, using the expression of pass can alleviate the pressure on the name of digital currency that is easy to be misunderstood and loosen the binding for the innovative development of pass economy NFT is the result of the reform of the traditional real right system with ownership as the core right. It retains the dominant gene aiming at maintaining economic order and discards the inferior gene of property ownership and transaction order.

The imminent “pass economic law” should be embedded into the real world and the digital world at the same time, and can operate in perfect harmony in the two worlds. “Pass economic law” will describe such a picture to us. Digital property can correspond to real-world property, or it can be directly created in the meta universe, but it can still be exchanged in the real world. Digital identity will correspond to the real identity in the real world. Then, the meta uni-
verse is not just a cyberspace parallel to the real world. The two sides blend and influence each other. The meta universe can become a part of our real life, because “the Metaverse represents not only the future of the Internet, but also the future of mankind”.[24].

Conflict of interest
The author declares no conflict of interest.

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