Analyses and Studies
Analizy i Studia

CASP
Centre for Analyses and Studies of Taxation
Centrum Analiz i Studiów Podatkowych

No. 2(14) | December 2022 pp. 25–33 ISSN 2451-0475

Metaverse: Introducing an Increasingly Complex Global Landscape for Tax Enforcement*

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This contribution focuses on the potential impact of the metaverse on tax enforcement. The analysis, intended to prompt discussion on the topic, rather than being an in-depth study of tax regimes, is divided into the perspective of private individuals/businesses and enforcers. The impact of the metaverse on the tax landscape is read from the view of a non-decentralised metaverse in the hands of the same current industry giants. Thus, some inputs are suggested to assess the need for an agile and collaborative regulatory approach, both between businesses and administrations as well as states.

Keywords: enforcement, metaverse, tax enforcement, strategic foresight, regulatory co-operation

JEL Classification: K23

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Introduction

The term metaverse is now widely known and everyone has an opinion on its future development. We are referring to a parallel virtual world that may probably bring important innovations and potential benefits, but also new risks of regulatory enforcement – horizontally in different sectors. Among these, the tax sphere could be one of the less thought about at the moment, but it might be important to start thinking about it before it becomes another context of uncertainty for citizens, businesses, regulators, and enforcers.

The research questions of this contribution are 1) What potential effects may the development of this new digital ecosystem have on the tax sphere? and 2) Are there some pointers to guide regulatory activity?

The paper argues the tax sphere will be largely impacted by the metaverse, with a needed change of perspective both from the private sector and the public one. The paper briefly introduces the concept of the metaverse, defining how it will not be a digital world in the hands of users, but probably a digital world in the hands of the same, or similar few, operators who now govern the digital world

* The topic of the metaverse and its regulatory approach is dealt with by the author (and some concepts, as the non-decetralisation, already presented) in a forthcoming article with a focus on competition law: "(Meta)verse as the next escaper from competition public enforcement", in *Market and Competition Law Review*, VI(2).

(section § 2). Taking this type of metaverse as a point of reference, some possible impacts on the tax sphere are hypothesised. This is from a dual perspective: that of individuals/companies and that of enforcers (section 3).

The above is an exercise not carried out in depth. In fact, the idea behind the paper is not to describe in detail the possible criticalities in the world of taxation, rather, it is to urge discussion on a possible regulatory intervention and a coordinated approach to enforcement, closing in an effective way the regulatory cycle.

In conclusion, what is briefly analysed is the need for a regulatory intervention: hypothesising possible insights that regulators could build on to start thinking about metaverse regulation in the tax sphere (section 4).

It must be made explicit that neither the author, nor anyone, can understand (to date) the impact of the metaverse on tax law. Therefore, the aim can be no more than to hypothesise and stimulate a discussion on the topic for the academic, professional and, more generally, regulatory world.

Non-decentralisation of the metaverse

The metaverse is a virtual reality with subtle boundaries between the digital and physical environments: people will interact with virtual objects in real life, with real-time information and a tangible impact in the world. It could represent a world where we can fully live through our digital identity and avatar and reflects the idea of an immersive experience that creates a reflection of the real world in a digital one, thus, a combination between the virtual and real world, and the building of a new form of social interactions in the digital economic ecosystem. The concept is that, linked to web3[1] and thanks to blockchain[2], the metaverse will belong to its users, not to a single undertaking, thus, changing the way in which data is managed, taking power away from central governing structures, since it would be stored in multiple copies in a peer-to-peer computer network.[3]

Therefore, this is a virtual world governed by a decentralised community (with users that control their data and identity), which was also actually the primitive concept behind the internet. However, from a network of networks, the internet is today a network of platforms (Colen, 2019). The metaverse might also change consumers' buying relation with companies and the market as a whole. Online social networks were defined as a new social environment that people create within a virtual world (Stafford, 2013). If we interpret social networks as the place in which virtual platforms allow individuals to create their virtual public life, and companies to develop products or services (with a continuous communication between the two), the metaverse could be seen as a highly immersive social network. It has to be added that social media platforms are not designed for the direct purchase of products, but to redirect consumers towards e-commerce.

[1] Another term, or better, concept – web3 – is broadly discussed along with the metaverse. It is frequently used as a synonym of the metaverse, but it is not. It refers to a decentralised web, i.e., a different way of operating the Internet in the client/server structure (in which data is managed and stored by trusted central entities), which would be replaced by blockchain technology (a distributed ledger in a peer-to-peer network) and a set of new protocols. The metaverse and web3 are considered deeply linked and represent together the highly decentralised future of the Internet.

[2] Blockchain, made famous by the crypto world, like the Ethereum case, is based on a series of nodes. Each node keeps a copy of the distributed ledger that contains all transactions made by a given application, as in the case of a metaverse based on its technology. The registry is based on a sequence of blocks that cannot be modified. Any attempt to alter it would change the cryptographic code that binds one block with the next, effectively invalidating the entire blockchain. All this generates trust in the users since the safety of transactions is part of the whole idea behind blockchain. Ethereum's blockchain has become the foundation for dozens of primitive metaverses and the technological basis for a massive variety of applications, ranging from financial to real estate.

[3] *Bitcoin: A peer-to-peer electronic cash system*. Retrieved from: https://bitcoin.org/bitcoin.pdf

The metaverse will probably get those two above-mentioned worlds as close as possible. In social network platforms, the first step was to gather users' interest in a service able to maximise deeply the social interaction between people (Westland, 2010). This phase of the business model led to reaching the critical mass, next to a constantly increasing network effect: new users increasing the value of the service.[4] However, along with network effects, congestion is a potential outcome (Patton, 2007). Indeed, the presence of too many people in the network led, in Europe, to reduced bit rates for videos on Facebook and Instagram (Foo Yun Chee, 2020). Moreover, another shade of the congestion is the incredibly grown number of ads and companies and understanding of the business model by consumers, leading to the decrease in interest and much more difficulty in users targeting.

Given the above, the idea of Facebook might be to create a next-level social network, in which businesses will change their approach – bringing it closer to the real world.

The concepts of centralisation or decentralisation apply to both physical and virtual networks, due to 'virtual' being a reflection of the 'physical' one. The idea of a decentralised network has been considered as an alternative social, economic, and political structure (Zwitter et al., 2020). The latter is able to tackle inequality and information asymmetry (Brekke, 2020). The main differences between decentralised and centralised networks are that the first one has no single point of failure (it is not possible to attack the central node and stop the functioning of the whole structure). There is no central authority control and gatekeepers, and thus censorship is more complex due to the decentralisation of the information distribution (Schneider, 2019, 265–285). At the same time, the lack of a central authority raises coordination issues. Besides, the lack of censorship allows less possibility of supervision on the contents and requires a particularly more complex organisation and structure. To give an example of decentralisation, the idea behind bitcoin is (or at least, was) to shift control from banks and intermediaries, giving rise to independent agents that communicate in an ideal competitive market. Participants cannot unilaterally alter the rules, and there are no exit network costs associated.[5]

However, some factors are not to be underestimated. Market participants are inclined to become monopolists, or at least to outsmart their competitors (McKenzie et al., 2008). This leads back to centralisation. Indeed, in the case of harmonised rules, each partner would have an incentive to deviate from what was agreed upon (Nicolaides, 2006, 37–43). Without central administration instruments set up, hubs might conspire, individuals might deceive one another, markets could be manipulated, and there could be a massive expense to individuals entering and leaving markets. In a parity situation, each participant would be inclined to 'cheat' to increase its benefits and assume a monopolist position (Nicolaides, 2006, 37–43).

The improvement of information and communication technologies has updated our skills to pass on and exchange our information at an overall scale. However, users deal with the internet through centralised platforms and services due to the combination of market dynamics and network effects that have led to a concentration of market power in the hands of a few operators. The virtual server structure has resulted in undertakings like Amazon, Facebook, and Google to establish highly centralised virtual networks of communications or e-commerce. Those have led to a shift from the idea of the Internet as a decentralised world to the already known result of a centralised structure, governed by some leading participants.

The idea of blockchain-based applications has led to hypothetical game conventions and mar-

[4] The success of redesigning the relation between users and businesses was inevitable through ads and businesses' growing presence in the same social network, which allowed them to reach an incredible amount of profiler users to target.

[5] For instance, Hayek conceived markets as an 'information processor', a decentralised mechanism to coordinate resources and needs.

ket-driven motivations that really intensify – instead of disturbing – existing elements of capitalism and speculation (Casey et al., 2019). Indeed, blockchain is decentralised in data management or can be in data sharing, but not necessarily implies decentralisation in the organisation/infrastructure that uses it. Apparently, both the Internet and the consequent innovations are repeating patterns that result in a new set of incumbents that operate as the previous ones.

The metaverse clashing against the market (which will lead to the development of dominant participants and, therefore, centralisation) will make such a concept fail, as other decentralised-based concepts have done in the past – more famously, the Internet. However, the lack of decentralisation does not delete the potential existence of the metaverse. The latter will exist even without the planned decentralised organisational structure. In one scenario, if the infrastructure providers act solely as supervisors – it is difficult to imagine that Facebook will leave the business model characterising its social network empire. In another one, leading undertakings will act as users' exploiters in exchange for the offering of unique and essential services for everyday life, as it is today. Indeed, the metaverse existence implies that more data will be produced and collected through an entire ecosystem built as a lab for companies seeking to increase the number of ads people click through. More than 95% of Meta's revenues come from ads.[6]

Besides, in the already existing primitive metaverses, there is a continuous and incredible amount of money spent on virtual lands (Kamin, 2021). Meta could be potentially interested in becoming the landlord or the real estate agency, placing ads in front of the street or earning a share from the ads placed on the brought house, for instance, inspired by YouTube, which provides a space for YouTubers to publish videos and earns a rate on the ads placed at the beginning, middle or end of the video. Some argue that it will not be possible to have a unique metaverse dominated by, for instance, only Facebook. Even today's Internet is not centralised by an individual undertaking, but a few dominant ones.

All above might lead us to the idea of the metaverse being a centralised (or very little decentralised) world, with not many conceptual differences in its structure and goals, if compared to the Internet and social networks.

How the metaverse impacts the tax sphere

Having discussed the potential development of the metaverse, it is now crucial to analyse how it may impact the tax landscape. Several scenarios can be envisaged: think, for instance, of the use of cryptocurrency to buy virtual objects or pay for virtual services. The answer might be simple when real money is actually used and exchanged for a virtual currency. What happens, however, when it all works as a barter between services or with a currency that is purchased through the provision of services within the metaverse or as a premium? Does it become equally and easily taxable? What would be the relationship with real currencies in a context of probable high volatility and would it be so easy to tax commercial transactions?

It is well known how the development of digital markets has also had a considerable impact on the certainty of businesses and private individuals (already in many jurisdictions not in a position to manage and understand their own taxes) and of regulators and enforcers who find themselves spectators of practices and new worlds over which they are not sure they have the powers to intervene, nor the tools. The development of a parallel social reality can only take this level of uncertainty to a higher level.

This same division, the point of view of companies/individuals versus that of enforcers, is used below to analyse the potential impact of the metaverse on the sector.

[6] See Facebook Q1/2021 earnings: https://investor.fb.com/investor-events/event-details/2021/Facebook-Q1-2021-Earnings-/default.aspx

From a private perspective

Individuals, citizens as well as businesses have been taking advantage of the global development in digital assets for years now, and the arrival of blockchain-based products has further contributed to not having to go through intermediaries, speeding up transitions and reducing costs. Certainly, this also has a central impact in terms of time gained by businesses and bureaucratic burdens as well as money.

One of the digital assets related to the blockchain world are non-fungible tokens (NFTs); this is, in short, a token representing the deed and certificate of authenticity, written on a blockchain, of a single asset. Therefore, it is not fungible as it is non-duplicable and interchangeable. It can be a piece of art, a specific product of a brand (e.g., a model of a high-fashion dress), but also a piece of virtual land. In this respect, NFTs – increasingly used by companies and purchased by private individuals – can result in direct and indirect taxes with a product framing that might often be ambiguous. Think for instance of the possible framing of NFTs as certificates of ownership of an object, but also a commodity or security, or the consequences in terms of taxation of the sale of an NFT (and possible direct taxation on the purchase via virtual currencies) that includes intellectual property rights.

a) Indirect taxes

The active presence of companies and the conduct of their operations in the metaverse or between the metaverse and physical life may have to be subject to changes. For example, companies working in the fashion industry[7] normally sell their products to consumers as a physical good. At the same time, many have already approached the world of NFT, selling avatar accessories, but also high-fashion clothes as a 'piece of art', even with the option of receiving the physical good corresponding to the purchase of the virtual one. A clear contrast opens up here between the nature of goods that, as NFTs, could be considered as e-services with the application of a different taxation regime. In addition, businesses might have to rethink the way they sell in order to apply the correct taxation and make their taxation more efficient. One would, therefore, potentially have to move beyond a global online sales model often based on the presence of physical stores and the consequent application of VAT based on companies' location. Thus, shift the point of view in a context of retail shops to geolocalisation of the buyer in order to apply the specific VAT (new difficulties would also come into play, such as the use of VPNs to change the IP and thus the location displayed).

Among the difficulties that can be identified in the first instance, what taxation regime (e.g., VAT) should apply to goods? Should there be a differentiation between the physical good and the virtual one, if both versions are purchased?

Added to the above are difficulties in jurisdiction, which could also create new regulatory and tax holes, using the best taxation approach in a possible grey area as a means of competition between companies operating in the metaverse.

Finally, should the same instrument – e.g., an NFT – be taxed differently according to the service or product it encapsulates?

b) Direct taxes

Similarly, a company or individual operating in the metaverse could also easily be subject to direct taxation. The most immediate example is the purchase of virtual real estate, houses as well as land, via cryptocurrencies, as well as the potential exchange of a product or service. In such an up-to-date and simple example, several questions already arise. Should the purchased land be considered as an asset of the company or the individual in the same way as physical land? Does the purchase of the land/property already represent a taxable gain, both on the buyer and the seller?

Also, what tax regime should be applied to the land? This could be immediately answered sug-

[7] See: Giorgia Vulpiani, (2021), Non fungible tokens, smart contracts e blockchain nell'arte e nella moda: crypto art e digital fashion, in Riv. Cammino Diritto, Fasc. 11/2021.

gesting the state where the virtual land is located, but how is this taken into account? All virtual land could thus be considered to be leased in the territory where the company owning the metaverse infrastructure has its headquarters. However, would this be fair and sufficient, and, if so, should private individuals be considered to own land abroad?

In addition, how should the volatile performance of these digital assets be interpreted fiscally? We are in a context where a piece of land could go from being worth a few hundred euros to millions and vice versa; quite different from the physical reality. So one should constantly assess the increase in value at taxation levels, for example, based on the average at the end of each year.

On the taxable gains from, for example, the transaction: Should the tax be levied directly on the amount spent and by whom? By the company holding the infrastructure (e.g., Meta) or at the moment of conversion into 'real' money?

Returning to the topic already discussed in indirect taxes on the dual sale of virtual and corresponding physical goods (without considering the possible payment of royalties), one would also have to wonder how the profit to be taxed should be considered if the product is from a company resident in a non-EU state, but the company developing the NFT operates within the EU. Should double and different taxation on the two goods be considered?

In the same vein and at the level of transaction taxation, we would have potential double taxation in the transition from cryptocurrency to real currency and then in the purchase of the NFT.

Lastly, the issue of salaries for any employment relationships that are carried out entirely within the metaverse should be assessed and taken into account, together with the matter of the earning of 'monetary prizes' when playing a game or fulfilling a task: should those be considered donations, or be taxable?

From the enforcer's perspective

If the private point of view is complicated for reasons of uncertainty (but can also be exploited by companies to operate in grey areas), the enforcer's point of view is extremely more difficult since it has to intervene in an unknown context, without yet knowing the interlocutors.

Having overcome the perspective of the metaverse in the complete hands of the users (as an interpretation of decentralisation) and accepted that it will be a context similar to the present one in terms of dominant actors, there are several challenges for enforcers to start thinking about. First of all, in many states what happens and the tool by which tax information on salaries, assets, shares is acquired is communication with intermediaries (e.g., banks). In a context like the metaverse with decentralisation (in internal processes) through blockchain, this important actor is missing. Obviously, this could become the company that owns the infrastructure of the metaverse or a more general obligation for companies that provide services within it. Is this, however, an enforceable and acceptable solution for companies in their dealings with consumers? In any case, one can hardly go so far as to ask Meta, for example, to comply with the same disclosure requirements as a banking intermediary in a fast-paced digital environment.

Added to the above are other potential difficulties of interpretation and framing in which businesses and individuals' risk being able to navigate at will until there is a definition from the regulator. Think of events that originate, take place, and are totally managed within the virtual world: an exhibition, a concert, a play. How can an enforcer intervene in monitoring these revenues if everything, even the virtual currency-services exchange, remains within the metaverse? How can the tax declarations of private individuals be corroborated?

Probably the most important difficulty, however, is organisational and in coordination. As is often the case in the digital context, there is a high risk that each state will take different positions on the taxation regime (perhaps based on an adaptation of its own tax regime), providing different tools and tasks to enforcers. In the context of a borderless digital world this would represent the suicide of enforcement, which should be based on global standardisation of intervention systems and mutual cooperation in the exchange of information.

For enforcers, other hitherto important tools are also lost: namely that which concerns the identification of an individual. If companies or citizens operate with cryptocurrencies on blockchain-based transactions with pseudonyms, how will the competent authorities be able to act and monitor the flows? Will concepts such as tax domicile be surpassed?

Added to this, which is difficult to delve into at the moment, are the critical issues related to real estate and land rules, but also the risk of new offshore tax havens hidden in agreements between private parties and states.

However, the metaverse can also represent an opportunity for enforcers, if well-constructed and monitored. Monitoring systems on blockchain transactions could be designed and implemented in accordance with the infrastructure, so as to assess and observe transactions taking place on distributed ledger networks in real time; also through an algorithm trained to detect anomalies and report them to the relevant authorities. This tool would be part of a new system of coordinated controls between authorities. It would be a system characterised by internal and external controls working in concert with each other: thus, automatic control systems on flows created together with the company hosting the infrastructure, and external controls to monitor the transactions that take place between the virtual world and the physical world. In the – difficult – eventuality that more than one metaverse should exist, external controls could also be constructed as a means of communication between platforms to harmonise the data collected by the authorities in a single database.

Should regulation play a role?

The question is whether to intervene or wait for the market to develop and take subsequent actions. Regulatory reforms must consider the link between regulation and innovation: innovation impacts regulation and, equally, regulation can affect the innovation process (Blind et al., 2017). In all areas, regulatory intervention should have the result to yield benefits as far as decreasing expenses, improving efficiency and stimulating development.

Regulatory shifts could be controversial in rearranging the expenses of public policies among economic actors and adjusting set up frameworks of insurance, regardless of whether for industry or consumers. Some authors suggest that strict policies slow the rate of technology developments (Futia, 1980, 675), while others that regulation favours it and that its absence could actually have the opposite effects (Arrow et al., 1953, 265–290).

Disruptive technologies arrive more frequently and at a faster pace than the decision on whether and how to intervene, just as technology needs a particular regulatory approach to foster its development. Clearly, it is not an easy task to design a framework able to ensure the safety of users, respect for their rights and facilitate innovation, even more, considering that this is an environment at the fast pace, and traditional regulation might not be suitable.

The Big Techs are not famous for their availability to regulatory compliance: inadequate self-regulation and oversights are easy to find.[8] A fact-based approach to regulation could have worked with less fast innovation cycles and innovations developed in decades. Thus, having the possibility of prior understanding the risks and balance risk assessment, intended as scientific analysis, with risk management, intended as policy intervention.

What is then the appropriate approach? The OECD highlights five questions regulators need to ask themselves: (1) What is the current state of regulation?; 2) What is the right time to regulate?; 3) Is regulation the right approach?; 4) What is the right regulatory approach? and 5) What has changed since regulations were enacted? (OECD, 2020).

These are the questions that regulators should already now be asking (and answering) in order to approach the development of the metaverse in ad-

[8] Facebook's mis/disinformation and recent scandal on its algorithm is the latest, Keach Hagey et al., "Facebook tried to make its platform a healthier place. It got angrier instead", 24.

vance and avoid the creation of grey areas for taxation and the work of enforcers.

(1) and (3): in the current non-existent context, these two parts should probably be analyzed together and briefly. It is clear that the current state of regulation is null and void, or rather the rules of the physical world would be applied to the virtual world, not taking into account the change in social interactions that the metaverse might bring (think of something in between a social network, a virtual reality game and everyday life). The consequences, e.g., economic and social, of a lack of regulatory intervention should, therefore, be assessed. Only briefly for the purpose of this short contribution and focused on the sphere of taxes, one can hypothesise: a) the lack of powers, procedural frameworks and resources for the authorities to ensure and monitor the compliance of the actors operating in the metaverse and the observance of regulations; b) the lack of regulatory certainty, with the related interpretative complexity, on the application/enforceability of the rules present in real life to the virtual context; c) fragmented interventions of the states creating cross-border obstacles. Thus, one could hypothesise, obviously in a context to be studied in depth, the need to assess a regulatory intervention on the subject, to be added by listening to the opinion of citizens and stakeholders through appropriate consultations.

(2) and (4): it is difficult to understand the right time to regulate a reality that is still unknown and whose future structure remains unclear. Three options can most likely be hypothesised, which regulators should weigh up in terms of their pros and cons: a) not intervening at all, allowing the metaverse to develop naturally and indirectly consenting to the creation of an uncertain environment and grey areas from which private parties will take advantage in the early years. This is in order to understand better the context to be regulated before intervening; b) intervening with a regulation based on a risk pyramid (e.g., AI Proposal[9]) that guides the development of the IA in advance, however, and that can be evaluated and updated in contact with the metaverse developers in the early stages; c) close monitoring of development activities, with constant dialogue, subject to developmental permissions. This would have a major impact on the innovation process, in terms of public and private expenditure and development time. The second option should, therefore, be favoured: outlining guidelines in advance, not soft law but an actual regulation, of a more general nature and informed by principles to be safeguarded, with constant evaluation and monitoring of standards and development. This last point would also allow for constant evaluation of question (5) What has changed since regulations were enacted?

Among the possibilities, the guidelines could also be constructed already considering the perspective of enforcers and control activity more generally, to allow for the development of effective regulation and effective implementation.

Conclusion

In light of the above, the first result is that the overdiscussed decentralised future of the metaverse will never exist as conceptualised. Even if some tools (i.e., blockchain) might be decentralised, this will probably not be reflected in the infrastructure that will host the metaverse. Its users will not control the latter. It will be controlled, but by the same – or also new – few leading characters.

The paper attempts to show, briefly and only as an introduction to stimulate dialogue on the topic, the possible impacts of the metaverse on the tax sphere. The critical issues identified have an impact on both private individuals and enforcers. In the former case, there is mainly a problem of uncertainty in the regulatory environment that may, on the one hand, favour companies that are able to exploit the grey areas of regulation, and on the other hand, create confusion and fear in the implementation of practices in a potentially unclear and difficult to interpret scenarios. For en-

[9] See the collection of MP Alex Voss for the most up-to-date versions of the proposal: https://www.kaizenner.eu/post/aiact-part3

forcers, likewise, there are uncertainties about how to move in an unfamiliar environment and it is unclear – as it was/is for AI – how to intervene and apply existing rules to digital markets. For enforcers, inter alia, problems arise of a possible lack of coordination and organisation that creates fragmentation and difficulties in a harmonisation phase of enforcement. A regulatory intervention might be needed. The latter will have to be characterised by a strategic foresight approach, which includes anticipatory regulation through a regulation that represents a 'broad' scheme for companies in the sector. These can be guided, together with the provision of a system of continuous monitoring and dialogue between the public and private sectors with a constant review/update of the regulation and specific attention to the difficulties of a subsequent enforcement phase. The metaverse should thus be founded on criteria of effectiveness of regulation.

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Received: 8 November 2022
Revised: 14 November 2022
Accepted: 5 December 2022
Published: 30 December 2022

CASP
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Centre for Analyses and Studies of Taxation SGH · Al. Niepodległości 162 · Warsaw 02-554 · Poland
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