



A BIT of Protection for Non-Fungible Tokens: Digital Assets as a Catalyst for Economic Growth

Nicolette Butler | ORCID: 0000-0001-5105-6512

School of Law, University of Manchester, Manchester, United Kingdom

Corresponding author

nicolette.butler@manchester.ac.uk

Jasem Tarawneh | ORCID: 0000-0002-5826-8400

Law School, Queen Mary University of London, London, United Kingdom

Corresponding author

j.tarawneh@qmul.ac.uk

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Abstract

An inevitable consequence of technological advancement is that it triggers regulatory challenges for law and policymakers. The regulation of digital assets has generated much debate in this regard. The central objective of this article is to examine the regulation of one particular type of digital asset, NFTs, through an international investment law lens. The international investment regime offers investors high levels of protection against breaches of obligations by host states for covered investments. The aim of the article is to determine whether NFTs can be considered as covered investments for the purposes of the application of bilateral investment treaties (BITs) and treaties with investment provisions (TIPs), and further to examine whether that regime would provide an appropriate regulatory framework for investment in NFTs.

Keywords

international economic law – international investment law – digital assets – economic growth – NFTs

1 Introduction

Increased digitisation and the inevitable expansion of the digital economy brought about by the fourth industrial revolution¹ is poised to challenge the orthodoxy of international investment law. One of the foundational issues to consider is what will actually constitute an investment in the future. It has long been accepted that physical assets, as well as certain non-tangible assets (such as shares and intellectual property rights) could be considered as investments for the purposes of the application of the international investment regime. That said, the limits of the applicability of the international investment regime to non-tangible assets have not yet been tested in relation to emerging forms of digital assets. In this regard, non-fungible tokens (NFTs) may serve as a useful case study to test the boundaries of the regime's applicability. The theoretical rationale supporting the possible application of the extant international investment regime to digital assets (including NFTs) might be justified by economic growth theories, many of which assert that free and competitive markets will stimulate economic growth and generate social progress. Freedom and competition are realised by opening up domestic markets to foreign producers and foreign investors. Therefore, the international investment regime could be used as a tool to open up digital asset markets (including NFTs) with a view to stimulating economic growth. That said, it must be noted that this article is not a comprehensive analysis of the various theories of economic growth; but rather the exploration of a single specific practical application.

NFTs may be defined as tokens that represent ownership of 'unique' items.² In that vein, NFTs can be used to represent ownership of any unique asset, like a deed for an item in the digital or physical realm.³ They are facilitated by blockchain technology (a form of distributed ledger technology) which

1 Klaus Schwab (founder of the World Economic Forum) states that the fourth industrial revolution is a transformative period beginning at the turn of this century that is, 'characterized by a fusion of technologies ... blurring the lines between the physical, digital, and biological spheres.' K Schwab, 'The Fourth Industrial Revolution: What It Means, How to Respond', (World Economic Forum, 14 January, 2016) <<https://www.weforum.org/reports/the-4th-industrial-revolution-what-it-means-how-to-respond#:~:text=We%20need%20to%20shape%20a,of%20our%20heart%20and%20soul>> accessed 19 December 2023. It is expected that the fourth industrial revolution will reorganise global value chains and significantly transform the way that people work and live. The fourth industrial revolution will encompass breakthroughs in artificial intelligence, nanotechnology, biotechnology, robotics, and quantum computing, to name a few, p 7–8.

2 Ethereum Website, 'Non-fungible Tokens', <[https://ethereum.org/en/nft/#:~:text=NFTs%20are%20tokens%20that%20are,properties%20\('fungible'\)](https://ethereum.org/en/nft/#:~:text=NFTs%20are%20tokens%20that%20are,properties%20('fungible'))> accessed 19 December 2023.

3 *ibid.*

allegedly provides ‘a shared, immutable ledger that facilitates the process of recording transactions and tracking assets.’⁴ It is important to note that the definitions and intrinsic characteristics of both NFTs and blockchain are not universally accepted.⁵ This lack of clarity is problematic, given the obvious difficulties involved in the regulation of an ill-defined concept or field. The contested and somewhat controversial aspects of these conceptual technological creations and their treatment in the existing literature will be explored further below.

Despite the imprecise nature of the theoretical foundations upon which these conceptual technological creations are built, commentators are increasingly contemplating the application of international investment law to mixed or purely digital assets such as NFTs.⁶ This controversial development is complicated by the fact that these legal norms and structures were very much designed with physical investments in mind.⁷ The significance of the application of the international investment regime to digital assets should not be underestimated due to the extensive protections that the regime is capable of offering. The law of foreign investment operates to provide cross-border investors with substantial investment protections that would potentially prove to be hugely advantageous, should they be accepted as being applicable to investors with digital assets such as NFTs. It is possible to envisage a whole host of scenarios in which future foreign investment claims may be brought by NFT investors should NFTs (and digital assets more generally) be designated as covered investments, thereby attracting the often extensive protections available by virtue of the international investment regime. A recent US lawsuit by the luxury brand Hermes, illustrates the risk of investment treaty claims in relation to digital assets (especially NFTs). In Summer 2023, a US federal

4 IBM Website, ‘What Is Blockchain Technology’, <<https://www.ibm.com/uk-en/topics/what-is-blockchain>> accessed 19 December 2023.

5 See for example A Bosco, ‘Blockchain and the Uniform Electronic Transactions Act’ (2018) 71 *The Business Lawyer* 243.

6 See for example E Horváth and S Klinkmüller, ‘The Concept of “Investment” in the Digital Economy: The Case of Social Media Companies’ (2019) 20 *JWIT* 577, 580; J Chaisse and C Bauer, ‘Cybersecurity and the Protection of Digital Assets: Assessing the Role of International Investment Law and Arbitration’ (2019) 21 *Vanderbilt Journal of Entertainment and Technology Law* 549; D Collins, ‘Applying the Full Protection and Security Standard of International Investment Law to Digital Assets’ (2011) 12 *JWIT* 225; Q Zhang and A Mitchell, ‘Data Localization and the National Treatment Obligation in International Investment Treaties’ (2022) 21 *WTR* 391, and R Polanco, ‘The Impact of Digitalization on International Investment Law: Are Investment Treaties Analogue or Digital?’ (2023) 24 *German Law Journal* 574.

7 Horváth and Klinkmüller (ibid).

judge approved Hermes' request to permanently prevent an artist's sale of MetaBirkin NFTs, following a jury's verdict that such sales infringed Hermes' trademark rights.⁸ Similarly, in *Nike v Stockxx*,⁹ Stockxx were selling NFTs that infringed Nike trade marks. These lawsuits demonstrate that NFTs are being treated legally as assets which can be the object of property rights. Thus, there is a risk that in time, NFTs may give rise to many investment claims, should such assets be found to attract extensive investor protection obligations. This risk is compounded by the fact that in recent years there has been much 'hype'¹⁰ surrounding NFTs, especially in terms of their propensity to generate exorbitant profit.¹¹ However, there are inherent regulatory risks with the application of any new technology. Walch demonstrates the classic pacing problem,

The regulatory dilemmas include the classic one when approaching innovative technologies or practices: finding just the right moment to regulate, such that regulation is available immediately when people need to be protected and to have guidance in how to structure their businesses, but not so early that regulation inappropriately inhibits innovation and the possibility of new jobs or industries.¹²

Another regulatory dilemma pertains to the lack of clarity of the theoretical foundations upon which NFTs, blockchain and new technologies more generally are based. 'This problem ... occurs across fields and with any new

8 B Brittain, 'Hermes Wins Permanent Ban on "MetaBirkin" NFT Sales in US Lawsuit' (Reuters, 23 June 2023) <<https://www.reuters.com/business/hermes-wins-permanent-ban-metabirkin-nft-sales-us-lawsuit-2023-06-23/>> accessed 19 December 2023.

9 Y Choi, 'Belgium: 4 NFT Lawsuits to Follow' (15 March 2023) <<https://www.mondaq.com/trademark/1294410/4-nft-lawsuits-to-follow>> accessed 19 December 2023.

10 S Sullivan, "NFTs: Future or Fad?" Excerpts from a Practical Discussion of NFT Use Cases and Copyright Concerns Raised by NFT Offerings' (2022) 45 Columbia Journal of Law and Arts 365.

11 See for example 'Non-fungible Tokens Market Size and Forecast' (June 2022), Verified Market Research, <<https://www.verifiedmarketresearch.com/product/non-fungible-tokens-market/>> accessed 19 December 2023.

12 A Walch, 'The Path of the Blockchain Lexicon (and the Law)' (2017) 36 Review of Banking and Financial Law 714; see also M Fenwick and others, 'Regulation Tomorrow: What Happens When Technology Is Faster Than the Law?' (Tilburg University, TILEC Discussion Paper No 2016-024, 2016), <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2834531#:~:text=Inevitably%20in%20such%20a%20case,proactive%2C%20dynamic%2C%20and%20responsive> accessed 19 December 2023.

technology or practice. It takes time for people to figure out how to talk consistently about a new topic, and many times, we never do.¹³

In light of these quandaries, this article seeks to catalyse discussion and debate in terms of the application of international investment law to digital assets, and in particular NFTs in order to address emerging regulatory challenges as NFTs continue to gain prominence at a significant speed. The central objective of this article therefore is to examine the regulation of NFTs through an international investment law lens. The aim of the article is to determine whether NFTs, as digital assets, can be considered as protected or covered investments under the international investment law regime, and further to examine whether that regime would provide an appropriate regulatory framework for NFTs.

It should be noted that international investment law has not yet been confronted with any issues pertaining to the digital sector, and specifically the status of digital assets.¹⁴ This is demonstrated by the fact that there are no known investment disputes dealing with digital assets to date. The lack of disputes, the relative novelty of the topic and the vagueness of the concepts underlining it mean that the digital sector and its interaction with the international investment law regime remains largely unexplored in academic literature; herein lies part of the originality of this article. Originality is also achieved by tackling the foundational conceptual issues associated with digital assets, NFTs, blockchain technology and their interaction with the international investment regime.

At the outset, it is also important to note that this article initially proceeds on the basis of a number of key assumptions that are essentially grounded in economic growth theory. Firstly, it is assumed that international investment and increased investment liberalisation is a positive phenomenon. Extant literature asserts that international investment can lead to an increase in economic growth and GDP, as well as create employment, encourage the development of infrastructure and result in important technology transfer.¹⁵ Notwithstanding

13 *ibid.*

14 Horváth and Klinkmüller (n 6) 580.

15 On the benefits of international investment, see for example L Alfaro, 'Gains from Foreign Direct Investment: Macro and Micro Approaches' (2016) *World Bank Economic Review*; L Alfaro, 'Foreign Direct Investment: Effects, Complementarities, and Promotion' (2014) *Harvard Business School Working Paper 15-006*; R Echandi and others, 'The Impact of Investment Policy in a Changing Global Economy: A Review of the Literature' (2015) *World Bank Group Policy Research Working Paper WPS 7437*; L Colen and others, 'Foreign Direct Investment as an Engine for Economic Growth and Human Development',

this, the literature also reveals that the benefits of international investment are not necessarily evenly distributed, and there are some potential drawbacks.¹⁶ However, generally speaking, international investment is widely recognised as making a positive contribution to the investment host State.¹⁷ Precisely because it does make a positive contribution to the investment host State, it is logical that policies and regulation might be geared towards encouraging greater investment flows.

One potential means of encouraging international investment flows are international investment agreements. Although, it is important to note that there is some academic debate about the extent to which international investment agreements do increase investment flows.¹⁸ Notwithstanding this, it does

in O de Schutter and others (eds), *Foreign Direct Investment and Human Development: The Law and Economics of International Investment Agreements* (Routledge 2013) 70; P Nunnenkamp, 'Foreign Direct Investment in a Globalized World', in B Stiftung (ed), *Shaping Globalization* (E-book 2012) <https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/imported/leseprobe/1_433_Leseprobe.pdf> 14; R Lipsey, 'Home and Host Country Effects of FDI' (2022) NBER Working Paper, No 9293; P Loungani and A Razin, 'How Beneficial is Foreign Direct Investment for Developing Countries?' (2001) IMF Finance and Development, <<https://www.imf.org/external/pubs/ft/fandd/2001/06/loungani.htm>> both accessed 19 December 2023, and C Newman and others, 'Technology Transfers, Foreign Investment and Productivity Spillovers' (2015) 76 *European Economic Review* 168.

16 See for example OECD, 'Foreign Direct Investment for Development: Maximising Benefits, Minimising Costs' (2002), <<https://www.oecd.org/investment/investmentfordevelopment/1959815.pdf>> accessed 19 December 2023.

17 See for example Echandi and others (n 15), which concludes that the investment host State policy has the biggest bearing on the extent to which proven FDI benefits are realised.

18 J Pohl, 'Societal Benefits and Costs of International Investment Agreements: A Critical Review of Aspects and Available Empirical Evidence' (2018); OECD Working Papers on International Investment 2018/01. There is a wealth of literature on this issue; see for example K Sauvant and L Sachs, *The Effect of Treaties on Foreign Direct Investment: Bilateral Investment Treaties, Double Taxation Treaties, and Investment Flows* (OUP 2009); E Neumayer and L Spess, 'Do Bilateral Investment Treaties Increase Foreign Direct Investment to Developing Countries?' (May 1, 2005), *World Development*, vol 3, no 1, 31–49 <<https://ssrn.com/abstract=616242>>; BIICL, 'Risk and Return: Foreign Direct Investment and the Rule of Law' (2015), <https://binghamcentre.biicl.org/documents/49_risk_and_return_fdi_and_the_rol_compressed.pdf>; R Desbordes, 'A Granular Approach to the Effects of Bilateral Investment Treaties and Regional Trade Investment Agreements on Foreign Direct Investment' (2016), Presented at the Asian Economic Integration Report 2016 (background paper available at <[https://urldefense.com/v3/__https://aric.adb.org/pdf/events/aced2016/paper_rodolphedesbordes.pdf__;!PDiH4ENfjr2_w!GQc5ZZkDpqigkHyIp3qItccTju88GugXlcDyaFPAhBHTVCnkd-kIvEU AxIzK-j2AubllnUPVEIHdnTLSSaGYUGBUcXu\\$>](https://urldefense.com/v3/__https://aric.adb.org/pdf/events/aced2016/paper_rodolphedesbordes.pdf__;!PDiH4ENfjr2_w!GQc5ZZkDpqigkHyIp3qItccTju88GugXlcDyaFPAhBHTVCnkd-kIvEU AxIzK-j2AubllnUPVEIHdnTLSSaGYUGBUcXu$>)> all accessed 19 December 2023), and

stand to reason that stronger investor and investment protections (as enshrined in international investment agreements) will serve to attract investment.¹⁹ Therefore, investment liberalisation and strong accompanying protections could theoretically lead to more investment flows, and more of the benefits of foreign investment being realised; therefore ultimately, stronger protection could lead directly to economic growth. Given that investment protections are inherently discriminatory in nature, and that they represent significant burden on the investment host State, it is fair to assert that the provision of such investment protections should be contingent on the realisation of such positive benefits, including economic growth. The present authors therefore assert that one rationale for investment liberalisation and protection, is a significant and tangible contribution to the investment host State by means of economic growth.

With this in mind, and in order to assess whether NFTs can be considered as protected investments with a view to increasing economic growth, and further to examine whether the international investment regime provides an appropriate regulatory framework for NFTs, the article is divided into five sections. The next section will provide background information on the key terms and concepts, including the digital economy, digital assets, NFTs and it will examine their propensity to contribute to economic growth. Section 2 will also explain the operation of the international investment law regime in order to contextualise the discussion. Section 3 will consider the applicability of the current international investment law regime to digital assets generally, and NFTs specifically, examining whether they can be characterised as protected investments. Section 4 will question the suitability of the potential application of the current international investment regime to NFTs (as digital assets). The 5th and final section will offer some brief concluding remarks.

P Egger and others, 'International Investment Agreements and Foreign Direct Investment: A Survey' (2023) 46 *The World Economy* 1524.

19 Indeed, the investment treaty arbitration regime is founded on this assumption. The International Centre for the Settlement of Investment Disputes was established in 1966 with the rationale that a dedicated, neutral forum for the settlement of disputes arising during the course of foreign investment (ie specific dispute protection for foreign investors), would induce greater flows of foreign direct investment. See for example I Odumosu, 'The Antinomies of the (Continued) Relevance of ICSID to the Third World' (2007) 8 *San Diego International Law Journal* 345. See also S Subedi, *International Investment Law: Reconciling Policy and Principle* (Hart 2020) and ICSID, 'History of the ICSID Convention: Volume I' (1970), <<https://icsid.worldbank.org/sites/default/files/publications/History%20of%20the%20ICSID%20Convention/History%20of%20ICSID%20Convention%20-%20VOLUME%20I.pdf>> accessed 19 December 2023.

2 Background and Context

2.1 *The Digital Economy and Digital Assets as Drivers of Economic Growth*

In recent years, digital technologies have provided exponential opportunity to achieve economic growth. Such growth has been further fuelled by the Covid-19 pandemic, which demonstrated the importance of technology and digital platforms in almost every aspect of our lives. The development of digital technology and its contribution to economic growth is expected to continue to accelerate in the future. These developments have led to increased emphasis on the importance of the so-called *digital economy* by many states, including the UK.²⁰ Despite a wealth of literature,²¹ there is no universally accepted definition of the term *digital economy*.²² Notwithstanding this, the OCED suggests that,

The Digital Economy incorporates all economic activity reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, digital infrastructure, digital services and data. It refers to all producers and consumers, including government, that are utilising these digital inputs in their economic activities.²³

It is important to note that this definition is not utilised by all nations, and without a common benchmark, it is near impossible to assess the true size or significance of digital economies of nations in comparison to one another. Nonetheless, attempts have been made to calculate digital competitiveness; the IMD's World Digital Competitiveness Ranking 2023 places the USA at the

20 UK Government Department for Digital, Culture, Media and Sport Policy Paper, 'Digital Regulation: Driving Growth and Unlocking Innovation' (9 March 2022), <<https://www.gov.uk/government/publications/digital-regulation-driving-growth-and-unlocking-innovation/digital-regulation-driving-growth-and-unlocking-innovation#:~:text=Digital%20technologies%20are%20the%20engine,1.6%20million%20jobs%20in%202019>> accessed 19 December 2023.

21 See for example R Bukht & R Heeks, 'Defining, Conceptualising and Measuring the Digital Economy' (2017), Development Informatics Working Paper Series (No 68), <http://hummedia.manchester.ac.uk/institutes/gdi/publications/workingpapers/di/di_wp68.pdf> accessed 19 December 2023.

22 OECD, 'A Roadmap Towards a Common Framework for Measuring the Digital Economy' (2020), <<https://web.archive.org/2020-07-23/559604-roadmap-toward-a-common-framework-for-measuring-the-digital-economy.pdf>> accessed 19 December 2023.

23 *ibid*, 34.

top, followed by the Netherlands and Singapore. Meanwhile, the UK is ranked twentieth.²⁴ Despite this comparatively low ranking, at present the digital economy is credited as the ‘engine driving the UK’s economic growth,’²⁵ contributing £151 billion in output, and accounting for 1.6 million UK jobs in 2019. The importance of the digital economy is not a UK-specific phenomenon; the digital economy accounted for 9.6% of US gross domestic product (GDP) in 2019 and it supported 7.7 US million jobs, (5.0% of total US employment) in the same year. One study found that the digital economy added 1.4 million US jobs between September 2017 and September 2021, and was the main job producer in 40 states.²⁶ In actual fact, the digital economy currently represents 15.5% of global GDP,²⁷ and it is expected that this will continue to increase in the future.

The statistics demonstrate that the digital economy is indeed extremely lucrative. It therefore attracts considerable attention from State governments wishing to capitalise on its potential to accelerate national economic growth and improve standards of living. However, in endeavouring to grow the digital economy, law and policy makers also have to grapple with the regulation of new technologies and technological developments. Indeed, ‘in this rapidly evolving environment, governments are facing growing regulatory challenges in ensuring that the opportunities and benefits from digital trade can be realised and shared more inclusively.’²⁸ The legal and regulatory challenges emerging from the digital economy and rapid digitalisation are many and varied.

Digital assets are one very important aspect of the digital economy. Despite the fact that digital assets have the potential to contribute to exponential economic expansion, there is no universally agreed definition of a digital asset, let alone a comprehensive legal regulatory regime for such assets.²⁹ Part of this article’s originality is that it will contribute to clarification of such

24 IMD World Digital Competitiveness Ranking (2023), <<https://www.imd.org/centers/world-competitiveness-center/rankings/world-digital-competitiveness/>> accessed 19 December 2023.

25 UK Government Department for Digital, Culture, Media and Sport Policy Paper (n 20).

26 R Fefer, F Akhtar and D Sutherland, ‘Digital Trade and US Trade Policy’ (Congressional Research Service, 2021), <<https://crsreports.congress.gov/product/pdf/R/R44565>> accessed 19 December 2023.

27 The World Bank, IBRD, ‘Understanding Poverty: Digital Development’, <<https://www.worldbank.org/en/topic/digitaldevelopment/overview#1>> accessed 19 December 2023.

28 J López González and J Ferencz, ‘Digital Trade and Market Openness’, OECD Trade Policy Papers, no 217, (OECD Publishing, 2018) <<http://dx.doi.org/10.1787/ibd89c9a-en>> accessed 19 December 2023.

29 J Bick, ‘All Digital Assets Are Not Legally Equal’ (Law Journal Newsletters, November 2017).

regulatory issues, particularly pertaining to investment in digital assets. In order to achieve this aim, this article proceeds on the understanding that a digital asset is one that exists only in digital form, and to which is attached an ownership or usage right. These can be distinguished from physical assets which have a tangible form as well as an ownership or usage right.³⁰ Digital assets can take many different forms.³¹ Nowadays, much of the discussion on digital assets tends to focus on cryptocurrencies e.g. bitcoin, but the term technically refers to much more than such currencies.³² There is no widely agreed system of classification of digital assets, 'at present, a common system of categorisation does not exist for digital assets. This is a barrier to the regulation and management of digital assets which often exist in an international and multi-jurisdictional environment.'³³

That said, Wilshire's Digital Asset Taxonomy seems to provide a useful tri-lateral classification of digital assets. Wilshire finds three categories of digital assets; digital currencies, computation platforms and financial instruments.³⁴ Digital currencies (such as bitcoin) are assets 'whose main objective is to replicate the fundamental functions of money: store of value, medium of exchange, and unit of account.'³⁵ Computation platforms are 'assets that exist within networks that support highly expressive, Turing-complete smart contracts.'³⁶ Gaming services, NFTs, digital art and social networks are all examples of computation platforms.³⁷ Finally, financial instrument digital assets are those 'that apply the decentralized properties of digital assets to financial contracts and corporate structures that exist in traditional finance.'³⁸ Examples of financial instrument digital assets include staking instruments and security tokens (such as tokenised hedge funds and debt).³⁹

30 J Allen, M Rauchs, A Blandin and K Bear, 'Legal and Regulatory Considerations for Digital Assets' (2020) Cambridge Centre for Alternative Finance, <<https://www.jbs.cam.ac.uk/wp-content/uploads/2020/10/2020-ccaf-legal-regulatory-considerations-report.pdf>> accessed 19 December 2023.

31 *ibid.*

32 *ibid.*

33 *ibid.*

34 Wilshire, 'Digital Asset Taxonomy System' (December 2021), <https://assets-global.website-files.com/60f8038183eb84c40e8c14e9/61e9588916c9f67577825da2_Digital-Asset-Taxonomy-System-DATS.pdf> accessed 19 December 2023.

35 *ibid.*

36 *ibid.*

37 *ibid.*, noting that there are many more computation platform digital assets.

38 *ibid.*

39 *ibid.*

2.2 *NFTs and Blockchain Technology*

2.2.1 NFTs as a Vague Concept

NFTs are generally understood to be digital assets in the form of a computational platform that provide representation of ownership of a unique asset.⁴⁰ The unique asset may itself be digital (e.g. digital art or music) or indeed physical (e.g. real estate). This categorisation presupposes the fact that NFTs should be considered as assets. If they are found to constitute assets, as the real life examples of potential cases illustrates in the preceding section of this article, they might be considered as covered investments capable of attracting extensive investment protections by virtue of the international investment regime. To that end, it is necessary to examine the nature of assets, and in particular, digital assets (including NFTs).

According to a 2023 Law Commission Report, the term *digital asset* is a broad general concept, capturing a wide ‘variety of things, including digital files, digital records, email accounts, domain names, in-game digital assets, digital carbon credits, crypto-tokens and non-fungible tokens.’⁴¹ The report goes on to consider the status of digital assets when it comes to property rights, concluding that digital assets are capable of being objects of personal property rights.⁴² This has been affirmed by the common law in various cases,⁴³ with many commentators agreeing with this position.⁴⁴ Although English law traditionally recognises property rights as relating to *choses in possession* (things in possession, that is, tangible things) and *choses in action* (things in

40 Ethereum Website (n 2).

41 Law Commission Report, ‘Digital Assets: Final Report’ (2023) 1, <<https://cloud-platform-e218f50a4812967ba1215eaccede923f.s3.amazonaws.com/uploads/sites/30/2023/06/Final-digital-assets-report-FOR-WEBSITE-2.pdf>> accessed 19 December 2023.

42 For academic commentary on the status of cryptoassets as property see for example K Low and M Hara, ‘Cryptoassets and Property’ in J van Erp and K Zimmermann (eds), *Edward Elgar Research Handbook on EU Property Law* (Edward Elgar, Forthcoming), chapter available at <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4103870> accessed 19 December 2023. See also K Low and E Teo, ‘Bitcoins and Other Cryptocurrencies as Property?’ (2017) 9 *Law, Innovation and Technology* 235 and J Michels and C Millard, ‘The New Things: Property Rights in Digital Files?’ (2022) 81 *Cambridge Law Journal* 323.

43 See for example *Tulip Trading v Van Der Laan* [2023] 4 WLR 16.

44 M Bridge and others (eds), *The Law of Personal Property* (3rd edn, Sweet and Maxwell 2022), J Marinotti ‘Tangibility as Technology’ (2021) 37 *Georgia State University Law Review* 671; D Fox ‘Cryptocurrencies in the Common Law of Property’ in D Fox and S Green, (eds), *Cryptocurrencies in Public and Private Law* (OUP 2019) and L Chambers, ‘Misappropriation of Cryptocurrency: Propelling English Private Law into the Digital Age?’ (2016) 5 *Journal of International Banking and Financial Law* 263.

action, that is, intangible things such as rights).⁴⁵ This dual categorisation does not neatly accommodate some digital assets, particularly cryptocurrencies such as cryptocurrencies and NFTs. However, the common law position has moved towards an acceptance of a third miscellaneous category of property which can accommodate such digital assets.⁴⁶ The Law Commission has called for this third category to be confirmed in legislation.⁴⁷ Notwithstanding this, according to English common law, digital assets are indeed considered assets capable of attracting property rights. Interestingly, this recognition has led to digital assets being recognised as investments for the purposes of trusts.⁴⁸ Although this represents an entirely different proposition (as will be demonstrated below in section 3 of this paper) to the classification of an investment according to the international investment regime, the law of trusts provides an interesting comparison and potential precedent for the consideration of digital assets (including NFTs) as investments.

It is important to note that English law is not alone in recognising digital assets as assets that are capable of being the object of property rights. Other jurisdictions have reached a similar conclusion.⁴⁹ This is highly significant, because property rights tend to form the basis for any analysis of many commercial transactions relating to things of value. Further, property rights are particularly important, because ‘in principle, they are good against the whole world, whereas other – personal – rights are good only against someone who has assumed a relevant legal duty.’⁵⁰

45 M Bridge, *Personal Property Law* (4th edn, OUP 2015).

46 Law Commission Report, ‘Digital Assets: Summary of Final Report’ (2023) 2, <https://cloud-platform-e218f50a4812967ba1215eaecede923f.s3.amazonaws.com/uploads/sites/30/2023/06/14.294_LC_Digital-assets-summary_v5_WEB.pdf> accessed 19 December 2023.

47 *ibid.*

48 K Low, ‘Trusts of Cryptoassets’ (2020) 34 *Trust Law International* 191. See also T Chan, ‘The Nature of Property in Cryptoassets’ (2023) 43 *Legal Studies* 480.

49 Australia (*Chen v Blockchain Global Ltd* [2022] VSC 92 and *Commissioner of the Australian Federal Police v Bigatton* [2020] NSWSC 245); Canada (*Shair.Com Global Digital Services Ltd v Arnold* [2018] BCJ 311); Hong Kong (*Nico Constantijn Antonius Samara v Stive Jean-Paul Dan* [2021] HKCFI 1078); New Zealand (*Ruscoe v Cryptopia Ltd (In liquidation)* [2020] NZHC 728); Singapore (*Algorand Foundation Ltd v Three Arrows Capital Pte Ltd* (HC/CWU 246/2022) (May 2023)), and the United States (*United States v Harmon* 474 F.Supp.3d 76 (2020); *United States v Faiella* (2014) 39 F.Supp.3d 544; *SEC v Shavers* [2013] WL 4028182). For more on the proprietary status of digital assets (especially cryptocurrencies), see Fox and Green (n 44).

50 Law Commission Report (n 41).

2.2.2 Blockchain as a Facilitative Tool for NFTs

NFTs are facilitated by blockchain technology. Notably, there is no generally accepted definition of blockchain.⁵¹ Blockchain is sometimes referred to as distributed ledger technology (DLT),⁵² yet in other literature, blockchain is characterised as a form of DLT.⁵³ DLTs are ‘database[s] ... spread across multiple sites, countries or institutions, and is typically public. Records are stored one after the other in a continuous ledger, rather than stored into blocks, but they can only be added when the participants reach a quorum.’⁵⁴ As such, ‘a distributed ledger requires greater trust in the validators or operators of the ledger.’⁵⁵ Essentially, data ‘is recorded simultaneously (in real time) in all the nodes (devices) participating in the information exchange.’⁵⁶ Blockchain is a type of database that utilises DLT by putting data into blocks and chaining them to the next block, utilising a cryptographic signature. Blockchains operate like a ledger, which can be shared and verified by anyone with appropriate database access.⁵⁷ Blockchain is protected with cryptography and is allegedly ‘immutable and auditable’,⁵⁸ thus blockchain technology supposedly provides a completely ‘an uncensored truth.’⁵⁹

As we can see, the terminology associated with NFTs, including DLTs and blockchain is unsettled and imprecise. So too are the foundational characteristics of these concepts. One example of this is the notion that blockchain is ‘immutable.’⁶⁰ According to the Cambridge English Dictionary, the basic defi-

51 K Low and E Mik, ‘Pause the Blockchain Legal Revolution’ (2020) 69 ICLQ 135.

52 Walch (n 12) 714.

53 D Szostek, *Blockchain and the Law* (Nomos 2019).

54 *ibid.*

55 *ibid.*

56 *ibid.*

57 For more information on the technical aspects of blockchain technology see eg A Summers, *Understanding Blockchain and Cryptocurrencies* (CRC Press 2022); H Arslanian, *The Book of Crypto: The Complete Guide to Understanding Bitcoin, Cryptocurrencies and Digital Assets* (Springer 2022); T Gayvoronskaya and C Meinel, *Blockchain: Hype or Innovation?* (Springer 2021); C Dannen, *Introducing Ethereum and Solidity: Foundations of Cryptocurrency and Blockchain Programming for Beginners* (Apress 2017); A Narayanan and others, *Bitcoin and Cryptocurrency Technologies* (Princeton University Press 2016), and P Franco, *Understanding Bitcoin: Cryptography, Engineering and Economics* (Wiley 2015).

58 *Arizona Revised Statute* § 44-7061(E)(1) (2017), <<https://www.azleg.gov/ars/44/07061.htm>> accessed 19 December 2023.

59 *ibid.*

60 See for example World Economic Forum, ‘The Future of Financial Infrastructure’ (2016), <http://www3.weforum.org/docs/WEFThefutureof_financialinfrastructure.pdf> accessed 19 December 2023 and M Pilkington, ‘Blockchain Technology: Principles and Applications’ in F Xavier Olleros and M Zhegu (eds), *Research Handbook on Digital Transformations* (Edward Elgar 2016).

nition of immutable is 'not changing, or unable to be changed'.⁶¹ Immutability is typically associated with permanence and therefore security. Given that the supposed immutability is the central advantage of blockchain technology, if it is indeed found to be mutable after-all, this would be very problematic. At its core, blockchain is a record-keeping technology; if its ability to create and maintain permanent, unchangeable records is called into question, its utility and desirability disappears. That said, complete immutability also leads to inflexibility, which in some situations could be problematic. Whether an ex post change can be made to a ledger is an advantage or disadvantage is heavily context dependent. For example, where an unauthorised entry into the ledger (e.g. mistaken or fraudulent) is reversed or corrected, this would be legally viewed as the remedy of rectification. However, the industry may view this as censorship.⁶²

Leaving aside the discussion of whether immutability is a positive or a negative phenomenon, it is important to note that immutability may not actually be a characteristic of blockchain. Indeed, the immutability of blockchain technology is contested; this is demonstrated by the fact that Bitcoin and Ethereum (both are cryptocurrencies that are facilitated by blockchain) have been altered in the past. These cryptocurrencies are the most prominent blockchains at present, and both have been previously changed in response to cyber security threats. Bitcoin's blockchain was actually divided into two ledgers (known as forking) in 2013, with network processors (known as miners) agreeing to move from one ledger to the other in order to reunite in one single ledger.⁶³ Similarly, in 2016, blockchain records were changed when Ethereum rolled back its 'immutable' ledger to erase a currency theft that had occurred.⁶⁴ The changes that occurred in these blockchains demonstrate then that blockchain technology cannot accurately be described as immutable. Although, arguably the changes were made for legitimate reasons, they were still able to be made. Walch has cast further doubt upon the immutability of blockchain technology, questioning in particular whether all iterations of blockchain technology could be considered immutable; 'there is debate over what creates a blockchain

61 Cambridge English Dictionary, <<https://dictionary.cambridge.org/dictionary/english/immutable>> accessed 19 December 2023.

62 For an in-depth discussion of the rectification issue, see K Low, 'Confronting Cryptomania: Can Equity Tame the Blockchain?' (2020) 14 *Journal of Equity* 240.

63 A Walch, 'The Bitcoin Blockchain as Financial Market Infrastructure: A Consideration of Operational Risk' (2015) 18 *New York University Journal of Legislation and Public Policy* 866.

64 K Werbach, 'Trust, but Verify: Why the Blockchain Needs the Law' (2018) 33 *Berkeley Technology Law Journal* 487.

record's immutability, and it is therefore unclear whether all variations of the technology share this emergent property.⁶⁵ Some academics therefore refer to blockchain as hard to change, rather than impossible to change or immutable.⁶⁶

The debate surrounding immutability (particularly its desirability) is not the only contested issue with blockchain technology. Commentators have also criticised blockchain's susceptibility to hacking. Blockchain utilises asymmetric cryptography to secure an end user. Asymmetric cryptography (also known as public key cryptography) uses a public key for encryption, and a private key for decryption.⁶⁷ There is an 'indisputable, mathematical link' between these keys.⁶⁸ However, there is no such link between a private key and its end user. Hence, 'the blockchain consensus protocol cannot differentiate between an end user using his private key and his dog doing the same.'⁶⁹

Network security is also a potential issue with blockchain technology. Permissionless blockchains (open networks where anonymous users can participate without prior permission)⁷⁰ that use the proof of work consensus (where users demonstrate that a level of computational effort has been expended)⁷¹ are susceptible to a so-called 51% attack. Essentially, in theory, this means that person(s) with a 51% of the network hash rate could in rewrite earlier blocks in order to produce the longest blockchain, thereby effectively invalidating valid transactions.⁷² Whilst initially this was thought to be an unlikely theoretical possibility, in reality this type of attack has actually materialised a number of times.⁷³ For Ethereum, which uses the proof of stake (where users put something of value into the system that can be destroyed if they act dishonestly)⁷⁴ mechanism, 34% attacks are also possible. This could happen

65 Walch (n 12) 714.

66 See for example A Antonopolous, 'The Monument of Immutability, at the Silicon Valley Bitcoin Meetup', (YouTube, 12 September 2016), <<https://www.youtube.com/watch?v=hlSHF3YPijM>> accessed 19 December 2023, (where it is stated that immutability is a 'tricky concept because it doesn't really exist') as cited in *ibid*.

67 R Banoth and R Regar, 'An Introduction to Classical and Modern Cryptography' in R Banoth and R Regar (eds), *Classical and Modern Cryptography for Beginners* (Springer 2023).

68 Low (n 48).

69 *ibid*.

70 S Tanwar, *Blockchain Technology: From Theory to Practice* (Springer 2022), ch 1.

71 *ibid*.

72 Low (n 48).

73 See A Walch, 'Deconstructing "Decentralization"' in C Brummer (ed), *Cryptoassets: Legal, Regulatory, and Monetary Perspectives* (OUP 2019) and Z Voell, 'Ethereum Classic Hit by Third 51% Attack in a Month' (*CoinDesk*, 29 August 2020), <<https://www.coindesk.com/ethereum-classic-blockchain-subject-to-yet-another-51-attack>> accessed 19 December 2023.

74 Tanwar (n 70).

where two forks are simultaneously finalised, creating a permanent schism in the chain, which is theoretically possible where the attacker is willing to risk 34% of the total staked ether.⁷⁵

A third issue associated with blockchain technology is the possibility of coding errors and bugs. Commentators suggest that, '[i]ndustry average experience is about 1–25 errors per 1000 lines of code for delivered software.'⁷⁶ Such programming errors can cause bugs that lead to costly losses.⁷⁷

This subsection has demonstrated that there is much uncertainty surrounding both NFTs themselves and the underlying blockchain technology. These concepts are imprecisely defined, and as a consequence, they are poorly understood by the general population, and perhaps more importantly, law and policymakers. It stands to reason that the legislature and policymakers cannot effectively regulate concepts that are vague in nature, and issues that are not adequately understood. This particular challenge will be explored through the lens of emerging digital assets (i.e. NFTs) and international investment law, in order to conclude whether international investment protections might be available to those wishing to potentially invest in NFTs.

2.3 *International Investment Law*

According to economic growth theories, international investment liberalisation is a key component to achieving free and competitive markets, which in turn contribute to sustained economic growth and social development. International investment takes place when a national of one State (or a company registered in one State) starts a new business or takes over an existing business in a different State. Until recently, international investment has largely been concerned with investment in traditional or physical assets e.g. building or operating a factory in a foreign State. However, the status of investment in digital assets such as NFTs is increasingly being questioned.

International investment law refers to the legal norms that govern the relationship between said foreign investors and the host states that they invest in.⁷⁸ Although the domestic law of the host State clearly has the potential to affect

75 Ethereum Notes, 'HF1 Proposal', <https://notes.ethereum.org/plgVdz-ORE-fGjKo6BZ_3A#Fork-choice-by-block-slot-pair>. See also Ethereum, 'Ethereum Proof of Stake Attack and Defense' (29 June 2023) <<https://ethereum.org/en/developers/docs/consensus-mechanisms/pos/attack-and-defense/>> both accessed 19 December 2023.

76 S McConnell, *Code Complete* (Microsoft Press 2004) 521, as cited in Low (n 48).

77 MIT Technology Review by C Thompson, 'The Computer Scientist Who Hunts for Costly Bugs in Crypto Code' (2 January 2023) <<https://www.technologyreview.com/2023/01/02/1064795/certik-ronghui-gu-crypto-computer-science/>> accessed 19 December 2023.

78 S Wittich, 'International Investment Law' in K Miles (ed), *The Origins of International Investment Law Empire, Environment and the Safeguarding of Capital* (CUP 2013) 822.

the investment relationship, international investment law is concerned only with the relevant sources of international law, such as customary international law and international investment agreements (bilateral investment treaties and treaties with investment provisions i.e. BITs and TIPs). Customary international law provides the most basic protections to foreign investors, many of which are expanded upon greatly in BITs and TIPs.⁷⁹ The so-called ‘spaghetti bowl’⁸⁰ network of the 2218⁸¹ BITs and TIPs currently in force include similar, but differently worded provisions providing what have become fairly extensive protections to foreign investors. BITs were originally intended to provide a ‘transparent framework of investment protections and State obligations’⁸² as well as to offer an adaptable form of regulation. This adaptability stems from the fact that the provisions of BITs can be applied by arbitrators in a flexible manner, in order to respond to future unforeseen developments. That said, ‘in order to maintain their legitimacy, BITs must not extend too far beyond what the states envisioned at the time of signing.’⁸³ It should be noted that BITs/TIPs can also relatively easily be terminated or renegotiated, giving an added layer of flexibility to states in terms of the regulation of international investment.

The first BIT was signed in 1959, and such agreements proliferated in the 1980s and 1990s. Thus, many of the 2218 agreements have been in operation for 30–40 years. The negotiators of such agreements likely did not envision many of the issues pertaining to investment in digital assets that we are confronted with today. Answers to important questions on the regulation of investment in digital assets are therefore unlikely to be found wholesale in the current international investment agreements, most of which were negotiated prior to the development of much of the newest technology and the advancement of the digital economy that have recently been witnessed. It is for this reason that the evaluation of the applicability of the current regime of international investment law to digital assets is crucial. In most cases (i.e. most BITs), the extension of investment protection to today’s digital assets was likely not contemplated by the signatory states. Indeed, ‘the operations [of entities operating within the digital economy] do not fit neatly into existing frameworks for

79 Subedi (n 19).

80 UNCTAD, ‘Investment Provisions in Economic Agreements’ (2006) <https://unctad.org/system/files/official-document/iteit200510ch1_en.pdf accessed> accessed 19 December 2023.

81 UNCTAD, International Investment Agreements Navigator, <<https://investmentpolicy.unctad.org/international-investment-agreements>> accessed 19 December 2023.

82 See M Sornarajah, *The International Law on Foreign Investment* (CUP 2017) 205–06, as cited in Chaisse and Bauer (n 6).

83 Sornarajah (n 82) 225–26.

investment protection, which were created primarily for the brick-and-mortar investments that remain the primary subject of disputes even today.⁸⁴ Accordingly, it is crucial to determine first the applicability of the current regime to digital assets (and specifically NFTs), and further, the desirability of protecting investment in such assets through the current regime of investment protection.

It is critical to establish whether NFTs (and indeed other digital assets) will theoretically be liberalised and protected by virtue of the application of the current international investment law regime given their potential to contribute to economic growth due to the exponential expansion of the digital economy. In a nutshell, liberalisation and protection of international investment in NFTs and other digital assets by the application of the international investment regime could theoretically lead to considerable economic growth and in turn, social progress.

3 Application of International Investment Agreements

The importance of determining the applicability of an investment treaty cannot be overstated as it is 'key to the scope of application of rights and obligations of investment agreements and to the establishment of the jurisdiction of investment treaty-based arbitral tribunals.'⁸⁵ Further, 'given the potential for investment claims in the digital era, the jurisdiction and admissibility of such claims is likely to be a divisive issue.'⁸⁶ Thus, in order to determine the applicability of a BIT/TIP, generally two criteria must be met; investors must have a covered investment in the territory of the investment host State. The potential satisfaction of these two requirements by NFTs will be discussed in turn.

3.1 Covered Investments

3.1.1 International Investment Agreement Provisions: BITs and TIPs

From the outset, it is important to note that to date, there is no known investment treaty that includes reference to NFTs (or even digital assets) explicitly as covered investments.⁸⁷ Given the fact that NFTs (and digital assets more generally) are a relatively new phenomenon this is not necessarily surprising.

84 Horváth and Klinkmüller (n 6).

85 OECD, 'International Investment Law: Understanding Concepts and Tracking Innovations' (2008) <<https://www.oecd.org/investment/internationalinvestmentagreements/40471468.pdf>> accessed 19 December 2023.

86 Chaisse and Bauer (n 6).

87 An extensive search of the UNCTAD International Investment Agreements Navigator by the authors confirms this, *supra* (n 81).

Perhaps more surprisingly, there is also no universally accepted definition of the term ‘investment’.⁸⁸ Each individually negotiated investment treaty (BIT/TIP) defines ‘investment’ for the purposes of the application of that particular treaty. That said, there is considerable convergence towards a broad approach to defining the term. BITs tend to take a broad view of the definition of investment, with many referring to ‘*every kind of asset*’ followed by an illustrative but usually non-exhaustive list of assets, recognising that investment forms are constantly evolving.⁸⁹ Assets that are often listed include,

An enterprise; shares, stock, and other forms of equity participation in an enterprise; bonds, debentures, other debt instruments, and loans; futures, options, and other derivatives; turnkey, construction, management, production, concession, revenue-sharing, and other similar contracts; intellectual property rights; licenses, authorizations, permits, and similar rights conferred pursuant to domestic law; and other tangible or intangible, movable or immovable property, and related property rights, such as leases, mortgages, liens, and pledges.⁹⁰

Clearly then, under such a broad conception of the term, intangible assets can be categorised as an ‘investment’ under such a broad conception of the term. Indeed, this is evident from the very first bilateral investment treaty which was signed in 1959 by Germany and Pakistan. Article 8 states that,

(1)(a) The term – investment shall comprise capital brought into the territory of the other Party for investment in various forms in the shape of assets such as foreign exchange, goods, property rights, patents and technical knowledge. The term – investment shall also include the returns derived from and ploughed back into such – investment.⁹¹

The inclusion of intangible assets as a form of investment, even in the earliest days of the BIT regime is significant, as it shows the intention from the outset that investment should not be limited only to physical assets. This is interesting, as some commentators suggest that much of the investment regime does appear to have been established with physical assets predominantly in mind.⁹²

88 OECD, ‘International Investment Law’ (n 85).

89 *ibid.*

90 US Model BIT 2012, <<https://ustr.gov/sites/default/files/BIT%20text%20for%20ACIEP%20Meeting.pdf>> accessed 19 December 2023.

91 Germany-Pakistan BIT 1959, <<https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/1387/download>> accessed 19 December 2023.

92 Horváth and Klinkmüller (n 6).

Despite this broad approach witnessed in many BITs, other treaties do offer a more restrictive approach to the definition of investment. Article I of the Slovakia-Iran BIT for example contains a lengthy definition of investment which includes an exhaustive list of covered investments, with additional requirements including the *Salini* criteria as well as a fifth element requiring ‘the expectation of regularity of profit’.⁹³ The treaty even goes on to set out activities which will not be counted as investments,

Notwithstanding the above, for the avoidance of any doubt, “investment” shall not include:

- a) goodwill or market share;
- b) portfolio investment, which is 10% or less shareholding;
- c) claims to money deriving solely from commercial contracts for the sale of goods or services to or from the territory of a Contracting Party to the territory of another country, or to a State enterprise;
- d) futures, swaps, forwards, options, and other derivatives;
- e) assets used for non-business purposes, other than assets of research and development non-profit organizations;
- f) funds;
- g) the following loans and debt securities:
 - i. debt securities and loans with the original maturity of less than three years;
 - ii. a loan to or debt security issued by a financial institution, which is not treated as regulatory capital by the Contracting Party in whose territory the financial institution is located;
 - iii. the extension of credit in connection with a commercial transaction, such as trade financing.⁹⁴

Additionally, the treaty requires a ‘significant physical presence of the investment in the territory of the Host State’⁹⁵ if the purported investor is claiming that the investment is research and development non-profit organisation (which is included in the exhaustive list of possible covered investments). In this situation, the treaty defines such physical presence as ‘not includ[ing], for example, sales offices without other operational facilities, post office box-based

93 Slovakia-Iran BIT 2016, <<https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/3601/download>> accessed 19 December 2023.

94 *ibid.*

95 *ibid.*

businesses, internet-based business or other types of business with no or limited physical presence in the Host State.⁹⁶

Many investment treaties that are currently in force were drafted before the advent of NFTs and blockchain technology. Therefore, it is unsurprising that they are not explicitly listed as forms of investment. However, many treaties do include broad definitions of investment, often including *every kind of asset*. Additionally, many treaties do make reference to intangible assets, therefore it may be a theoretical possibility that NFTs would be classed as covered investments. What may be more problematic about NFTs is satisfying the physical presence requirement, given that they exist digitally (or as a digital representation of a physical or tangible item). The physical presence requirement is not typically explained in any great detail in investment treaties themselves. Thus, treaty wording is not necessarily particularly enlightening when it comes to determining whether NFTs could indeed be covered investments. In order to understand the interpretation of vague treaty wording, it is therefore necessary to examine previous cases to aid in understanding the concept more concretely.

3.1.2 ICSID Decided Cases

The International Centre for the Settlement of Investment Disputes (ICSID), which is the primary institution which administers investment disputes, does not define investment. Article 25(1) of the ICSID Convention states that the Centre's jurisdiction extends to a legal dispute arising from an 'investment' between a contracting State and a national of another contracting State.⁹⁷ However, nowhere does the Convention define what 'investment' actually means. Indeed, the *travaux préparatoires* of the Convention demonstrate that several definitions were written and scrapped.⁹⁸ Ultimately it was decided that such a definition was not necessary due to the 'essential requirement of the consent of the parties'.⁹⁹ Notwithstanding this, there have been a number

96 *ibid.*

97 Article 25(1) ICSID Convention 1965, <https://icsid.worldbank.org/en/Documents/icsid_docs/ICSID%20Convention%20English.pdf> accessed 19 December 2023.

98 History of the ICSID Convention Vol I-1, 116, Vol II-1, 285–86 and 492–93, and Vol II-2 843–44 and 972, <<https://icsid.worldbank.org/resources/publications/the-history-of-the-icsid-convention>> accessed 19 December 2023.

99 Report of the Executive Directors of the International Bank for Reconstruction and Development on the Convention on the Settlement of Investment Disputes between States and Nationals of Other States, 1 ICSID Reports 23 (1993), s 22.

of ‘generally expansive statements by [ICSID] tribunals¹⁰⁰ on what constitutes investment.

Although there is no doctrine of precedent applicable to investment arbitration, examining individual cases does hold value as evidence of how key terms may be interpreted by arbitrators. Thus, an examination of leading cases can provide an illuminating discussion of arbitrators’ approaches to defining investment. Various cases have been dealt with under the auspices of ICSID which have attempted to define the meaning of the term under the Convention itself. The most important case to date on the issue is undoubtedly *Salini*.¹⁰¹ According to the case, in order to be considered an investment, four criteria must be satisfied: a contribution of money or assets; an element of risk; for a certain duration; and a contribution to the host State’s economy.¹⁰² Many subsequent cases have accepted and endorsed the *Salini* criteria without hesitation.¹⁰³ Other tribunals have not accepted *Salini* and have chosen to advance alternative views of the definition of the term investment.¹⁰⁴

In terms of the four *Salini* requirements specifically, the first three criteria are not particularly problematic. However, the fourth element that requires a contribution to the host State’s economy has proven decidedly more controversial. In declaring this requirement for an investment, the *Salini* tribunal relied on the preamble to the ICSID Convention as the foundation.¹⁰⁵ In contrast, in the *Quiborax*¹⁰⁶ case, the tribunal suggests that, ‘such contribution may well be the consequence of a successful investment; it does not appear as a requirement.’¹⁰⁷ The tribunal in *Quiborax* asserted that this dropping of the fourth *Salini* criterion is an evolution executed and endorsed by several ICSID tribunals over time. In *LESI v Algeria*,¹⁰⁸ the first three *Salini* criteria were met,

100 A Mitchell and J Hepburn, ‘Don’t Fence Me in: Reforming Trade and Investment Law to Better Facilitate Cross-border Data Transfer’ (2017) 19 Yale Journal of Law and Technology 182.

101 *Salini Costruttori SpA and Italstrade SpA v Kingdom of Morocco*, ICSID Case No ARB/00/4.
102 *ibid*, Decision on Jurisdiction, 23 July 2001, <<https://www.italaw.com/sites/default/files/case-documents/ita0738.pdf>> accessed 19 December 2023.

103 See for example *Joy Mining Mach Ltd v Egypt*, ICSID Case No ARB/03/11.

104 *Quiborax v Bolivia*, ICSID Case No ARB/06/2; *Saba Fakes v Turkey*, ICSID Case No ARB/07/20; *Victor Pey Casado and President Allende Found v Chile*, ICSID Case No ARB/98/2; *LESI SpA et Astaldi SpA v Algeria*, ICSID Case No ARB/05/3.

105 ICSID Convention (n 97), as referenced by the *Salini* tribunal in its Decision on Jurisdiction (n 102), para 52.

106 See for example *Quiborax* (n 104).

107 *ibid*, Decision on Jurisdiction, 27 September 2012, <<https://www.italaw.com/sites/default/files/case-documents/italaw1098.pdf>> accessed 19 December 2023, para 220.

108 *LESI* (n 104).

but the fourth was not. They considered the fourth criteria, ‘a requirement that is any event difficult to establish and implicitly covered by the other elements reviewed.’¹⁰⁹ Similarly, in *Victor Pey Casado v Chile*¹¹⁰ a contribution to the development of the host State was deemed a potentially expected consequence of an investment, but not a requirement for its existence. In *Phoenix Action v Czech Republic*¹¹¹ the tribunal were of the opinion that what matters is a contribution to the economy of the host State, and that requirement was subsumed by the other three *Salini* criteria. Finally, *Saba Fakes*¹¹² unequivocally rejected the requirement of contributing to the development of the host State.

Commentators have sought to explain the trend towards rejection of the fourth *Salini* criteria by the fact that, ‘while the ICSID Convention attempts to foster economic development via international investment, such development is not a necessary element of investment.’¹¹³ Whereas the *Salini* tribunal itself reasoned that requiring a contribution to the host State was justified by reference to the ICSID Convention preamble, rather than specific provisions of the Convention itself.¹¹⁴ In international law, the value of preambular language, and the extent to which it is binding is not completely clear.¹¹⁵ The issue is not clarified by the Vienna Convention,¹¹⁶ which appears to take an ambivalent approach to preambles.¹¹⁷ A move away from requiring a contribution to the host State development may have also been motivated by the inherent difficulties in defining and also quantifying and attributing such a contribution.¹¹⁸ For example, would only an increase in GDP amount to a contribution to economic development of the host State? If GDP does qualify, it would be nearly impossible to measure and attribute such an increase to a specific investment, given the many other factors which can influence economic growth. Additionally, scholars questioned whether the contribution to the host State

109 *LESI* (n 104), Decision on Jurisdiction, 12 July 2006, para 72.

110 *Victor Pey Casado* (n 104).

111 *Phoenix Action Ltd v Czech Republic*, ICSID Case No ARB/06/5, Decision on Jurisdiction, 15 April 2009, para 85.

112 *Saba Fakes v Turkey* (n 104), paras 110–11.

113 A Grabowski, ‘The Definition of Investment under the ICSID Convention: A Defense of *Salini*’ (2014) 15 *Chicago Journal of International Law* 287.

114 *Salini* (n 101).

115 See for example M Hulme, ‘Preambles in Treaty Interpretation’ (2016) 164 *U Pa L Rev* 1281.

116 Vienna Convention on the Law of Treaties (1969), <https://legal.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf> accessed 19 December 2023.

117 J Klabbbers, ‘Treaties and Their Preambles’ in M Bowman and D Kritsiotis (eds), *Conceptual and Contextual Perspectives on the Modern Law of Treaties* (CUP 2018) 72–200.

118 M Hwang and J Fong, ‘Definition of “Investment”: A Voice from the Eye of the Storm’ (2011) 1 *Asian JIL* 1.

should be only economic, and whether social, political or cultural contributions should count.¹¹⁹

Whatever the exact reason(s) for any given tribunal to move away from requiring a contribution to the development of the host State, the fact that it happens is most relevant to this discussion. So too is the fact that some tribunals appear to have moved away from contribution to development and towards an examination of whether the investor has made a 'contribution ... apt to create the value that is protected under the BIT'.¹²⁰ This may not be a positive development, as it could be argued that such a contribution is even more difficult to define and measure than a contribution to the development of the host State developed by the *Salini* tribunal.

To summarise then, decided cases may not be very helpful in the quest to try to understand the definition of investment. This is because different cases have put forward different definitions of the term, and also because there is a lack of *de jure* precedent when it comes to international investment disputes. Further, there have been no decided cases involving NFTs or any kind of digital investments or digital assets.¹²¹ Although there have been no decided cases, there are a number of instances in which investors have threatened to bring arbitration claims based on digital services. For example, in April 2019, the Polish subsidiary of the music streaming company TIDAL threatened to bring an ISDS claim against Norway. The company alleged that a criminal investigation conducted by the Norwegian authorities against TIDAL's local subsidiary constituted a breach of obligations contained in the Norway-Poland BIT.¹²² In March 2020, US company Vercara (formerly Neustar), initiated ICSID proceedings against Colombia alleging that Colombian government had violated provisions contained in the US-Colombia Trade Promotion Agreement in connection with its management of the .CO Internet domain concession. The outcome of this case is still pending at ICSID.¹²³ Further, in 2022, Huawei filed an ICSID claim against Sweden under the China-Sweden BIT after the

119 C Schreuer, *The ICSID Convention: A Commentary on the Convention on the Settlement of Investment Disputes Between States and Nationals of Other States* (2nd edn, CUP 2009).

120 *Abaclat and Others v Argentine Republic*, ICSID Case No ARB/07/5, para 365.

121 Horváth and Klinkmüller (n 6).

122 C Simson, 'Streaming Service Tidal Threatens Norway with Arbitration' (LAW360, 21 August 2019) <<https://www.law360.com/articles/1191257/streaming-service-tidal-threatens-norway-with-arbitration>> accessed 19 December 2023, see also Norway-Poland BIT (1990) <<https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/2113/download>> accessed 19 December 2023.

123 *Vercara, LLC (formerly Security Services, LLC, formerly Neustar, Inc) v Republic of Colombia*, ICSID Case No ARB/20/7. See also US-Colombia TPA (2012) <<https://ustr.gov/trade-agreements/free-trade-agreements/colombia-tpa>> accessed 19 December 2023.

Swedish telecom regulator excluded Huawei (and another Chinese telecom company) from the rollout of its 5G network on the basis of national security concerns. This case is also pending.¹²⁴ The company has also threatened to bring a claim against the Czech Republic, although they have not done so to date.¹²⁵ These recent cases and threats to initiate proceedings demonstrate that increasingly investment treaty arbitration will be called upon to examine alleged breach of investor protection obligations under investment treaties. Therefore, arbitral tribunals will likely be called upon more and more to apply common treaty provisions to new and emerging technologies. Thus, the status of NFTs and other digital assets will require clarification sooner rather than later, before unintended consequences are potentially realised.

With that in mind, the previously decided cases on the broader issue of the definition of investment may aid us in understanding the types of issues that tribunals will take into account when making a decision about what will or will not constitute an investment in a given case. Applying this to NFTs then, it may (or may not) be necessary for a purported investor to demonstrate that there has been some contribution to the economic development of the host State as a result of the investment in the digital asset. Given the online and often delocalised nature of NFTs (and digital assets more generally), this may prove tricky in many instances.

3.2 *Territorial Requirement*

Aside from the necessity of establishing the existence of a covered investment, treaties also typically require that the investment be made ‘in the territory’ of the host State.¹²⁶ In relation to whether NFTs (and indeed digital assets more generally) can be protected or covered investments, this requirement is the most problematic, given the non-tangible and internet-based nature of digital assets. The territoriality requirement primarily exists because an investment is meant to benefit the host economy in a manner that trading goods and/or services would not e.g. by increasing GDP, creation of employment for host State citizens or technology transfer.¹²⁷ In practice, this requirement may be

124 *Huawei Technologies Co, Ltd v Kingdom of Sweden*, ICSID Case No ARB/22/2. See also Sweden-China BIT (1982) <<https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/6044/download>> accessed 19 December 2023.

125 C Sanderson, ‘Huawei Threatens Claim Against Czech Republic’ (*Global Arbitration Review*, 8 February 2019) <<https://globalarbitrationreview.com/article/huawei-threatens-claim-against-czech-republic>> accessed 19 December 2023.

126 C McLachlan, L Shore and M Weiniger, *International Investment Arbitration: Substantive Principles* (OUP 2017) as cited in Mitchell and Hepburn (n 100).

127 J Salacuse, *The Law of Investment Treaties* (OUP 2010) 210.

difficult to separate from the fundamental notion of an investment. Mitchell and Hepburn note that,

The territorial requirement is connected to the basic (though sometimes elusive) distinction between trade and investment. Broadly speaking, while cross-border traders operate from their home state even if selling goods or services into another state, cross-border investment by its nature involves more integration of business operations within the host state.¹²⁸

This is a key distinction, because without an *investment in the host state's territory*, the would-be claimant e.g. an individual or company offering products or services for sale via the internet to consumers in another country, risks their status being viewed as simply a trader (i.e. not a true investor), and consequently, they may find themselves ineligible to access investment treaty protections.

The territoriality requirement when it comes to investment in NFTs (and indeed digital assets more generally) is potentially much more complex than when it comes to physical assets. It is usually quite clear for example, that an entrepreneur is indeed a foreign investor when a foreign national purchases land in order to build and operate a warehouse or factory in a State other than their own. It is equally clear that a company incorporated in a different State to the one in which the company itself is operating is also a foreign investor. The non-tangible, online nature of NFTs and other digital assets can make the determination of territoriality much more complex. The '[technology] sector ... is perhaps least likely to have a physical presence in the countries in which it is able to operate, precisely because many of its products and services can be delivered electronically via the internet.'¹²⁹

Bick proposed the categorisation of digital assets based on their location; such categorisation may be helpful when it comes to the territoriality requirement. According to Bick,

The first class of digital assets is contained on a device that is in the owner's control. Usually, this device is a computer or storage device. Class-one digital assets include emails, software, and content and data stored in tangible property, typically a decedent's home computer ...

A second class of digital assets are access rights and use rights to Internet assets located in a computer or other storage device owned by a person other than the digital asset owner. Class-two digital assets

¹²⁸ Mitchell and Hepburn (n 100).

¹²⁹ *ibid.*

are emails, software, content and data stored in tangible property on a third-party's computer or other tangible property ...

Class-three digital assets are access and use rights related to internet assets, but unlike class-two digital assets, class-three digital assets do not have any physical point of presences (i.e., their existence is not dependent upon storage), hence they need not be stored anywhere. A domain name is an example of a class-three digital asset.¹³⁰

This categorisation of digital assets then appears to be essentially founded on three potentially relevant factors: location, possession and control. Applying the categorisation in order to resolve the territoriality conundrum then, class one assets could be established as investments relatively easily where an investor has some kind of physical presence or physical location in the investment host State. Such a physical presence might be established where the investor has local servers. Of the three classes, class one most overtly establishes a territorial link to the host State, as the assets are physically located within the host State and they are also under the control of the investor. Class two assets are similar to class one, in that they have some kind of physical form. However, class two can be distinguished by control; the storage or device is controlled by a third party (as opposed to it being controlled by the asset owner him/herself, as per class one). This class would include investors who grant the use of or access to third parties through licensing agreements. Unlike class one or two assets, class three assets have no physical presence anywhere. Would-be class three investors might include businesses involved in data processing or social media companies. Class two (digital assets being outside the control of the investor) and class three (where the digital assets have no physical connection) are more difficult for establishing a territorial connection to the host State. As such, it may be more difficult to satisfy the territoriality requirement.¹³¹ NFTs might theoretically be categorised as class two assets as they are facilitated by blockchain technology recorded or stored on the distributed ledger. One might argue that NFTs therefore have a physical presence on the ledger. That said, what is actually stored is not so much the asset itself, but rather, a record of ledger entries, because the asset itself is ideational in nature. Even if one accepts that the record of the asset satisfies Bick's class two categorisation, the

130 UNCTAD International Investment Agreements Navigator (n 81). See Bick (n 29), as cited in Chaisse and Bauer (n 6).

131 *ibid*; see also A Chakravarty, 'Challenges to the Assessment of Damages Claims Involving Crypto-assets in Investment Arbitration' (*Global Jurist*, 2020) vol 20, no 2, <<https://www.degruyter.com/document/doi/10.1515/gj-2019-0044/html?lang=en>> accessed 19 December 2023.

territoriality requirement for an investment may not be fulfilled because the ledger is distributed and therefore it is likely to be located in multiple locations (countries). Even if one of the locations is the host State, it is doubtful that would satisfy the territoriality requirement for an investment.

Despite the difficulties of Bick's categorisation, it might at least be theoretically helpful to understanding the threshold of the territoriality requirement of an investment. However, examining how arbitrators have tackled the issue in practice is even more useful. The problem with this is that there are no known cases dealing with NFTs or any kind of digital assets per se.¹³² However, there are a number of cases where the would-be investment involved an intangible asset. For example, the *Abaclat* case concerned sovereign bond investments (i.e. an intangible asset). The *Abaclat* panel helpfully set out a territoriality test for such assets. The panel explained that, 'determination of the place of the investment firstly depends on the nature of such investment.'¹³³ According to *Abaclat*, the criteria applied to the territoriality requirement are different in the case of an investment in intangible assets. In this case, 'the relevant criteria should be where and/or for the benefit of whom the funds [were] ultimately used, and not the place where the funds were paid out or transferred.'¹³⁴ Applying this test to NFTs (as digital assets) might be helpful as it would certainly eliminate some of the uncertainties related to the location of such assets, shifting the emphasis towards the creation of benefits in the host State. That said, this reliability of the *Abaclat* test was weakened by the dissenting opinion of Professor Abi-Saab who argued that the alleged investments 'have been sold in international financial markets, outside Argentina, with a choice of law and forum selection clauses subjecting them to laws and fora foreign to Argentina ... they were intentionally situated outside Argentina and out of reach of its laws and tribunals ... there is no legal basis for saying that they are located in Argentina.'¹³⁵

¹³² Horváth and Klinkmüller (n 6).

¹³³ *Abaclat and Others v Argentine Republic* (n 120), Decision on Jurisdiction (4 August 2011) para 374, <<https://www.italaw.com/sites/default/files/case-documents/ita0236.pdf>> accessed 19 December 2023. For other examples see L Cuatrecasas, 'International Investment Policy and the Coming Wave of Data-flow Disputes' (2022) 11 Michigan Business & Entrepreneurial Law Review 285.

¹³⁴ *ibid.*

¹³⁵ *Abaclat and Others v Argentine Republic* (n 133), Dissenting Opinion of Professor Abi-Saab, <<https://www.italaw.com/sites/default/files/case-documents/italaw4085.pdf>> accessed 19 December 2023.

In other cases, for example *SGS*,¹³⁶ the tribunal took a more literal approach to the territoriality requirement, stating that it would assist the investor's claim of territoriality if evidence of expenditures to establish the investment within the host State are demonstrated. In this way, an investor could show evidence of payment to a local (host State-based) web hosting company to host its website, or perhaps that it owns or rents property located in the host State which houses the server. Thus, it would seem that an investor may need some kind of physical presence within the territory of the host State in order to satisfy the territoriality requirement, even with digital assets. Tribunals have upheld claims where investors constitute minority shareholders in a subsidiary business, incorporated solely to conduct the investors' business within the host State as well.¹³⁷

Some types of business operations may find this requirement much more challenging to satisfy. Social media companies for example whose 'digital operations do not take place in the territory of any given State, but in cyberspace, and involve no obvious flow of capital or other resources into a host State.'¹³⁸ In reality, social media companies participate in the host state's economy 'only to the extent that their commercial clients and the users of any given platform, especially those targeted by the aforementioned commercial clients, are present in the territory of that State.'¹³⁹ Other purely online companies may have similar issues concerning the territoriality requirement; for example online cloud data storage companies that can offer storage facilities to internet users anywhere in the world. NFTs would present the same kind of challenge, without provision of an accompanying flow of capital or resource into a host State.

Some tribunals have interpreted the territoriality requirement more creatively, finding that 'the location of an investment project is where its "center of gravity" or "focal point" is found'.¹⁴⁰ Thus, services (including digital ones) might therefore be deemed to be situated in the territory of the State where they are deemed to have the most impact.¹⁴¹ In terms of NFTs, this interpreta-

136 *SGS Société Générale de Surveillance SA v Islamic Republic of Pakistan*, ICSID Case No ARB/01/13 (6 August 2003).

137 *Kristian Almás and Geir Almás v Poland*, UNCITRAL Award (27 June 2016) 201.

138 Horváth and Klinkmüller (n 6).

139 *ibid.*

140 *Alpha Projektholding GmbH v Ukraine*, ICSID Case No ARB/07/16, Award (8 November 2010) para 279, citing *SGS v Philippines* paras 101–12 and *Inmaris Perestroika Sailing Maritime Services GmbH and others v Ukraine*, ICSID Case No ARB/08/8, Decision on Jurisdiction (8 March 2010) paras 124–25.

141 Schreuer (n 119) 140.

tion of territoriality might be the easiest to satisfy, as the State where the NFT has most impact could be designated as the territory. However, this is a very low territoriality threshold to reach; such a low threshold may not be desirable, given the extensive potential protections available through the international investment regime.

In short, there is no single criteria or method applied to the territoriality requirement of intangible assets. This lack of clarity will be problematic if and when disputes arise involving NFTs and indeed other digital assets, as the outcome will be highly unpredictable.

3.3 *Can NFTs Be Protected Investments?*

Broadly speaking, under most BITs/TIPs, there are two related requirements that must be fulfilled in order for an investment to be recognised as such. The consequence of such recognition is that the investment protections contained in the treaty would be applicable to the investor's investment.

Firstly, it is important to note that the term investment is generally defined in the particular BIT/TIP that is applicable. Many treaties take a wide definition of the term, utilising the every kind of asset approach. Ultimately though, whether something is an investment will be decided according to the individual treaty text. Some ICSID tribunals have pronounced on the matter, which has resulted in the application of the widely accepted *Salini* test. Taking the four-prong *Salini* test renders matters a bit more complicated when it comes to NFTs, as it may be more difficult to satisfy some elements of the criteria, particularly the requirement to contribute to investment host State development. However, there is no doctrine of precedent in investment law, therefore the requirements laid down in *Salini* can be freely ignored. Therefore, there is likely no real impediment to digital assets (including NFTs) being recognised as investments in this regard. However, as digital assets, NFTs would need to overcome a second obstacle, namely territoriality.

When it comes to territoriality, it seems that an investor in NFTs may be able to satisfy the location requirement, depending on the accepted threshold. Although meeting this requirement may be more complex when it comes to NFTs (and other) digital assets than traditional assets/investments, it may be theoretically possible to do so on the part of an investor.

Thus, in theory it seems that NFTs might well be deemed as covered investments, according to many BITs and TIPs. The most difficult obstacle that aspiring investors will have to overcome is the territoriality requirement, which might be problematic for certain types of entities and operations. According to the current international investment regime, it is therefore likely that any

evaluation of whether the threshold for a covered investment has been met by an investor in an NFT will need to be undertaken on a case-by-case basis. This is a natural consequence of attempting to extend the application of existing BIT/TIP provisions (which were largely negotiated with traditional physical assets and bricks and mortar investments in mind) to NFTs and digital assets. Indeed this case-by-case approach has been adopted by many tribunals who have opted to view the operation of a business entity in a holistic manner when it comes to assessing whether or not a covered investment exists. For example, in *CSOB v Slovakia*,

An investment is frequently a rather complex operation, composed of various interrelated transactions, each element of which, standing alone, might not in all cases qualify as an investment. Hence, a dispute that is brought before the Centre must be deemed to arise directly out of an investment even when it is based on a transaction which, standing alone, would not qualify as an investment under the Convention, provided that the particular transaction forms an integral part of an overall operation that qualifies as an investment.¹⁴²

This approach was also adopted in *Joy Mining v Egypt*¹⁴³ the tribunal stated that ‘a given element of a complex operation should not be examined in isolation because what matters is to assess the operation globally or as a whole’. Many other tribunals also followed suit.¹⁴⁴

It seems then that arbitrators have not taken a singular approach to the issue of territoriality; rather, they appear to have taken a case-by-case evaluation which often involves examining the issue alongside the wider considerations of what constitutes a protected investment. The central problem with such a

142 *Ceskoslovenska Obchodni Banka, AS v The Slovak Republic*, ICSID Case No ARB/97/4, Decision of the Tribunal on Objections to Jurisdiction (24 May 1999) para 78.

143 *Joy Mining Machinery Limited* (n 103) para 54.

144 *ADC Affiliate Limited and others v The Republic of Hungary*, ICSID Case No ARB/03/16, Award (2 October 2006) para 331; *Inmaris Perestroika Sailing Maritime Services GmbH and others v Ukraine*, ICSID Case No ARB/08/8, Decision on Jurisdiction (8 March 2010) paras 124–25; *Saipem SpA v The People's Republic of Bangladesh*, ICSID Case No ARB/05/07, Decision on Jurisdiction and Recommendation on Provisional Measures (21 March 2007) paras 110–14; *Mamidoil Jetoil Greek Petroleum Products Societe Anonyme SA v Republic of Albania*, ICSID Case No ARB/11/24, Award (30 March 2015) para 288; *Vestey Group Ltd v Bolivarian Republic of Venezuela*, ICSID Case No ARB/06/4, Award (15 April 2016) para 196, and *Koch Minerals Sarl and Koch Nitrogen International Sarl v Bolivarian Republic of Venezuela*, ICSID Case No ARB/11/19, Award (30 October 2017) paras 6.57–6.59.

holistic approach is it is likely to turn on the views of the individual tribunal members. This undermines the principle of legal certainty to a great extent, and further, serves to elevate the parties' choice of arbitrators in any given dispute as the pivotal decision which may completely alter the outcome of the dispute. However, unless BIT/TIP provisions are reviewed and reformed to clarify these issues, in terms of practicalities, it may be the only viable approach to determining whether an NFT (and indeed other digital assets) amount to protected investments within the current framework of international investment law.

4 NFTs as Protected Investments: Desirability

The preceding discussion has highlighted the difficulties at play in evaluating with any degree of certainty whether NFTs may be categorised as an investment that attracts the protections enshrined in an international investment agreement. In this section, we move beyond analysis of the legal status quo, in order to examine the normative and policy considerations within the international investment regime specifically related to its potential application to the regulation of NFTs. In essence, we seek to demonstrate that the current international investment regime does not provide an appropriate regulatory framework for NFTs.

4.1 *Perpetuating Problems*

In recent years, the international investment regime has been at the centre of much criticism. The controversy has largely been focused on the use of Investor-State Dispute Settlement (ISDS) to resolve disputes between aggrieved investors and investment host States. Although no international investment disputes have specifically involved the status of digital assets specifically, the criticisms of the mechanism would be amplified significantly if such a digital asset dispute were to arise. The backlash against ISDS is essentially premised on rule of law concerns (e.g. consistency, predictability, correctness of outcome, independence and impartiality of arbitrators, duration and costs), as well as a purported lack of democratic legitimacy (including transparency and selection of arbitrators etc.).¹⁴⁵ Whilst many of these are valid concerns, a number of commentators seem to be increasingly unconvinced that reform

¹⁴⁵ S Schill and G Vidigal, 'Cutting the Gordian Knot: Investment Dispute Settlement à la carte' (2018) <https://uncitral.un.org/sites/uncitral.un.org/files/rta_exchange_-_investment_dispute_settlement_-_schill_and_vidigal.pdf> accessed 19 December 2023.

of the dispute resolution procedure will cure the ills associated with international investment law.¹⁴⁶ Such commentators are actually taking aim at the foundations of the law of foreign investment itself (i.e. investment agreements); ‘The central issue is whether investment treaties should exist in the form and substance they do at all.’¹⁴⁷ The present authors tend to agree with this argument. Therefore, promoting the application (and possible expansion) of the international investment regime and its composite treaties to NFTs (and other digital assets) cannot be advocated in good conscience. The only purpose served would be to perpetuate a bad regime by entrenching its reach through its application to digital assets.

Digital assets are fundamentally different to more traditional assets; their non-tangible existence is the cause of their often-flimsy link to the host State territory. This, in turn, means that the purported benefits of investment for the host State are not guaranteed (or even as likely to be realised). Thus, expanding extensive investment protections to digital assets does not make much practical sense. Although NFTs and other digital assets are likely to become progressively important for increasing digital trade and expanding the digital economy, expansive investment protections are not warranted. The international investment regime was not created, and international investment agreements were not negotiated, with NFTs and other digital assets/digital investments in mind; the regime is therefore ill-equipped to deal with the nuances and specificities associated with them. Accordingly, and in order to avoid a regulatory race to the bottom and competition amongst states through the provision of ever-increasing protections for foreign investors (including investors in digital assets such as NFTs), the present authors suggest that law and policy makers refrain from revising investment agreements to explicitly include NFTs and indeed other digital assets.

4.2 *Lack of Clarity Surrounding NFTs*

As elucidated above, there is a fundamental lack of clarity of understanding of digital assets (including NFTs) and blockchain technology. Therefore it would be virtually impossible to draft BITs and TIPs in a sufficiently clear and precise manner. Each investment agreement would likely define such terms in a different way i.e. according to the drafting states’ understanding of such concepts.

146 M Somarajah, ‘Disintegration and Change in the International Law on Foreign Investment’ (2020) 23 JIEL 413 and J Linarelli, M Salomon and M Somarajah, ‘Foreign Investment: Property, Contract and Protecting Private Power’ in J Linarelli, M Salomon and M Somarajah (eds), *The Misery of International Law: Confrontations with Injustice in the Global Economy* (OUP 2018).

147 Linarelli, Salomon and Somarajah (n 146) 173.

Such definitions will be informed by the domestic regulatory framework in those states and the level of advancement of consideration and regulation of the digital economy and digital assets. This lack of universal definition and understanding will undoubtedly lead to disputes arising between investors in digital assets (i.e. NFTs) and investment host States. Rushing to ascribe investment protections may prove costly to states who may find themselves needing to defend more investment claims and pay out exorbitant sums in compensation, if breach of investment treaty obligations is found by arbitral tribunals.

Thus, the present authors suggest that there is currently not enough of a general consensus about new technologies, including digital assets and NFTs to be able to regulate responsibly. This is a classic illustration of the pacing problem described earlier in this work. Racing ahead to include NFTs and other digital assets as protected investments by virtue of BITs and TIPs might therefore lead to the need to revise the approach taken down the line. With new and emerging technologies it may be better to wait until there is clarity about what is being regulated, and general acceptance of core terminology, as well as a better understanding of the consequences of regulation, especially with what may be at stake in terms of the international investment regime. This should of course be considered within the broader context which questions the link between investment liberalisation/protection and economic growth. States should carefully weigh up the risks associated with designating digital assets/NFTs as covered investments, especially seeing as there is no guarantee that effectively giving away sovereignty in this regard will necessarily lead to tangible economic growth.

5 Conclusion

Theories of economic growth typically assert that free and competitive markets will stimulate economic growth and generate social progress. Freedom and competition are primarily achieved by opening up domestic markets to foreign producers and foreign investors. The international investment regime, which regulates investment liberalisation and foreign investment protection is thought to be a key tool to encourage cross border investment flows (and thus more open and competitive markets). It is a widely held belief that international investment treaties serve to promote and attract foreign investments into states that sign them.¹⁴⁸ However, empirical evidence does not bear this

¹⁴⁸ See for example Subedi (n 19) 115.

out. Studies have shown that investment treaties (BITs and TIPs) do not substantially affect investment flows.¹⁴⁹ With this in mind, there is no reason to expect that the explicit application of such treaties to digital assets/investments would attract investment in such assets, and therefore boost the economic growth of a particular State. Thus, we should be cautious in assuming that protecting NFTs (and other digital assets) as investments would promote or increase investment activity and lead to economic growth. There is no evidence to suggest that would be the case.

The supposed link between economic openness and economic growth, 'in reality turns out to be complex and rather controversial.'¹⁵⁰ Foreign direct investment, 'which may also imply technology transfer or the inflow of "human capital", really contributes to long-term economic growth. On the other hand, the influence of other types of capital, such as portfolio investment and banking operations, does not contribute to growth, at least not always, and does not provide an opportunity to effectively share risks with their external trading partners.'¹⁵¹ Therefore, many commentators have come to the conclusion that the purported benefits from capital flows associated with growth and risk sharing do very much depend on the type of flows as well as 'the nature and condition of the respective institutions and the political situation in the country'.¹⁵² Thus, conventional wisdom that greater investment liberalisation (potentially achieved by extensive international investment agreements) equals economic growth is unfounded. Therefore, the rationale to include NFTs and digital assets in order to promote economic growth is flawed. Moreover, many of the other supposed benefits of investment may not be realised with NFTs (and other digital assets), as they do not have a strong territorial link with a potential host State and therefore it is very difficult to ascertain whether any tangible contribution to the economic development of the host State is realised. Further, the extension to apply the extant international investment regime to NFTs (and other digital assets) would only serve to entrench a highly

149 See also BIICL (n 18) and J Yackee, 'Do BITs Really Work? Revisiting the Empirical Link between Investment Treaties and Foreign Direct Investment' (2007) University of Wisconsin Legal Studies Research Paper No 1054 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1015083> accessed 19 December 2023.

150 E Akopova and others, 'Neoliberal Trends in the Global Economy' in: E Popkova and B Sergi (eds), *Artificial Intelligence: Anthropogenic Nature vs. Social Origin* (Springer 2020).

151 G Dell'Ariccia and others 'Reaping the Benefits of Financial Globalization' (2008) IMF Occasional Paper 264. International Monetary Fund, Washington and J Ostry and others, 'Tools for Managing Financial-stability Risks from Capital Inflows' (2012) 88 JIEL 407 as cited in Akopova and others (ibid).

152 Akopova and others (ibid).

criticised regime, which was itself created with traditional physical assets in mind, and without consideration of the specificities of NFTs and other digital assets.

Despite this lack of consideration at its inception, international investment law could theoretically be flexible (or vague) enough to be applied to NFTs (and indeed other digital assets). Notwithstanding the theoretical possibility, applying the existing provisions of international investment agreements (BITs and TIPs) to digital assets would be ill advised. An overhaul of the international investment agreement regime would be required in order to ensure their smooth application to NFTs and digital assets. However, such an overhaul may not be entirely appropriate. Simply revising investment agreements (specifically their definition of the term 'investment' to accommodate NFTs and digital assets) would serve to perpetuate the current international investment regime; this is not a desirable prospect. States, stakeholders and commentators alike are increasingly critical of the international investment framework, from overprotective provisions to generous dispute settlement options. Calls for reform have centred around investment dispute resolution, with reforms to and/or replacement of investment treaty arbitration. However, many commentators are sceptical that this will address the many ills of the investment regime. Thus, reforming international investment agreements (i.e. BITs and TIPs) specifically to include protection of digital assets (investments) would simply serve to enshrine problematic levels of investment protection and perpetuate the problems of the system. Given that the evidence is mixed (at best) as to whether international investment agreements actually serve to promote or increase international investment, introducing reformed IIAs (including NFTs and other digital assets as investment) may not be a worthwhile endeavour. Law and policy makers should not automatically assume that designating NFTs (and other digital assets) as covered investments in BITs and TIPs would promote or increase investment activity and stimulate economic growth and foster social progress.

A broader re-think of the regulation of international investment may be required. However, a significantly less radical and less complex solution might be for interested states to negotiate a multilateral treaty dealing with the status of NFTs and other digital assets as investments, in order to clarify their position. In the same vein as the Mauritius Convention,¹⁵³ states could choose to apply their network of investment agreements to digital assets or not by

153 United Nations Convention on Transparency in Treaty-based Investor-State Arbitration (2014), <<https://uncitral.un.org/en/texts/arbitration/conventions/transparency>> accessed 19 December 2023.

choosing whether to ratify the Convention. Alternatively, states could aim to negotiate a global treaty addressing the status of digital assets as investments; this may be a much more desirable proposition, given then inherent transnational nature of NFTs and other digital assets and the difficulties associated with territoriality of such assets. It should be noted though that both of these suggestions could be problematic, leading to further fragmentation of an already disjointed investment regulatory framework.

What is clear, is that in the context of investment in NFTs (and digital assets more generally), regulation and the scholarly debate are lagging behind real world developments. Commentators cannot even agree on basic definitions and characteristics of NFTs and underlying blockchain technology. This is problematic, given both the increasing importance of the digital economy and digital assets, as well as the propensity for states' vulnerability to potentially costly investment claims at the hands of would-be investors in digital assets. Indeed, Chaisse and Bauer recognise that, 'the gravity of the interpretation of the investment definition with regard to digital assets cannot be emphasized enough, as the definition is a threshold criterion and is inextricably linked to the power and force of the substantive BIT protections.'¹⁵⁴ Accordingly, law and policy makers should mobilise in this regard; the regulatory framework governing international investments in NFTs (and other digital assets) should therefore be clarified as a matter of urgency. Whether the decision is to include or exclude NFTs (and other digital assets) in the international investment regime, there is no room for uncertainty or inaction in this regard.

¹⁵⁴ Chaisse and Bauer (n 6).