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Customer value theory and cryptocurrency regulation

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Abstract

Cryptocurrencies are the product of disruptive technologies which have the potential to unsettle the global banking sector and, as a result, state-controlled economies across the world. Since this new asset class is highly volatile, conceptually distinctive, and operates on an entirely decentralised global platform, existing regulatory frameworks are unlikely to offer adequate protection against the myriad of risks that it presents, and a combination of international instruments, domestic legislation, and political commitments may be needed to safeguard traders, communities, and economies across the world. However, little is known about how and why traders perceive and engage with this new technology, and this creates additional complexity for law and policymakers seeking to identify and plug regulatory gaps. This paper presents the findings of an interdisciplinary, socio-legal study, which uses customer value theory from the marketing discipline as a framework for critically and systematically exploring the perceived value of cryptocurrencies to their users, with the aim of better conceptualising this new asset class, identifying specific risks that regulation should seek to mitigate, providing explanatory insight into the relevant issues, and thereby helping to inform the development of appropriate regulatory responses.

Keywords: “Cyberlaw”; “cryptocurrency”; “finance”; “customer value”; “regulation”

Introduction[1]

Money, as a primary medium of payment, has been with us for a long time – earliest examples date back to 1200 BCE.[2] Historically, money has evolved and taken on a variety of forms – itself spurring changes to payment systems, instruments, and institutions.[3] As a payment instrument, money does not operate in isolation. Typically, in most modern economies, payment instruments, participating institutions and processes interact to facilitate monetary circulation and sustenance of economic

[1] The authors would like to thank the peer reviewers, and also Dr Paul Johnston, for their helpful comments on earlier drafts of this paper. Any errors or omissions remain the authors’ own.
[2] Amy Tikkanen, ‘A Brief (and Fascinating) History of Money’ (*Britannica*) <https://www.britannica.com/story/a-brief-and-fascinating-history-of-money> accessed 11 July 2022.
[3] Bank for International Settlements, ‘Committee on Payment and Settlement Systems: A glossary of terms used in payments and settlement systems’ (2003) <https://www.bis.org/cpmi/glossary_030301.pdf> accessed 21 March 2016.

activity.[4] Such payment systems often experience changes caused by a myriad of external and internal factors. In turn, these changes often result in the creation of new payment processes, a constant re-writing of the rules of engagement, emergence of new institutional players with evolved functions, and ultimately, alterations to consumer preferences and behaviour.

The advent of the internet and its incursion into finance is transforming the methods and uses of financial services. Financial technologies like digital crowdfunding, cryptocurrencies, and blockchain continue to garner the attention of service users, providers, and regulators.[5] This paper focuses on cryptocurrency – an innovative technological advancement in money operated on an infusion of distributed ledger technology and encryption. Many strands in ongoing debates on cryptocurrency see it as a form of technological progress that offers a cheaper, faster, and more inclusive method of online payments to resolve systemic inefficiencies.[6] However, other strands of the debate identify its pitfalls and, accordingly, seek to map out gaps in the law and recommend regulatory fixes.[7] This paper brings these apparently contrasting perspectives together using a previously unexplored theoretical lens.

Since this new asset class is highly volatile, conceptually distinctive, and operates on an entirely decentralised global platform (i.e. one that does not require payment intermediaries), existing regulatory frameworks are unlikely to offer adequate protection, and a combination of international instruments, domestic legislation, and political commitments may be needed to safeguard traders, communities, and economies across the world. However, little is known about how and why traders (be they retail/consumer investors, institutions, or even so-called “shorters”, who seek to make a quick profit by betting against the market), perceive and engage with this new technology, and this creates additional complexity for law and policymakers seeking to identify and plug regulatory gaps. This paper presents the findings of an interdisciplinary, socio-legal study on cryptocurrency, which uses customer value theory from the marketing discipline as a framework for identifying specific issues that may require regulatory intervention.

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[4] Risto Gogoski, ‘Payment Systems in Economy – Present End Future Tendencies’ (2012) 44 Procedia – Social and Behavioural Sciences 436.

[5] Saule T Omarova, ‘Fintech and the limits of financial regulation: A systemic perspective’ in Iris H-Y Chu and Gudula Deipenbrock (eds), R*outledge Handbook of Financial Technology and Law* (OUP 2021).

[6] Alicja Mikolajewicz-Woźniak and Anna Scheibe, ‘Virtual currency schemes – the future of financial services’ (2015) 17 Foresight: the Journal of Future Studies, Strategic Thinking and Policy 365; Dong He, ‘Monetary Policy’ (2018) 55(2) Finance & Development 238.

[7] Connor Gamble, ‘The legality and regulatory challenges of decentralised crypto-currency: a western perspective’ (2017) 20 Int’l Trade & Bus L Rev 346; R Joseph Cook, ‘Bitcoins: Technological Innovation or Emerging Threat?’ (2014) 30 John Marshall Journal of Information Technology and Privacy 535.

What are cryptocurrencies and how are they currently regulated?

Cryptocurrencies first began to emerge in early 2009, after a programmer (or programmers) writing under the pseudonym "Satoshi Nakamoto",[8] published a white paper, proposing a new online currency: Bitcoin.[9] What followed, was the development of an entire ecosystem of private online payment systems – complete with products, processes and institutions – operated as an alternative to traditional fiat-based, bank-driven digital payments.[10]

From inception, there has been significant debate about how to conceptualise this emerging technology. It has been described variously as "virtual-currency", "digital-money", "crypto-assets" and "cryptocurrency." One thing however remains certain, this financial technology is quickly establishing itself as a complex and diverse digital asset class.[11] At its core, the technology is a 'cryptographically secured digital representation of value or contractual rights that uses some type of distributed ledger technology (DLT) and can be transferred, stored or traded electronically.'[12] Fundamentally, cryptocurrencies constitute a type of digital money that is not issued by a central bank, credit institution or e-money institution, and which can be used as an alternative to traditional fiat currencies.[13] They have emerged as a unique type of digital money that utilises cryptography and complicated mathematical algorithms to create secure monetary assets.[14] They have become exchangeable with traditional currencies, earned a reputation as an online payment medium, and introduced the idea of decentralisation into payment processing.[15]

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[8] Sophie Bearman, 'Bitcoin's creator may be worth US$6 billion — but people still don't know who it is' (*CNBC,* 27 October 2017) <https://www.cnbc.com/2017/10/27/bitcoins-origin-story-remains-shrouded-in-mystery-heres-why-it-matters.html> accessed 23 February 2022.

[9] Satoshi Nakamoto published an online piece containing the operational details upon which other cryptocurrencies were later developed, entitled the 'Bitcoin Paper'. See Satoshi Nakamoto, 'Bitcoin: A Peer to Peer Electronic Cash System' (2008) <https://www.ussc.gov/sites/default/files/pdf/training/annual-national-training-seminar/2018/Emerging_Tech_Bitcoin_Crypto.pdf> accessed 23 February 2022.

[10] Bank of England, 'One Bank Research Agenda: February 2015' (Bank of England 2015) <https://www.bankofengland.co.uk/-/media/boe/files/research/one-bank-research-agenda---summary.pdf?la=en&hash=B2C820FBF6A960C4A625C2DAB5B5B6CE4FEDF120> accessed 19 January 2022.

[11] There is currently a lack of consistency around the use of these terms. In this paper, the term "cryptocurrency" is used in the broadest possible sense, to include the wide range of "crypto-assets" that are emerging. For further detail on the nature and variety of crypto-assets that currently exist and a preliminary view as to how they might be categorised for regulatory purposes, see HM Treasury, Financial Conduct Authority and Bank of England, 'Cryptoassets Taskforce: final report' (October 2018) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752070/cryptoassets_taskforce_final_report_final_web.pdf> accessed 9 December 2021.

[12] Ibid 11.

[13] European Central Bank, 'Virtual currency schemes – a further analysis' (February 2015) <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf> accessed 15 March 2016.

[14] Mikolajewicz-Woźniak and Anna Scheibe, above n 6.

[15] Blockchain is a technology which performs a simple task of decentralising the trust and authentication of transactions. Trust in fiat currencies is found in the authentication of transactions by the issuer, usually the central bank, whether that is money in physical form such as banknotes or in

This emerging digital innovation seems poised to increase further in popularity, especially as a means of facilitating online payment transactions, dealings in securities, and general information management.[16] In 2017, the term "Bitcoin" took second place for the total number of associated global news stories trending worldwide.[17] Similarly, on 17 December 2020, the value of daily cryptocurrency trades stood at US$67.42 billion – by 11 January 2021 the figure had risen to US$122.95 billion, and by 23 February of that year it was US$159.89 billion.[18] On 4 December 2021 the daily volume of trades was a staggering US$173.69 billion.[19] As these figures demonstrate, cryptocurrencies have rapidly become an asset class far too significant for the policymaker to ignore.[20]

Cryptocurrencies are increasingly becoming a mainstream concern.[21] A growing body of literature now exists, mainly focused on the legal, regulatory, and economic issues posed by the emergence of this innovative financial technology. For instance, Cheah and Fry note the systemic risks of hyper-speculation and price volatility.[22] Other authors highlight the dangers of anonymity to payments, especially in facilitating financial crimes such as money laundering, terrorist financing and cybercrimes.[23] A growing cluster of this literature also focuses on public law issues such as the legal status of cryptocurrencies[24], designing appropriate regulatory frameworks[25], and conflict of laws[26]. More recently, a cluster of literature now pays

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an electronic form such as a balance held in a bank account. A distributed ledger is a way to replace these centralised trust and authority systems with a decentralised collection of data that is verified by members of a peer-to-peer network.

[16] HM Treasury, above n 11.

[17] 'Year in Search 2017: See what was trending in 2017 - Global' (*Google* 2017) <https://trends.google.com/trends/yis/2017/GLOBAL/> accessed 8 April 2021.

[18] 'Exchange Review: February 2021' (*CryptoCompare* February 2021) 6 <https://www.cryptocompare.com/media/37746440/cryptocompare_exchange_review_2021_02.pdf> accessed 8 April 2021.

[19] Ibid.

[20] At the time of writing, the value of cryptocurrencies is falling, with the price of currently Bitcoin at more than 70% below its all-time high. This illustrates the extreme volatility of the asset class. See Anthony Cuthbertson, 'Bitcoin price crashes further amid warnings it could still go "much further south"' (*The Independent,* 15 June 2022) <https://www.independent.co.uk/tech/bitcoin-price-crash-latest-crypto-b2101494.html> accessed 15 June 2022.

[21] Jason Grant, 'Cryptoassets in private law' in Iris Chiu and Gudula Deipenbrock (eds), *Routledge Handbook of Financial Technology and Law* (Routledge 2021) 309.

[22] Cheah Tuck and Fry John, 'Speculative Bubbles in Bitcoin Markets: An Empirical investigation into the fundamental value of bitcoins' (2015) 130, Economic Letters 32.

[23] Peter Twomey, 'Halting a shift in the paradigm: The need for bitcoin regulation' (2013) 16, Trinity College Law Review 67; Danny Bradbury, 'The problem with bitcoin' (2013) 11 Computer Fraud & Security 55; Eric Engle, 'Is Bitcoin Rat Poison? Cryptocurrency, Crime, and Counterfeiting (CCC)' (2016) 16 Journal of High Technology Law 340; Robby Houben, 'Bitcoin: there are two sides to every coin' (2015) 26(5) International Company and Commercial Law Review 155.

[24] Rhys Bollen, 'The legal status of online currencies: are bitcoins the future?' (2013) 24 Journal of Banking and Finance Law and Practice 272.

[25] Katharina Pistor, 'A legal theory of finance' (2013) 41 Journal of Comparative Economics 315; Douglas W Arnder, Janos Barberis and Ross P Buckley 'The Evolution of Fintech: A New Post-Crisis Paradigm' (2016) 46 Georgetown Journal of International Law, 1271.

[26] Francis Davey, 'From barter to bitcoin? Online payments and electronic money' in Lilian Edwards (ed) *Law, Policy and the Internet'* (Oxford, Hart Publishing 2019).

attention to core private law questions such as whether and how cryptocurrencies can be owned and whether such 'ownership' confers property rights.[27]

Debates around cryptocurrencies rekindle historical tensions over whether control of the payments system – including how technological change is delivered – should be at the state's command or directed by the private sector.[28] In recent years it has become reasonable to expect that incumbent drivers of the payments system (governments, central banks, and their franchised financial institutions) will continue to have a profound role in the design and delivery of changes to payment trends. However, after the 2007/08 global financial crisis, the involvement of these traditional incumbents in payments has been thrown into a crisis of legitimacy.[29] Although different forms of private money have always existed alongside government-issued currencies, shortcomings of the state-run payments system and increasing demand from private entities for advert-driven surveillance now periodically lead to increased calls for reforms, particularly in relation to state monopolies over the issuance of money.[30]

By enabling the direct transfer of "monetary units" between network participants without the intervention of traditional payment intermediaries like commercial banks or payment service institutions,[31] cryptocurrencies present an alternative vision of how online payment systems should be operated. They propose a system where online payments are peer-to-peer, undermining the state-franchise system and eliminating the role of so-called "trusted" third parties. The implication is that online payments effectively become disintermediated in the same way cash payments are.[32] In effect, the cryptocurrency protocol arguably solves internet-related problems of privacy and enhances inclusion by eliminating accessibility hurdles often introduced by third-party intermediaries. Consequently, cryptocurrency 'enables the manufacture of trust through clever code' and makes it possible to enter trusted transactions directly between two or more persons, authenticated by mass collaborations and powered by collective self-interests, rather than by large corporations motivated by profit.[33]

By introducing a privately driven alternative payment processing system with the potential to replace or challenge existing bank-driven payments, cryptocurrencies have attracted government scrutiny, not least because they do not easily fit into

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[27] David Fox and Sarah Green (eds), *Cryptocurrencies in Public and Private Law* (OUP 2019).
[28] Catherine England, 'Is Privately-provided Electronic Money Next?' (2000) 20(1) Economic Affairs 5.
[29] Beat Weber, 'Bitcoin and the legitimacy crisis of money' (2016) 40 Cambridge Journal of Economics 17.
[30] Geoffrey Hodgson, *Conceptualizing Capitalism: Institutions, Evolution, Future* (Chicago Press 2015) 1.
[31] Trust is an essential component of all payment transactions, particularly those conducted online. In most such transactions where parties have no prior dealing with each other, trusted intermediaries guarantee payments by verifying availability of funds and avoiding the "double spend" problem. See Theodosios Tsiakis and George Sthephanides, 'The concept of security and trust in electronic payments' (2005) 24 Computers & Security 10.
[32] Melanie Swan, *Blockchain: Blueprint for a New Economy*, (California, O'Reilly 2015) 34.
[33] Don Tapscott and Alex Tapscott, *Blockchain Revolution* (Penguin 2016) 4.

existing regulatory frameworks, and have the potential to undermine government control over monetary policy.[34] Furthermore, intense speculation within the cryptocurrency market,[35] which often leads to high volatility, poses significant risks for its users and the payments system.[36]

Law and policy makers across the globe are faced with the dilemma of finding an appropriate and consistent regulatory balance which, on one hand, safeguards public interests[37] while, on the other, fosters the benefits entrenched within this emerging technology, if any.[38] This task is further complicated by the fact that cryptocurrencies sit on the intersection between finance and technology, and therefore introduce a great deal of novelty to payments.[39]

The indication from the academic literature on cryptocurrencies in the UK is that, despite their meteoric rise in facilitating online payments, they remain statutorily unrecognised as money under English Law.[40] As at the time of writing, there is no statutory instrument which holistically and directly addresses cryptocurrencies in the UK.[41] This ensuing legal vacuum means that existing legal rules dealing with digital payments may potentially be inapplicable and/or insufficient. It also means that bank-related regulation and common law rules such as those on deposit-insurance or monitoring of the illicit global flow of money may also be inapplicable. The consequences of such a legal vacuum are potentially serious, for both persons and entities operating within this emerging ecosystem, including digital-wallet service providers. A legal vacuum will invariably leave users and sector participants with little or no legal certainty. An absence of direct legislation also potentially leaves cryptocurrency payments mainly outside the payments system.

Globally, different regulatory approaches are being proposed to tackle the issues. Some countries have favoured outright bans on cryptocurrencies.[42] Yet, others have opted for fragmented governance approaches to bring some aspects of

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[34] Cook, above n 7.
[35] Eng-Tuck Cheah and John Fry, 'Speculative bubbles in Bitcoin markets? An empirical investigation into the fundamental value of Bitcoin' (2015) 130 Economic Letters 32.
[36] John L Douglas, 'New Wine into Old Bottles: Fintech Meets the Bank Regulatory World' (2016) 20 North Carolina Banking Institute 17.
[37] Evan L Greebel and Others, 'Recent key Bitcoin and virtual currency regulatory and law enforcement developments' (2015) 16(1) Journal of Investment Compliance 13.
[38] Ben Broadbent, 'Central banks and digital currencies' (Bank for International Settlements 2016) <https://www.bis.org/review/r160303e.pdf> accessed on 9 December 2021.
[39] Marshall Van Alstyne, 'Why Bitcoin Has Value' (2014) 57(5) Communications of the ACM 30.
[40] Neoclassical economic theories of money acknowledge anything to be money which serves three functions: as a medium of exchange, unit of account, and store of value. Cryptocurrencies have been proven to serve all three functions and are resultantly recognised as money notwithstanding their electronic and intangible form. See Lawrence H White, 'The Market for Cryptocurrencies' (2015) 35 Cato Journal 383.
[41] Rosario Girasa, *Regulation of Cryptocurrencies and Blockchain Technology* (Palgrave 2018) 152.
[42] Evander Smart, 'Top 10 Countries in Which Bitcoin is Banned' (*CCN,* 27 May 2015) <https://www.cryptocoinsnews.com/top-10-countries-bitcoin-banned> accessed 17 February 2022.

cryptocurrency within the purview of law. For instance, Japan[43] and Finland[44] specifically deal with cryptocurrency as a "commodity" for securities and investment purposes but do not provide legal cover for exchange operations. In the US[45] and the UK,[46] government agencies provide frameworks for taxing incomes from cryptocurrency dealings but have stopped short of attempting to create a holistic regulatory regime. The almost sporadic, piecemeal, and sometimes "knee-jerk" global approaches to regulating cryptocurrencies have arguably not helped in providing a coherent global and domestic governance framework.

Despite the absence of appropriate governance frameworks, involvement in this space has not slowed. An entire ecosystem of corporate entities and services have emerged, many of which expose users and consumers to risks of fraud, theft, extortion, and cybercrimes.[47] Additionally, proponents of cryptocurrency continue to argue that it offers wider social and economic benefits.[48] For instance, by disintermediating payments, cryptocurrency is said to: (1) remove the high transactional costs often associated with third-party servicing; (2) extend participation in the payments sector to the unbanked and underbanked, thereby fostering financial inclusion; (3) potentially reduce inflation by eliminating government manipulation of financial markets;[49] and (4) improve the overall efficiency of payments.[50] Furthermore, given the increase of surveillance following incidents of terrorism, coupled with the trend towards a cashless-society, the anonymity and security of cryptocurrencies arguably offer better privacy protection for online payment transactions.[51]

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[43] 'Japan reckons with bitcoin' (*Nikkei Asia*, 17 March 2016) <https://asia.nikkei.com/Economy/Japan-reckons-with-bitcoin> accessed 17 February 2020.
[44] 'Bitcoin Judged Commodity in Finland after Failing Money Test' (Bloomberg, 20 January 2014) <https://www.bloomberg.com/news/articles/2014-01-19/bitcoin-becomes-commodity-in-finland-after-failing-currency-test> accessed 29 December 2016.
[45] 'IRS Virtual Currency Guidance: Virtual Currency is Treated as Property for U.S Federal Tax Purposes: General Rules for Property Transactions Apply' (25 March 2014) <https://www.irs.gov/uac/newsroom/irs-virtual-currency-guidance> accessed 29 December 2016.
[46] HMRC, 'Tax on Cryptoassets' (December 2018) <https://www.gov.uk/government/publications/tax-on-cryptoassets> accessed 23 February 2022.
[47] Stephen T Middlebrook and Sarah Jane Hughes, 'Regulating Cryptocurrencies in the United States: Current Issues and Future Directions' (2014) 40 William Mitchell Law Review 813.
[48] European Banking Authority, 'EBA Opinion on "virtual currencies"' (4 July 2014) <https://www.eba.europa.eu/documents/10180/657547/EBA-Op-2014-08+Opinion+on+Virtual+Currencies.pdf> accessed 12 March 2015.
[49] Ferdinando M Ametrano, 'Hayek Money: The Cryptocurrency Price Stability Solution' (2016) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2425270> accessed 28 December 2016.
[50] Don Tapscott, 'How the blockchain is changing money and business' (TED June 2016). Video file retrieved from <https://www.ted.com/talks/don_tapscott_how_the_blockchain_is_changing_money_and_business> accessed 16 August 2016.
[51] Kingsley Udofa, 'Evaluating the viability of cryptocurrencies within the legal regime for electronic payments in English Law' (2020) <https://etheses.whiterose.ac.uk/28416/1/Kingsley%20Udofa%27s%20PhD%20Thesis%20Final.pdf > accessed 19 February 2022.

Accordingly, given the apparent benefits of cryptocurrencies, their rising popularity, and the risks that they pose to individual traders, national economies, and societies more broadly, it is inevitable that legislators across the world will increasingly look to regulate in this area. Similarly, the global, decentralised nature of this new asset class means that purely domestic approaches are unlikely to be sufficient. On the contrary, global co-operation, comprising a mix of international treaties, national legislation and political commitments are likely to be needed to develop a comprehensive and effective regulatory and governance framework. The scale of this challenge should not be underestimated, not least because reaching global consensus on the nature and extent of regulation required is typically complicated by different perceptions of and attitudes towards risk in different jurisdictions.[52]

To attempt to present a comprehensive roadmap for the global regulation of cryptocurrency would therefore be at best premature. However, what is clear at this early stage, is that in seeking to inform any such interventions, law and policy makers across the world are likely to refer to – amongst others – a range of economic, legal, political, sociological, and technological theories to at least understand the nature and extent of the relevant risks. Customer value theory from the marketing discipline offers an alternative framework for understanding the holistic "value" of cryptocurrencies, which lawmakers might also find useful in this endeavour. Customer value theory's unique and empirically-informed conception of the "value" concept challenges prevailing assumptions about customer preferences and behaviours, and, in the context of cryptocurrency, offers a means of critically and systematically exploring the perceived value of cryptocurrencies to their users, with the aim of better conceptualising this new asset class, identifying specific risks that regulation should seek to mitigate, and thereby helping to inform the development of appropriate regulatory responses.

The aim of this paper, then, is not to describe or advocate for a particular regulatory destination, but rather to provide explanatory insight into the relevant issues that may over time assist global law and policymakers in forming their own views on what that destination ought to be.

What is customer value?

In order to regulate cryptocurrency effectively, law and policy makers must first understand the nature of cryptocurrency transactions, and in particular, the factors that might influence particular traders to engage in them. In other words: what is the value of cryptocurrency to its users, and therefore what risks does it present to individuals and society more broadly?

Historically, "value" was a purely economic concept, concerned primarily – if not exclusively – with the idea of exchanging products or services belonging to one, for

[52] Fiona Haines, 'Regulation and Risk' in Peter Drahos (ed), *Regulatory Theory: Foundations and Applications* (ANU Press 2017).

alternative products or services belonging to another.[53] Many considered that the potential for any such exchange could be calculated – with a reasonable degree of accuracy – by reference only to the intrinsic attributes of the relevant items, together with the relative availability of and demand for those attributes within a given market.[54]

However, in recent decades, a growing multitude of theorists, predominantly from the marketing discipline, have argued that the vast majority, if not all, of these apparently purely economic transactions are in fact laden with an often-overlooked layer of complexity, which – if explored – can offer useful insight to organisations seeking to improve the distinctiveness of, and/or customer satisfaction with, their products, services, or processes.[55] In general, they claim that "value" is inherently subjective.[56] Some even go so far as to say that it only exists in the eyes of the beholder.[57] Woodruff famously defined this broader concept of "customer value" as:

> '…a customer's perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations.'[58]

On this analysis, value is a multifaceted concept, which comprises an almost unlimited number of individual components that may be desired and/or perceived by different customers or groups of customers across a diverse range of demographics, geographies, and generations. There almost certainly is not one size fits all. Many such value components have been positively conceptualised and studied by marketing academics. For example, amongst many others, the literature identifies: co-creation value;[59] epistemic value;[60] experiential value;[61] functional value;[62]

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[53] Douglas McKnight, 'The Value Theory of the Austrian School' (1994) 62 Appraisal Journal 465.
[54] T Woodall, 'Conceptualising 'Value for the Customer': An Attributional, Structural and Dispositional Analysis' (2003) Academy of Marketing Science Review 1.
[55] For a recent, comprehensive analysis of the customer value literature and the influence of the various philosophical paradigms that underpin it, see Valarie A Zeithaml and others, 'Three Decades of Customer Value Research: Paradigmatic Roots and Future Research Avenues' (2020) 23 409.
[56] Simon Kelly, Paul Johnston and Stacey Danheiser, *Value-ology* (Palgrave Macmillan 2017), 4.
[57] V A Zeithaml, 'Customer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence' (1988) 52(2) *Journal of Marketing* 2.
[58] R B Woodruff, 'Customer value: The next source for competitive advantage' (1997) 25(2) *Journal of the Academy of Marketing Science* 139, 142.
[59] Stephen L Vargo and Robert F Lush, 'Evolving to a New Dominant Logic for Marketing' (2004) 68(1) Journal of Marketing 1.
[60] Jagdish N Sheth, Bruce I Newman and Barbara L Gross, 'Why We Buy What We Buy: A Theory of Consumption Values' (1991) 22 Journal of Business Research 159.
[61] Morris B Holbrook, 'Customer value and autoethnography: subjective personal introspection and the meanings of a photograph collection' (2005) 58 Journal of Business Research 45.
[62] Whan C Park, Bernard J Jaworkski and Deborah MacInnis, 'Strategic Brand Concept-Image Management' (1986) 50(4) Journal of Marketing 135.

material value;[63] practical value;[64] relational value;[65] symbolic value;[66] utilitarian value;[67] and even the value of happiness itself.[68]

Whilst over time marketing scholars claim to have identified an increasingly wide range of value components that might influence customer behaviour, there has in more recent times been: firstly an acknowledgment that customer purchasing decisions are not necessarily as rational as earlier models may have suggested; and secondly, a general evolution towards a recognition of experiential and emotional aspects of value as capable of being just, if not more influential on customer behaviour than apparently more "rational" ones.[69] Similarly, Gilmore and Pine's work encourages organisations creating value to look beyond products, services, and processes, to think also about customer experiences and transformations,[70] and in doing so write of the emerging "experience economy" – arguing that almost all customer purchases now have an experience dimension, and indeed that it is often this experience dimension that constitutes the most important and influential aspect of value perceived by the customer.[71] Relatedly, these trends have more recently led Vargo and Lusch to conclude that marketing is now evolving to a new dominant logic (so-called "service-dominant logic"), under which the provision of services (comprising the intangible, co-creation of value, and relationships) are now the core of any economic exchange, even those which of the face of it appear to relate to tangible goods.[72] In the present context, these theoretical trends underscore the importance of considering cryptocurrency exchanges as far more than purely economic transactions.

Several attempts have been made to translate this vast body of work into a manageable framework that can assist those seeking to evaluate or create customer

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[63] M L Richins, 'Special Possessions and the Expression of Material Values' (1994) 21(3) Journal of Customer Research 522.
[64] K de Ruyter and J Bloemer, 'Customer loyalty in extended service settings: The interaction between satisfaction, value attainment and positive mood' (1999) 10(3) International Journal of Service Industry Management 320.
[65] Christian Grönroos, 'From marketing mix to relationship marketing: Towards a paradigm shift in marketing' (1994) 32(2) Management Decision 25; Annika Ravald and Christian Grönroos, 'The value concept and relationship marketing' (1996) 30(2) European Journal of Marketing 19.
[66] Kevin Lane Keller, 'Building strong brands in a modern marketing communications environment' (2009) 15 Journal of Marketing Communications 139.
[67] Woodall, above n 54.
[68] Kevin Kaiser and S David Young, *The Blue Line Imperative: What Managing for Value Really Means* (Jossey-Bass 2013), 2.
[69] See Morris B Holbrook, 'Essay on the origins, development and future of the consumption experience as a concept in marketing and consumer research' (2018) 21 Qualitative Marketing Research 421.
[70] James H Gilmore and B Joseph Pine II, 'Beyond goods and services' (1997) 25(3) Strategy and Leadership 10.
[71] B Joseph Pine II and James H Gilmore, 'Welcome to the Experience Economy' (1998) 76(4) Harvard Business Review 97.
[72] Vargo and Lusch, above n 59.

value in a given context.[73] For example, Holbrook devised "The Eight Es", comprising eight categories of value: "Efficiency"; "Excellence"; "Exhibitionism"; "Elitism"; "Entertainment"; "Esthetics"; "Ethics"; and "Ecstasy".[74] Similarly, building on Maslow's influential "hierarchy of needs",[75] Almquist, Senior and Bloch identify and collate into their own hierarchical pyramid, 30 different elements of value, ranging from "self-transcendence", "provides hope", and "self-actualisation" at the top, down to "reduces effort", "avoids hassles", and "quality" at the bottom.[76]

One particularly user-friendly framework comes from Smith and Colgate.[77] In their seminal paper, they categorise the various value components identified in the literature into four distinct dimensions: "functional/instrumental" value (concerned with product/service quality and the extent to which it helps a customer achieve particular objectives);[78] "experiential/hedonic" value (concerned with how a customer experiences a product/service and how it makes the customer feel);[79] "symbolic/expressive" value (concerned with the psychological meaning that a customer attaches to a product/service);[80] and "cost/sacrifice" value (being the net benefit that a customer receives from a product/service after transactional costs – financial or otherwise – have been deducted).[81]

Customer value is then a broad, subjective concept, which encompasses the diverse range of thoughts, feelings, and other psychological factors that might be at play when individual customers make purchasing decisions. By understanding more holistically the perceived customer value of cryptocurrencies, the authors of this paper contend that it is possible both to better understand the nature of cryptocurrency itself, and therefore also to recognise previously unidentified potential risks that may in due course require regulatory intervention.

Methodology

The primary aim of this study was to identify value components that might be perceived by traders dealing in cryptocurrency but which might be overlooked by regulators and policymakers who focus purely on traditional economic perspectives, and which as a result might not receive the requisite regulatory attention.

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[73] See for example Eric Almquist, John Senior, and Nicholas Bach, 'The Elements of Value' (2016) 94(9) Harvard Business Review 46; Park, Jaworkski and MacInnis, above n 62; Sheth, Newman and Gross, above n 60; Woodall, above n 54; and W Ulaga, 'Capturing value creation in business relationships: A customer perspective' (2003) 32 Industrial Marketing Management 677.
[74] Morris B Holbrook, 'Consumption Criteria in Arts Marketing' in Daragh O'Reilly, Ruth Rentschker and Theresa A Kirchner (eds), *The Routledge Companion to Arts Marketing* (Routledge 2014).
[75] A H Maslow, 'A Theory of Human Motivation' (1943) 50 Psychological Review 370.
[76] Almquist, Senior, and Bloch above n 73.
[77] J B Smith and M Colgate, 'Customer Value Creation: A Practical Framework' (2007) 15(1) Journal of Marketing Theory and Practice 7.
[78] Ibid 10.
[79] Ibid.
[80] Ibid.
[81] Ibid 11.

The authors construe "value" from a critical realist perspective, thus contending that there is no observable reality within the social world and therefore that it is only possible to gain relevant insight into this concept through either qualitative data,[82] and/or theoretical perspectives that seek to elucidate how and why individual customers subjectively perceive value in the way that they do.[83] Accordingly, the authors set out to achieve the aforementioned aim of this study by using Smith and Colgate's theoretical framework to critically and systematically explore the perceived value of cryptocurrencies to their users. In so doing, the authors' intention was not to go so far as to propose a particular regulatory framework, but rather, to generate new insight that could help inform future global collaboration attempts to regulate and govern this new asset class.

Whilst Smith and Colgate's customer value framework has its limitations (in particular the potential for some overlap between the four categories or dimensions of value) it comprises an accessible and yet sufficiently comprehensive tool, capable of facilitating a preliminary analysis of cryptocurrency from a customer value perspective, which illuminates aspects of value beyond the purely economic, and thereby highlights the wider range of considerations of relevance to law and policy makers in this area. Most value components identified in the customer value literature outlined above would seem to fit readily within at least one of the four dimensions of the framework. This makes it an effective tool for a holistic exploration of value in a given context. By contrast, the authors considered that other equivalent frameworks were less suitable for this task, either because they featured levels of granularity that were likely to be disproportionate to the aim of the present study and thereby risk overcomplicating its findings,[84] and/or because they were more specifically designed as tools for (and therefore are more suited to) organisations seeking to enhance the perceived customer value of their products and services, thus incorporating additional steps or complexities that were not applicable to an analysis of the present kind.[85]

The study therefore adopts a socio-legal methodology, which '…allow[s] a breakout from the claustrophobic world of legal scholarship and education...'.[86] In recent decades there has been a substantial rise in the use and recognition of socio-legal research methods, and they now enjoy significant support from within the legal research community.[87] Relatedly, legal academics are increasingly calling for the

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[82] Roy Bhaskar, *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy* (Routledge 2011); Berth Danermark, Mats Ekström, and Jan Ch Karlsson, *Explaining Society: An Introduction to Critical Realism in the Social Sciences* (2nd edn, Routledge 2019); Andrew Sayer, *Method in Social Science: A Realist Approach* (2nd edn, Routledge 2010).
[83] Kelly, Johnston and Danheiser, above n 56; Zeithaml, above n 57.
[84] For example, see Almquist, Senior, and Bloch, above n 73.
[85] For example, see Kelly, Johnston and Danheiser, above n 56.
[86] Roger Cotterrell, 'Subverting Orthodoxy, Making Law Central: A View of Sociolegal Studies' (2002) 29 Journal of Law and Society 632, 632.
[87] D R Harris, 'The development of socio-legal studies in the United Kingdom' (1983) 3 Legal Studies 315.

discipline to embrace greater interdisciplinarity,[88] and the authors felt strongly that the marketing discipline had something to offer to the current debate on cryptocurrency regulation.

Since the research was prompted by a need to develop practical solutions to a new problem currently faced by modern society, it might also be described by social scientists as "pragmatic science", which of itself permits of a wide range of methodological options.[89] As Bryant argued, '…the ultimate criterion of good research should be that it makes a difference.'[90] This is precisely what the authors set out to achieve.

Similarly, the critical application of customer value theory to the present issue means that this study might also be described as adopting a critical theoretical approach. Using theory as method is a well-established approach in the social sciences,[91] and it offers the potential for '…immanent critique, working from within categories of existing thought in order to radicalize those categories, reveal their internal contradictions and shortcomings, and demonstrate their unrecognized possibilities.'[92] Kelemen and Rumens put it even more strongly, contending that theory as method is capable of serving as a '…catalyst to change reality through enlightenment and emancipation'.[93]

It is accepted that, given the purely theoretical approach that was adopted, the present study is not capable of offering any significant insight into the relative *prevalence* of the different value components perceived by traders in relation to cryptocurrency, or indeed how perceptions may differ amongst different types of trader. Such insight could only be gained through the collection and analysis of new empirical data. However, attempting to collect such data without first understanding the types of value that might *in principle* be perceived in this context would be premature. Instead, the present study offers a means by which a wide range of possible value components can be identified. Future studies could then, as a result, explore their relative significance in this context.

Customer value theory as an explanation of cryptocurrency

In this section of the article, theoretical concepts from the customer value literature are critically and systematically applied to the cryptocurrency context in order to

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[88] Greta S Bosch, 'Deconstructing Myths about Interdisciplinarity: is now the time to rethink interdisciplinarity in legal education?' (2020) 1 European Journal of Legal Education 27.
[89] Mihaela L Kelemen and Nick Rumens, *An Introduction to Critical Management Research* (Sage 2008); Bente Elkjaer and Barbara Simpson, 'Pragmatism: A lived and living philosophy. What can it offer to contemporary organization theory?' in Haridimos Tsoukas and Robert C H Chia (eds), *Philosophy and Organization Theory* (Emerald 2011).
[90] Anthony Bryant, 'Grounded Theory and Pragmatism: The Curious Case of Anselm Strauss' (2009) 10(3) Qualitative Social Research, Article 2, para 102.
[91] See for example Cheryl E Matias, The Handbook of Critical Theoretical Research Methods in Education (Routledge 2021) 5.
[92] Thomas A Schwandt, The SAGE Dictionary of Qualitative Inquiry (SAGE 2011) 55.
[93] Kelemen and Rumens, above n 89, 8.

identify potential risks that law and policy makers should be cognisant of when developing a global regulatory and governance framework.

Functional/instrumental value

In Smith and Colgate's framework, functional/instrumental value is concerned both with the intrinsic quality of the subject, and with its potential to help a customer achieve a specific objective.[94] For present purposes, these distinct aspects warrant separate analysis.

As an aspect of perceived customer value, "quality" finds strong support in the literature,[95] and it is not surprising that when a customer perceives a product or service as of greater quality, this is likely to positively influence that customer's subjective assessment of its value. At first glance – unlike gold, silver, or bread – cryptocurrency may not appear to have any intrinsic value, and questions of quality may therefore initially appear to be irrelevant. Cryptocurrency is intangible, and appears only to function as a means to an end; much, in that sense, like traditional, fiat currency. However, at least pseudo-intrinsic value can arguably be found in its scarcity. Cryptocurrencies typically (though not always) have a volume which is at least initially fixed. When a new cryptocurrency is released to the market by a developer, it takes the form of a series of complicated mathematical problems, which often require significant computing power to solve.[96] So-called "miners" who have the requisite technology, expertise, and inclination then set to work trying to solve these mathematical problems, and their reward for doing so is allocation of new cryptocurrency, which can then be traded. Whilst this process has received criticism for the environmental impact of the increasingly significant processing power required and associated electricity that must be expended (and regulators must also be mindful of this impact),[97] it does serve to create an environment in which limited quantities of cryptocurrencies exist. In that sense, mining for cryptocurrency is at least analogous to mining for gold, and cryptocurrency gains analogous, pseudo-intrinsic value as a result. Similarly, the complexity of the mathematical problems associated with one cryptocurrency, together with its relative security or stability, can necessitate a comparative evaluation of quality as against another cryptocurrency. From a regulatory perspective – just as exists for tangible assets such as gold or silver[98] – this raises questions about whether there should be internationally agreed and/or statutorily imposed minimum quality standards that must be met in order for

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[94] Smith and Colgate, above n 77, 11.

[95] For example, "quality" is explicitly stated as an element of value in Almquist, Senior and Bloch's "Elements of Value Pyramid" (see Almquist, Senior and Bloch, above n 73) and is broadly equivalent to "excellence" as featured in Holbrook's "8 Es" (see Holbrook 74).

[96] Garrick Hileman and Michel Rauchs, 'Global Cryptocurrency Benchmarking Study' (2017) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2965436> accessed 21 January 2022.

[97] Patrick Thompson, 'Bitcoin Mining's Electricity Bill: Is it Worth it?' (*Coin Telegraph,* 2 June 2018) <https://cointelegraph.com/news/bitcoin-minings-electricity-bill-is-it-worth-it> accessed 16 January 2022.

[98] Under the UK Hallmarking Act 1973, precious metals like gold, silver and platinum must meet precious metal fineness standards, following the hallmarking standards available under the International Hallmarking Convention.

any digital asset to describe itself as "cryptocurrency". This would help to ensure that, when purchasing cryptocurrency, traders could be confident that it met certain minimum quality standards.

The next issue to consider is cryptocurrency's potential to help traders achieve particular objectives that they might have. Again, there appears to be consensus in the literature on the existence and importance of this aspect of value, albeit different theorists conceptualise it differently. For example, Woodall writes about the "usefulness" of product or service to a particular customer,[99] whilst Woodruff writes in terms of the "outcomes" that a customer might achieve as a result, and of the customer's "goals" and "purposes".[100] It is clear however that a customer will perceive greater value in a product or service that they conclude has practical utility for them, and that this in itself is a highly subjective assessment that will differ greatly from customer to customer.

The UK Cryptoasset Taskforce identifies three broad types of crypto tokens – exchange, security, and utility.[101] Exchange tokens, like typical fiat money, are predominantly utilised as a means of exchange for goods and services. Security tokens, operating as specified investments akin to stocks, are traded as transferable securities or financial instruments that entitle traders/holders to ownership rights or a share in future profits. Lastly, utility tokens are specifically created to be redeemable for access to a specified product or service. The quest to unveil any underlying objectives that drive crypto patronage will be most fruitful if its wide range of forms and uses are properly understood.

Cocco, Concas and Marchesi identified two broad categories of traders involved in cryptocurrency: "random" traders, who invest for a variety of reasons linked to their own needs, and "chartists" who aim to gain by placing orders in the Bitcoin market.[102] Whilst it seems likely that so-called chartists are concerned strongly if not exclusively with making a profit, random traders may enter the market for a diverse range of reasons. By understanding the full range of objectives that cryptocurrency traders might have in mind when trading, it may be possible to identify risks and potential harms that might be overlooked in a purely economic analysis.

Clearly, even amongst retail and "random" trader populations, many *are* likely to invest for profit – and indeed the potential for doing so is significant. There is some evidence to show that cryptocurrency demonstrates what economists term "persistence" – i.e. that past performance can be used to predict future performance, and thus that there is scope for exceptional profits to be made through trend trading strategies.[103] In March 2019 the FCA commissioned research into how and why

[99] Woodall, above n 54.
[100] Woodruff, above n 58.
[101] HM Treasury, above n 16, 11.
[102] Luisanna Cocco, Giulio Concas and Michele Marchesi 'Using an artificial financial market for studying a cryptocurrency market' (2015) 12 Journal of Economic Interaction and Coordination 345.
[103] Guglielmo Maria Caporale, LuisGil-Alana and Alex Plastun, 'Persistence in the cryptocurrency market' (2018) 46 Research in International Business and Finance 141.

retail traders (i.e. consumers) invest in this new technology.[104] The research indicated that many retail traders invest in cryptocurrency as a way to "get rich quick",[105] stemming from a desire to become wealthy with minimum effort, with some even describing themselves as 'lazy'.[106] In a similar vein, the report concluded that many respondents were motivated by a fear of missing out (so-called "FOMO"), having heard stories of others who had profited significantly from such investments.[107] As one participant put it: 'I saw so many people making loads of money so I had to jump on it', and another explained that they had seen media coverage of cryptocurrencies, which told them to 'jump on the boat now'.[108]

Since many individual traders do perceive cryptocurrencies to be an investment, there may be an argument for applying existing legal rules (for example in relation to investment advice, or the publishing of investment information) to cryptocurrencies. However, it is noteworthy that – despite the financial aspirations that seem to initially motivate retail traders to "invest" – research from the FCA found that 1 in 3 who have purchased cryptocurrency have never checked the value of their currency since the initial transaction.[109] This suggests that there is additional complexity here.

The profit-making motives identified in the FCA study, at best, merely provide for an incomplete and inconclusive explanation of the objectives that underpin crypto trading. For a start, profit-making must be, it is argued, viewed within the context of global trading volume. For example, a 2020 statistical analysis of Bitcoin trading volume in various countries found that interest in cryptocurrencies was seemingly higher in Africa and Latin America than some of the world's developed economies.[110] Most of the top 20 countries by volume are emerging economies, including Nigeria, Colombia, and Afghanistan.[111] Although there are likely to be multifaceted factors driving the general interest in cryptocurrencies in these countries – such as a growing internet-using population, devaluation of local currencies, remittance purposes, and socio-political instability – it is arguable that those engaging with this new form of money are mostly young, "tech-savvy" people who have been previously excluded from participation in traditional finance. As such, financial inclusion may

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[104] Revealing Reality, 'How and why consumers buy cryptoassets: A report for the FCA' (Revealing Reality, 2019) <https://www.fca.org.uk/publication/research/how-and-why-consumers-buy-cryptoassets.pdf> accessed 17 January 2022.
[105] Ibid.
[106] Ibid.
[107] Ibid.
[108] Ibid.
[109] Financial Conduct Authority, 'Cryptoassets: Ownership and attitudes in the UK: Consumer survey research report' (Financial Conduct Authority, March 2019) <https://www.fca.org.uk/publication/research/cryptoassets-ownership-attitudes-uk-consumer-survey-research-report.pdf> accessed 21 January 2022.
[110] Raynor de Best, 'Bitcoin trading volume on online exchanges in various countries worldwide in 2020' (*Statista,* 22 July 2021*)* <https://www.statista.com/statistics/1195753/bitcoin-trading-selected-countries/#statisticContainer> accessed 20 February 2022.
[111] MacKenzie Sigalos, 'This map shows where cryptocurrency is taking off around the world' (*CNBC,* 19 August 2021) <https://www.cnbc.com/2021/08/18/new-cryptocurrency-bitcoin-user-global-map.html> accessed 19 February 2022.

also be an important objective for retail traders, particularly in such emerging economies.

One perhaps unexpected possible specific objective that a trader might have for acquiring cryptocurrency, especially exchange or utility tokens, could be to either advance or undermine public systems. In some jurisdictions, there is evidence to suggest that cryptocurrency is becoming a medium for advancing political objectives, especially in reducing the state's role in citizens' economic and social lives.[112] An example is the indigenous cryptocurrency created by a confederation of seven Sioux tribes in the US – MazaCoin – developed with an initial objective that it would eventually increase the political, legal, and financial autonomy of the indigenous Ogala Lokota Nation.[113] The Lakota Nation never formally adopted the currency. However, given its propensity to reduce the role of the state in the monitoring and processing of financial transactions, the opportunities that cryptocurrencies offer for indigenous and marginalised groups to break away from traditional national currencies and thereby help them to achieve certain political and socio-economic objectives, are clear.

Cryptocurrencies have already been adopted to achieve functional objectives like garnering political support, facilitating anti-government protests, and evading the kind of state surveillance that leads to crackdown of dissidents. Consider the following two examples – the creation of a crypto-based political party in Georgia, and the use of Bitcoin by anti-police protesters in Nigeria.

In 2016, a new libertarian political party – Girchi – was established in Georgia. One of its unconventional proposals was the issuance of a crypto-based currency called Georgian Dollar (GED) to serve two main purposes. First, to allow party members and supporters with enough GEDs to participate in decision-making on major political issues, and second, to facilitate the acquisition of Georgian land following political implementation of its widescale privatisation policy.[114] Although criticised as a form of electoral bribery, the appeal of cryptocurrency to serve as a political tool, especially because of its anonymous nature, might suggest an underlying issue of non-representation or political marginalisation. This warrants examination in the context of wider regulatory reform of monetary systems, as well as raising considerations for governments about the extent to which regulation is needed to help or perhaps even to hinder certain types of political movements.

Similarly, it is also likely that cryptocurrency can be utilised as a response to socio-political marginalisation and state surveillance, such as when there was widespread

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[112] Christopher Alcantara and Caroline Dick, 'Decolonization in a Digital Age: Cryptocurrencies and Indigenous Self-Determination in Canada' (2017) 32 Canadian Journal of Law and Society 19.
[113] James Vincent, 'Mazacoin: Native American Tribe Adopts Bitcoin Derivative as "National Currency"' (*Independent*, 3 March 2014) <https://www.independent.co.uk/life-style/gadgets-and-tech/mazacoin-native-american-tribe-adopts-bitcoin-derivative-as-national-currency-9165314.html> accessed 15 January 2022.
[114] Giorgi Mikhelidze, 'How Cryptocurrency Transforms Politics' (*Cryptodaily*, 22 October 2019) < https://cryptodaily.co.uk/2019/10/how-cryptocurrency-transforms-politics> assessed 17 January 2022.

use of Bitcoin in 2021 by Nigerian protesters against police brutality. Following widespread civil protests against a specialist unit of the Nigerian Police Force, the need for funds to cater for protesters' necessities like food and water quickly became clear. Calls for donations were answered by citizens home and abroad, and funds began pouring into identified accounts held in local banks.[115] However, in a bid to quell what was fast becoming 'the largest political protest' in decades, the Nigerian Federal Government activated a financial crackdown campaign – identifying and freezing protesters' bank accounts. To evade state surveillance and crackdown on civil liberties, protesters turned to cryptocurrency as it promised freedom, while the status quo only reinforced restrictions.[116] As this example illustrates, cryptocurrency offers opportunities to circumvent government power, especially when such powers are exercised tyrannically or without regard to citizens' liberties.

Beyond arguably legitimate political objectives, cryptocurrency – and in particular Bitcoin – has also become popular amongst those who seek to break the law in less controversially criminal ways: so-called "cyber-criminals".[117] In part, this rise may be the result of a lack of regulation – for example, the well-established anti-money laundering concept of "knowing your customer" can more easily be evaded through cryptocurrency, due to its inherent privacy "benefits".[118] When HM Treasury evaluated the risk of cryptocurrency as a vehicle for money laundering and the financing of terrorist activity in 2015, it categorised that risk as "low".[119] However, in its 2020 report, this risk level was elevated to "medium"[120]. This shift is attributed to vulnerabilities within cryptocurrencies that have since been identified, such as their pseudo-anonymous nature, which allows users to hide their identities and limit online accessibility. These features arguably also allow such individuals to quickly move funds across borders without legal consequences.[121] Whilst even an outright ban on cryptocurrency would be unlikely to eliminate its use within organised crime, the introduction of similar due diligence requirements as are currently required for traditional currencies might at least go some way to supporting the detection of transactions which are intended to further criminal purposes.

It is clear then that trader objectives for purchasing or dealing in different types of cryptocurrencies are wide-ranging and varied and are certainly capable of

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[115] Yomi Kazeem, 'How bitcoin powered the largest Nigerian protests in a generation' (*Quartz Africa,* 26 October 2020) <https://qz.com/africa/1922466/how-bitcoin-powered-nigerias-endsars-protests/> accessed 17 January 2022.

[116] Isaac Anyaogu and Frank Eleanya, 'From #EndSARS to #LekkiTollGate: The Rise of Cryptocurrency in Nigeria' (*Business Day,* 13 February 2021) <https://businessday.ng/analysis/article/from-endsars-to-lekkitollgate-the-rise-of-cryptocurrency-in-nigeria/> accessed 17 January 2022.

[117] Steven David Brown, 'Cryptocurrency and criminality: The Bitcoin opportunity' (2016) 89(4) The Police Journal: Theory, Practice and Principles 327.

[118] Brown, above n 117.

[119] HM Treasury and Home Office, 'UK national risk assessment of money laundering and terrorist financing' (October 2015) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/468210/UK_NRA_October_2015_final_web.pdf> accessed 17 January 2022.

[120] HM Treasury and Home Office, above n 119.

[121] Ibid 71.

encompassing more than purely financial motivations. Some such broader objectives may be more legitimate than others, but all warrant careful and deliberate examination as law and policy makers across the globe seek to protect the wider interests of the societies that they serve.

Experiential/hedonic value

Experiential/hedonic value within Smith and Colgate's framework is principally concerned with a customer's experience of using a product or service, including how it makes them feel.[122] The framework refers to a wide range of value components within this broad category, ranging from "sensory" value, to "epistemic" value, to "social/relational" value,[123] many of which are supported by equivalents in other leading frameworks.[124] However, it surprisingly does not consider these aspects of value in the context of the broader shift within the discipline in more recent times towards the idea that customer experience is fast becoming the dominant aspect of most if not all value exchanges,[125] and that marketing is now shifting towards a service-dominant logic.[126] In this respect, there may arguably be more that law and policy makers can learn from the experiential aspects of value, and they may play an even more influential role in trader behaviour, than Smith and Colgate's model suggests. Nevertheless, they key questions for present purposes are: what kind of experiential value do cryptocurrency traders perceive; how does this influence their behaviour; and what risks does this pose that may require regulatory attention?

For those most interested in "getting rich quick", purchasing cryptocurrency may be more akin to gambling, than investing. Research conducted by Matthias Pelster and others has compared cryptocurrency to gambling, suggesting that some traders begin trading because they enjoy the thrill of doing so.[127] Similarly, the FCA surveyed 1,000 people aged 18-40 in 2021 and found that 76% of respondents felt a "sense of competitiveness" when investing in crypto, with 68% specifically comparing it to gambling.[128] The FCA found that many investors were driven by 'competition with friends, family and acquaintances'.[129]

Whilst cryptocurrency may be perceived by many as a form of gambling, and its volatile nature would arguably support such an analysis, it is not currently subject to most gambling regulation. In the UK, gambling is principally regulated by The Gambling Act 2005, which provides the kind of holistic legal framework currently

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[122] Smith and Colgate, above n 77, 10.
[123] Ibid 12.
[124] See for example the "Emotional" elements of value in Almquist, Senior and Bloch, above n 73, and "Entertainment" in Holbrook, above n 74.
[125] Pine and Gilmore, above n 71.
[126] Vargo and Lusch, above n 59.
[127] Matthias Pelster, Bastian Breitmayer and Tim Hasso 'Are cryptocurrency traders pioneers or just risk-seekers? Evidence from brokerage accounts' (2019) 182 Economics Letters 98.
[128] Financial Conduct Authority, 'FCA warns that younger investors are taking on big financial risks' *(FCA Press Releases,* 23 February 2021) <https://www.fca.org.uk/news/press-releases/fca-warns-younger-investors-are-taking-big-financial-risks> 20 February 2022.
[129] Financial Conduct Authority, above n 128.

absent from the cryptocurrency domain. Gambling regulation ensures that gambling is conducted in a fair and open way, children and vulnerable persons are protected from exploitation,[130] and assistance is available to persons who are or may be subject to problems related to gambling.[131] Similarly, gambling has a minimum age restriction of 18, and provision exists for the punishment of those who invite, cause, or permit a minor to gamble.[132]

The Gambling Act 2005 also led to the creation of the Gambling Commission; a regulatory body that licenses, regulates, advises, and provides guidance on gambling.[133] The Commission also regulates the advertisement of gambling, ensuring that it is undertaken in a socially responsible manner.[134] Although the regulatory framework for gambling is not perfect,[135] it does go some way to ensuring that individuals are protected, and provides a potential model that could be followed in relation to cryptocurrency.

Some steps have indeed already been taken in this regard. For example, the FCA recently launched an £11m campaign called "Investsmart", targeting inexperienced/young investors (aged 18-40) to help them understand the risks of cryptocurrencies.[136] However, this at the moment is merely a campaign; there is presently no legal requirement for cryptocurrency platforms or other similar entities to take or refrain from taking certain actions, as currently exists within the gambling sector. This raises a question for law and policy makers as to whether equivalent regulatory measures ought to be taken in relation to cryptocurrency trading, or whether the existing framework in relation to gambling ought to be extended to cover this new technology.

Symbolic/expressive value

Symbolic/expressive value is concerned with psychological meaning, and specifically with how users perceive themselves – and how they perceive others might perceive them – if they are associated with particular products or services.[137] Almquist, Senior and Bloch categorise such matters as higher-order elements of value, which can only be delivered if at least some of the more functional elements are also

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[130] Gambling Act 2005, s 1.
[131] Gambling Act 2005, s 24.
[132] Gambling Act 2005, s 46.
[133] Gambling Commission, 'Gambling license information, guidance and advice for businesses and individuals' (*Gambling Commission,* no date*)* <https://www.gamblingcommission.gov.uk/licensees-and-businesses> accessed 20 January 2022.
[134] Gambling Commission, 'Advertising and marketing rules and regulations' (*Gambling Commission,* no date*)* <https://www.gamblingcommission.gov.uk/licensees-and-businesses/guide/advertising-marketing-rules-and-regulations> accessed 20 January 2022.
[135] Betting and Gaming Council, 'Safer gambling – responsible advertising and marketing' (*Betting and Gaming Council*) <https://bettingandgamingcouncil.com/safer-gambling-initiatives/advertising-marketing> accessed 20 January 2022.
[136] Rupert Jones, 'FCA to warn younger investors off cryptos and other high-risk products' (London, 20 October 2021) <https://www.theguardian.com/technology/2021/oct/20/fca-to-warn-younger-investors-off-cryptos-and-other-high-risk-products> accessed 17 January 2022.
[137] Smith and Colgate, above n 77, 10.

provided.[138] However, in the present context, far from making these elements of value less relevant, the greater power of these aspects of value mean that they warrant very careful attention, since they are likely to have significant influence on trader behaviour.

Premium, fashionable, or otherwise popular brands may carry more symbolic value than others, and retail traders in particular may be willing to buy certain products – and/or pay more for them – as a result. When an individual purchases such a product, they are concerned not merely with the product's inherent attributes or functionality, but rather with how owning that product might make them feel about themselves, or whether it might positively influence how others feel about them. Though this is a question of personal meaning, and is therefore a highly individual matter,[139] it seems likely that certain brands have the potential to offer significant value in this context.

Indeed, some large commercial organisations with premium brands attracting significant customer loyalty have already begun to exploit the opportunities offered by the cryptocurrency market. For example, many leading football clubs have created controversial crypto "fan tokens" as a way of generating additional income from their fan base, offering holders relatively nominal benefits, such as a modest discount on digital merchandise, or the right to vote on which songs are played in the stadium before a match.[140] Whether or not these cryptocurrencies represent value for money (or "sacrifice value"; see below) is debatable, but they certainly raise questions about whether relevant traders appreciate the nature and volatility of the asset that they are acquiring – at the time of writing, fan tokens issued by Manchester City Football Club have reportedly dropped 70% of their value since they were launched.[141]

More generally, there may be symbolic value attached to the idea of cryptocurrency itself as an alternative to traditional, state-controlled currencies. As observed by Eric Helleiner, in the same way national currencies are tied to nationhood and entrench 'a sense of collective identity centred around nationalist images of a common past and culture,'[142] the adoption of a cryptocurrency set up to operate outside state institutions and achieve objectives such as autonomy could itself serve to represent a declaration of self-determination or autonomy. For example, a study conducted on youths' perceptions of cryptocurrency found that 'respondents who are characterized by liberal views and trust in the financial system tend to perceive cryptocurrencies as promising.'[143] Similarly, when the FCA commissioned research to investigate

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[138] Almquist, Senior and Bloch, above n 73, 48.
[139] Holbrook, above n 61.
[140] Joe Tidy and Edwin Lane, 'Football fans spending millions on club crypto-tokens' *BBC News* (10 December 2021) <https://www.bbc.co.uk/news/technology-59596267> accessed on 10 December 2021.
[141] Tidy and Lane, above n 140.
[142] Eric Helleiner, 'National Currencies and National Identities' (1998) 41 American Behavioural Scientist 1409.
[143] Maria Gagarnia and Others, 'Social and Psychological Predictors of Youths' Attitudes to Cryptocurrency' (2019) 9 Behavioural Sciences 118.

consumer perceptions on the regulation of cryptocurrency, it found that many were happy with rather than troubled by the "unregulated space" as they liked the idea that the currency was free from state/bank control.[144] Unlike with traditional currencies, decisions on cryptocurrencies are typically made by algorithms rather than people.[145] For some, this prioritisation of technology over human judgement represents a more inclusive approach.[146] Indeed, the evolution of cryptocurrencies might even open up society to marginalised groups who have not thus far been able to participate actively in the financial system. As Dierksmeier and Seele note:

> Cryptocurrencies are considered a remedy against poverty. They allow members of society, who could not open a regular bank account, because they might not have a proper home address, to participate in financial transactions via an internet-based altcoin account operable from any smartphone.[147]

When considered in isolation, these are noble aims, and it is easy to see how certain retail traders might wish to be associated with these aims by purchasing cryptocurrency.

Other possible "meaning" or "symbolic value" is also easy to find. Individuals often invest in cryptocurrency because they have been persuaded to do so by friends and family.[148] Others are invited to lavish and prestigious events as part of a ploy to persuade them to invest, [149] and – whilst carrying out this research – one of the authors commented that they had purchased some Bitcoin 'as a piece of history'. When regulating in this space, lawmakers would do well to remember that even sophisticated contracting parties rarely act entirely rationally when entering into transactions.[150] How much less able, then, might retail traders be to clearly separate any personal meaning that they might attach to a cryptocurrency "investment", and to properly evaluate when this of itself is sufficient to justify the risk that they take by doing so?

Sacrifice/cost value

According to Smith and Colgate, "sacrifice value" is the most mathematical of the aspects of value, and constitutes the difference between the benefits gained from a particular transaction and the costs incurred.[151] Again, though other frameworks

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[144] Revealing Reality, above n 104.
[145] Kevin Werbach, *The Blockchain and the New Architecture of Trust* (Cambridge, MA: MIT Press 2018), 95-111.
[146] Robert Hockett and Saule Omarova, 'The Finance Franchise' (2017) 102 Cornell Law Review 1143.
[147] Claus Dierksmeier and Peter Seele, 'Cryptocurrencies and Business Ethics' (2018) 152 Journal of Business Ethics 1, 11.
[148] Revealing Reality, above n 104.
[149] Ibid.
[150] Melvin Aron Eisenberg, 'The Limits of Cognition and the Limits of Contract' (1995) 47 Stanford Law Review 211.
[151] Smith and Colgate, above n 77, 11.

categorise it differently, strong support exists in the literature for this value component.[152]

One of the oft-cited advantages of cryptocurrency is that it reduces transaction costs, as compared with traditional fiat currency transactions.[153] Lower costs give rise to greater sacrifice value, particularly for users who carry out transactions at a significant volume. In particular, the use of cryptocurrencies for international remittances is a clear example of instances where users constantly weigh up the benefits and costs incurred. A World Bank study found that, in 2020, international remittances to low-and-middle-income countries, especially during the pandemic, increased to US$540 billion, representing a 1.6 per cent increase from 2019.[154] On average, depending on the country of destination, these remittances have attracted a fee of 6.5 per cent,[155] a rate higher than the 3 per cent target under the United Nation's Sustainable Development Goals.[156] In avoiding these high remittance fees, a survey of nearly 2,000 consumers by a foremost payments services firm – PYMNTS – found that consumers embracing cryptocurrencies for remittance purposes (over 23 per cent of respondents) have switched to cryptocurrencies as an alternative to fiat transfers.[157]

Additionally, in relation to sacrifice value, "costs" includes far more than the money paid to procure cryptocurrency, and most significantly includes the risk associated with the transaction. The risk of investing in or utilising cryptocurrency has been noted above, but it is important to understand how the risk of crypto transactions compares to the risk of investing in or transacting in other asset classes, and the extent to which individual retail traders appreciate any difference.

Pelster and others found that many of those involved in cryptocurrency feel that the risk of loss is outweighed by the profit they could gain.[158] This is supported by research from Kantar TNS, who surveyed over 2,000 consumers, and found that 71% of cryptocurrency owners agreed that the risk of losing funds, is one that they are willing to take.[159] This may be understandable due to the profits gained in 2017

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[152] For example, Almquist, Senior and Bloch include "reduces effort", "reduces risk" and "reduces cost" as "Functional" aspects of value, and situate these at the bottom of the Elements of Value Pyramid, though nevertheless conceptualise these value elements in similar terms to Smith and Colgate, see Almquist, Senior and Bloch, above n 73.
[153] He, above n 6.
[154] World Bank Group, 'Resilience: Covid-19 Crisis Through a Migration Lens (*World Bank Group,* May 2021) <https://www.knomad.org/sites/default/files/2021-05/Migration%20and%20Development%20Brief%2034_1.pdf> accessed 20 February 2022.
[155] World Bank Group, above n 154.
[156] United Nations Economic Commission for Europe, 'Remittance costs as a proportion of the amount remitted' (United Nations Economic Commission for Europe, no date) <https://w3.unece.org/SDG/en/Indicator?id=126> accessed 20 February 2022.
[157] PYMNTS, 'New Study: Crypto Emerging as a Favoured Form for Cross-Border Remittances' (*PYMNTS.com,* 26 October 2021) <https://www.pymnts.com/cryptocurrency/2021/new-study-crypto-emerging-as-favored-form-for-cross-border-remittances/> accessed 20 February 2022.
[158] Pelster, Breitmayer and Hasso, above n 127.
[159] Financial Conduct Authority, above n 109.

on Bitcoin alone, with returns at 1,358%.[160] This generally also appears to be the case in relation to remittances.

However, individuals' willingness to take this risk may also tell us something about the risk that they perceive in investing in more traditional asset classes or using fiat currencies. Findings from the Association for Consumer Research indicate that 'consumers keep faith in bitcoin's underlying technology even though they do lose faith in people.'[161] It is seemingly even more important since the outbreak of COVID-19 for consumers to trust organisations that they use.[162] This is because people have become more risk aware.[163] A statement from the Dean of the London Institute of Banking and Finance noted that banks should be worried about being trusted.[164] This may be due to the expectations from consumers who not only want their money protected, but also want to ensure their details are keep private. People are also using big tech companies over traditional banks due to the expense, and lack of user-friendly services that traditional banks offer.[165] Consequently, banks are now under pressure to adjust their services to include more tech savvy ideas to keep up with our digitally evolving society.

Another important risk associated with cryptocurrencies, which may not affect other asset classes in the same way, is the greater potential for what is termed "volatility connectedness" – the idea that if one, perhaps well-known, cryptocurrency (for example, Bitcoin) experiences a significant price fluctuation, then the price of other cryptocurrencies may also experience a related price fluctuation in the same direction, since the market more readily perceives cryptocurrency as a homogenous asset class than traditional currencies.[166] Furthermore, the volatility of the cryptocurrency market is heavily influenced, not only by media reports, but by social media platforms.[167] In particular, research has found that Twitter sentiment can be used to predict cryptocurrency prices.[168] These factors may go some way to explaining why cryptocurrency tends to be a more volatile asset class.

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[160] Toan Luu Duc Huynh, 'Spillover Risks on Cryptocurrency Markets: A Look from VAR-SVAR Granger Causality and Student's-t Copulas' (2019) 12(2) Journal of Risk and Financial Management 52.

[161] Mariam Humayun and Russell Belk, 'In ones and zeros we trust?: Money, Religion and Bitcoin' (2017) 45 Advances in Consumer Research 677.

[162] Emily DSilva, 'Banks can compete with big tech by exploiting the "trust" gap' (*TheNextWeb.com,* 11 October 2021) <https://www.proquest.com/docview/2580671852?parentSessionId=4VGv7o9bSbcZsqg9JrpE%2FZJgPwTe2XJHU2mrkyepdK8%3D&pq-origsite=primo&accountid=13827> accessed 9 February 2022.

[163] DSilva, above n 162.

[164] Vanya Damyanova, 'As tech firms rise, traditional banks should worry about trust, not love' (25 December 2019) SNL European Financials Daily <https://www.proquest.com/docview/2330710055?accountid=13827&parentSessionId=bXGe9N9u28FTwkHl6aN7uhMeK%2BQoQ4Tyi1cgGBvOw1Y%3D&pq-origsite=primo> accessed 9 February 2022.

[165] DSilva, above n 162.

[166] Shuyue Yi, Zishuang Xu and Gang-Jin Wang, 'Volatility connectedness in the cryptocurrency market: Is Bitcoin a dominant cryptocurrency?' (2018) 60 International Review of Financial Affairs 98.

[167] Olivier Kraaijeveld, Johannes De Smedt, 'The predictive power of public Twitter sentiment for forecasting cryptocurrency prices' (2020) 65 Journal of International Financial Markets, Institutions and Money 101188.

[168] Kraaijeveld and De Smedt, above n 167.

Beyond the risk that the value of certain cryptocurrencies may drop, there is also a risk that a trader may enter into a transaction on a fraudulent or hacked exchange platform,[169] or be enticed to purchase a new, fraudulent cryptocurrency. In December 2016 BitConnect issued an initial coin offering (ICO) to raise capital for the development of a crypto-token that would use a special algorithm based upon "proof of work" and "proof of stake" – the "bot" – to securely trade Bitcoin. Their ICO promised investors almost double profits and quickly became the fastest-growing crypto ICO at the time, raising its initial price from US$0.17 to US$463 in only a couple of months.[170] Unfortunately, this investment opportunity turned out to be a scam – and charges were brought by the US Securities and Exchange Commission (the SEC). According to the SEC, the promoters of BitConnect collected approximately US$2 billion from retail investors worldwide without delivering on the promised 'profits to be generated by a purported proprietary Bitcoin trading bot.'[171] Given the lack of regulation, the risk that a trader might fall victim to fraud is potentially much higher than it might be for other types of transaction, and there is therefore a need for intervention.

Conversely, it has recently become possible to buy some mainstream cryptocurrencies on PayPal,[172] which makes them more conveniently accessible to the uninitiated market and offers an opportunity to acquire cryptocurrency through an already reputable and regulated organisation. This to some extent lowers the risk for traders and therefore enhances the sacrifice value that they receive. This raises a question about whether all cryptocurrency trading platforms should be regulated, to ensure that all traders benefit from this protection.

Furthermore, various psychological factors may mean that an individual is unable to evaluate the risk of cryptocurrency investment in an entirely rational and objective way. For example: a crypto-exchange platform that appears official (perhaps because its online presence resembles that of a more traditional financial institution) might have the effect of commanding a higher than is justified level of trust in the financial stability of the cryptocurrency that can be traded on that platform;[173] media reports that indicate that others are increasingly investing in cryptocurrency may lead

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[169] Pengcheng Xia and Others, 'Characterizing cryptocurrency exchange scams' (2020) 98 Computers & Security 101993.

[170] 'Bitcoin's fastest growing community issue innovative BitConnect Coin ICO' (*Coin Telegraph,* 18 November 2016) <https://cointelegraph.com/press-releases/bitcoins-fastest-growing-community-issues-innovative-bitconnect-coin-ico> accessed 20 February 2022.

[171] UK Securities and Exchange Commission, 'Digital Asset and "Crypto" Investment Scams – Investor Alert' (*SEC,* 1 September 2021) < https://www.sec.gov/oiea/investor-alerts-and-bulletins/digital-asset-and-crypto-investment-scams-investor-alert> accessed 23 February 2022.

[172] PayPal, 'PayPal Launches the Ability to Buy, Hold and Sell Cryptocurrency in the UK' (2021, August 23 *PayPal Newsroom*) <https://newsroom.uk.paypal-corp.com/2021-08-20-PayPal-Launches-the-Ability-to-Buy-Hold-and-Sell-Cryptocurrency-in-the-UK> accessed on 19 January 2022.

[173] See by way of analogy Stanley Milgram, 'Behavioral Study of Obedience' (1963) 67 Journal of Abnormal and Social Psychology 371; Leonard Bickman, 'The Social Power of a Uniform' (1974) 4 Journal of Applied Social Psychology 47.

new investors to follow suit;[174] and if traders compare cryptocurrencies only with other cryptocurrencies (rather than as against opportunities for investment in other asset classes or schemes that might be available to them), then there is a chance that some cryptocurrencies may seem particularly attractive against a backdrop of others which have proven to be less stable.[175] These considerations all point towards the need for greater regulation of cryptocurrency trading platforms as a mechanism through which to ensure that traders are provided with timely and objective information about the investments they plan to make.

Evidence of existing regulators using existing regulatory frameworks to protect traders in this space is already emerging. For example, the Advertising Standards Agency recently ruled that Arsenal Football Club broke its rules by failing to adequately warn purchasers of its crypto-based fan tokens of the risk of making an investment.[176] However, to date there has only been piecemeal application of such broader regulatory frameworks, and if this trend continues then calls for a holistic legislative approach will surely only intensify.

Conclusion

Some scholars believe that cryptocurrency offers a positive alternative to traditional currencies, which should prompt a rethink of the entire global financial system, and should be regulated accordingly.[177] Others are concerned that over-regulation may in fact strike at the very essence of cryptocurrency (e.g. its anonymity, separation from the state, or reduced transaction costs), and take away its principal benefits.[178] One thing, however, is clear: cryptocurrency poses a multiplicity of new risks to individuals, global economies, and societies more broadly, and its decentralised nature makes it difficult, if not impossible, for individual jurisdictions to adequately mitigate these risks in their own contexts without cross-border collaboration. Accordingly, it seems inevitable that a mixture of international instruments, national legislation, and political commitments may over time be needed to safeguard traders, communities, and economies across the world.

Through a systematic and critical application of customer value theory to the cryptocurrency context, this study has identified a range of potential risks that might warrant such regulatory and/or political invention as the popularity of this new asset

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[174] For an example of the strength of influence media reports of particular behaviour can have on other individuals, even where that behaviour is undesirable, see Kenneth A Bollen and David P Phillips, 'Imitative Suicides: A National Study of the Effects of Television News Stories' (1982) 47 American Sociological Review 802.

[175] Douglas T Kenrick and Sara E Gutierres, 'Contrast Effects and Judgments of Physical Attractiveness: When Beauty Becomes a Social Problem' (1980) 38 Journal of Personality and Social Psychology 131.

[176] Chris Vallance, 'Arsenal fan token posts broke advertising rules, says watchdog' (2021, December 22) *BBC News* <https://www.bbc.co.uk/news/technology-59730984> accessed on 13 January 2022.

[177] Joseph Lee, 'Law and regulation for a crypto-market' in Iris H-Y Chiu and Gadula Deipenbrock (eds), *Routledge Handbook of Financial Technology and Law* (Routledge 2021) 372.

[178] Nicolo Zingales, 'Virtues and Perils of Anonymity: Should Intermediaries Bear the Burden' (2014) 5 Journal of Intellectual Property, Information Technology and E-Commerce Law 1.

class continues to rise. Variously, it suggests that global law and policy makers may wish to consider: fixing international minimum quality standards for cryptocurrencies; explicitly incorporating cryptocurrency within existing regulatory frameworks, for example in relation to investments, gambling, advertising, and/or money laundering, or alternatively establishing equivalent bespoke frameworks for cryptocurrency that achieve the same objectives; taking action to address the underlying issues of financial inclusion, currency devaluation, political instability, and consumer trust, which appear to be turning individuals away from traditional fiat currencies; establishing domestic and/or international regulatory bodies with a remit to govern those who in some way promote or facilitate cryptocurrency exchange; and/or international collaboration to detect and prevent fraudulent and other criminal activity.

Perhaps surprisingly, although this study has identified different explanations and objectives that underpin cryptocurrency use, the recurring thread is one which touches on broader social questions of financial participation, political marginalisation, privacy, and choice. Taking these trader objectives into account, the policymaker must recognise that there is an extent to which cryptocurrencies provide an ethically responsive alternative to the existing system. Beyond its promise of improved efficiency, cryptocurrencies are a response to a long history of dissatisfaction and mistrust in traditional fiat currencies. By proposing an alternative system that disintermediates payments and eliminates a need for "trusted", profit-driven third parties,[179] cryptocurrency offers its biggest contributions – decentralising payment processing and enhancing financial inclusion.

The customer value analysis undertaken in this paper demonstrates that in addition to offering a range of economic benefits – such as reducing transaction costs in international remittances – cryptocurrencies also offer some non-economic benefits, particularly to users concerned about preserving privacy and enhancing participation in the economy. It is in this regard that cryptocurrencies democratise finance by opening the space to new participants, thereby enhancing financial inclusion of previously unbanked or underbanked sections of the population.

The authors therefore argue that any prospective regulatory or statutory intervention which fails to fully understand the aforementioned "values" driving crypto patronage will have adverse implications.[180] Traders risk being left without adequate protection from fraudulent crypto schemes, excluded from meaningful participation in the economy, exposed to infringement of private liberties by tyrannical governments, and/or foreclosed from political participation. Even more fundamentally, any failure of the policymaker to keep pace with technological innovation will ultimately lock this emerging innovative technology into a negative trajectory, preventing society from

[179] Especially considering that these "trusted" third-party financial institutions leverage on consumers' personal payments data to sort and label such consumers in terms of risk, credit worthiness, insurance, mortgages etc.

[180] Vargo and Lusch argue that "value" is 'idiosyncratic, experiential, contextual and meaning laden' – see Stephen L Vargo and Robert F Lush, 'Service-dominant logic: continuing the evolution' (2008) 36(1) Journal of the Academy of Marketing Science, 1.

benefiting from its full potential. In this regard, the authors argue that the policymaker must consider the aforementioned economic and non-economic factors when designing regulatory or statutory controls, and strive to obtain objective knowledge of this innovative technology – assessing its benefits and problems, understanding trader goals, and addressing the very concerns that necessitate crypto use. By so doing, statutory and regulatory intervention can provide holistic protection that focuses on interests such as personal liberty and financial inclusion.

Ultimately, any future regulatory or legal intervention must recognise that, in many respects, cryptocurrency technology is neutral. It is only as good or as bad as those who operate it. Given this fact, any regulatory or legal intervention must not restrict further development. Such attempts will only harm legitimate uses and stimulate financial exclusion while leaving its illicit use largely unaffected.