



GRIFFITH JOURNAL OF LAW & HUMAN DIGNITY

Law and Human Dignity in the Technological Age

GRIFFITH JOURNAL OF LAW & HUMAN DIGNITY

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FINANCIAL EQUALITY, THE IGNORED HUMAN RIGHT: HOW E-CURRENCIES CAN LEVEL THE PLAYING FIELD

ZEINA ABU-MEITA* & NICK INGLIS**

Digitisation of currency is inevitable as less people are using cash, and reliance on plastic, apps and online services is increasing. Anonymity/privacy, equal access to financial services, and monetary sovereignty are but a few issues that arise from digitisation. Since most e-financial services are provided through corporate means, anonymity/privacy have been eroded and also excluded for those who are not target clients, therefore creating a gap in financial equality. Governments could attempt to limit the growing financial inequality by granting their citizens, through the law, universal access to financial services as a basic human right. Human rights, via the law, would then drive the direction of the technology, rather than commercial interests.

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I INTRODUCTION

In times of financial distress, it has become normal practice for commercial banks to avoid a "bank run" by limiting or denying its customers the ability to withdraw funds from their own accounts. The most recent example of this occurred during the Greek debt crisis in 2015: not only did banks close their doors for a week, but Automated Teller Machines (ATMs) across Greece denied citizens access to their own funds. However, financial access is carefully, and more subtly, controlled even in ordinary times. For instance, it is normal to apply for a credit card — Visa or Mastercard — and either get rejected or be placed into a certain category that determines interest rates and credit limits. Even debit cards, which are purposely designed to give bank customers access to their own money, are limited to the type of client the bank deems its customers to be. As societies move to become cashless, denying or restricting access to the financial system effectively limits access to basic human rights such as food and shelter, which increasingly must be paid for electronically; this also has impacts on the ability to be paid a wage or receive social security via electronic funds transfer. At the same time, those who are able to access the financial system do so in ways that cannot guarantee their privacy, and are charged fees for the privilege of having access. To address these two issues — the restriction of access to human rights by those outside the financial system, and the tolls paid in terms of privacy and charges to those within it — this paper discusses financial access as a human right. In the same way that some countries attach human rights to health and wellbeing by ensuring uniform access to medical services via universal healthcare, this paper discusses the concept of attaching human rights to food, clothing and similar matters, as well as the right to privacy, by ensuring uniform access to the financial system via universal financial access.

A Dangers of Access to Financial Services Exclusively Through Corporations

There are dangers when relying on corporations to control how people use and spend their money. The most often discussed and debated issues are privacy, anonymity, tracking, and transaction fees. Cash, however, is much simpler because there is neither cost to access it, nor a way of tracking which bank notes were in a person's possession, or where and how they spent them. Anonymous and physical cash can be the great equaliser

of people, and its anonymity and accessibility are cornerstones of its fungibility.¹ This fungibility, however, is being eroded in several ways. Unbanked people in cashless societies are constrained in their ability to access products and services, even when they possess the physical cash required to purchase them. Credit and debit cards track every cent of every transaction, and charge you for access, not only to credit but also to your own money. This information may be tracked, used, or sold. Corporations providing the digital banking services which hold the information on spending habits are able to tailor services and access fees to clients, therefore creating tiers. A person whose income is limited may be penalised by the bank for not carrying large balances, and those who do are rewarded, creating the second danger — financial inequality.

A poorer individual must pay fees to have a bank account, whereas the wealthier individual can be given reprieve from those fees. The old cliché surfaces: the rich get richer and the poor get poorer. It becomes increasingly difficult to argue that corporations have a duty to ensure financial equality when they are beholden to their shareholders. Their corporate duty is to make a profit, and in addition to the banks' investments, the account holders themselves have become part of the means to that end. The days of banks as just financial intermediaries, connecting multitudes of lenders with small surplus funds (i.e. bank customers with accounts) to well-researched investments requiring large loans, are gone. The research undertaken by banks for determining investment decisions have been supplemented by customer research to assess an appropriate amount to charge lenders of funds — the bank customers. Similarly, banks have a different level of information and skills for undertaking research and comparing investments: this is now supplemented with customer segmentation and behaviour information, gleaned from data-mining tools applied to the vast amount of customer information held in transaction records.²

¹ Bill Maurer, *How Would You Like to Pay? How Technology Is Changing the Future of Money* (Duke University Press Books, Kindle ed, 2015).

² For a bank review of fee-related revenue, see Lawrence J Radecki, 'Banks' Payments-Driven Revenues' (Research, Federal Reserve Bank of New York, 1999); For a study of the profile of commercial banks that profit the most from fees, see David Tennant and Richard Sutherland, 'What Types of Banks Profit Most from Fees Charged? A Cross-Country Examination of Bank-Specific and Country-Level Determinants' (2014) 49 *Journal of Banking and Finance* 178; For a review of customer data mining in the banking industry, see Vikas Jayasree and Rethnamoney Vijayalakshmi Siva Balan, 'A Review on Data Mining in Banking Sector' (2013) 10(10) *American Journal of Applied Sciences* 1160; Srekumar Pulakkazhy and Rethnamoney Vijayalakshmi Siva Balan, 'Data Mining in Banking and its Applications — A Review' (2013) 9(10) *Journal of Computer Science* 1252; For an Australian study that specifically discusses fees and

Banks are now in control of people's money and information, charging them to access the former, and mining the latter, policed primarily by industry self-regulation.³ Self-regulation is of course prone to abuse, as exemplified by a recent Royal Commission in Australia. In that case, the banking industry was rife with the practice of charging fees by automatically debiting accounts for financial advice services that were never provided, with early estimates of \$850 million (AU) in compensation to be paid to Australian account holders.⁴

B Economic Ghettoization & Lack of Equal Access

The lack of economic mobility entrenched in a system run by corporate banks increases the propensity for segments of society to be economically marginalised and placed in groups such as certain genders and racial minorities, which then places them in economic ghettos.⁵ For instance, the same Royal Commission in Australia that recommended an explicit amendment to the Banking Code so that banks would find ways to work with customers in remote areas and/or who could not speak English.⁶ These marginalised groups face economic inequality gaps that often force them to rely on government programs. This compels the government to provide funding for programs to close the gap — a little recognised form of subsidising the corporate banks' business practices.⁷

customer retention, see E Trubik and M Smith, 'Developing a Model of Customer Defection in the Australian Banking Industry' (2000) 15(5) *Managerial Auditing Journal* 199.

³ Priscilla Regan, 'Privacy and Commercial Use of Personal Data: Policy Developments in the United States' (2003) 11(1) *Journal of Contingencies and Crisis Management* 12.

⁴ Section of this essay, see, also; Kenneth Madison Hayne, 'Final Report: Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry' (Report, 1 February 2019) <<https://financialservices.royalcommission.gov.au/Pages/default.aspx>>.

⁵ A good summary of the relationships between economic inequality, economic mobility and segregation can be found in John A Bishop, Rafael Salas and Jacques Silber, *Inequality, Mobility, and Segregation Essays in Honor of Jacques Silber* (Emerald Group Publishing Limited, 2012). In particular, Sologon and O'Donoghue (2012) find a negative relationship between earnings mobility and earnings inequality, and Eberharter (2012) reviews material discussing the intergenerational nature of earnings inequality. See Denisa Maria Sologon and Cathal O'Donoghue, 'Earnings Mobility, Earnings Inequality, and Labor Market Institutions in Europe' in John A. Bishop and Rafael Salas (eds), *Inequality, Mobility and Segregation: Essays in Honor of Jacques Silber* (Emerald Group Publishing Limited, 2012); and Veronica V Eberharter, 'Intergenerational Educational Mobility and Social Exclusion - Germany and the United States Compared' in John A. Bishop and Rafael Salas (eds), *Inequality, Mobility and Segregation: Essays in Honor of Jacques Silber* (Emerald Group Publishing Limited, 2012).

⁶ Recommendation 1.8: Hayne (n 4).

⁷ 'How the Poor Subsidise the Rich: What's Wrong with Overdraft Fees?', *The Economist* (Web Page, 2 August 2010) <http://www.economist.com/blogs/freeexchange/2010/08/money_and_banking>.

C When the Bank Acts as the Governing Body

An investigation of Canadian banking practices revealed how clients are being taken advantage of. TD Canada Trust, one of Canada's Big Five (banks), reported a double-digit increase in profits — \$2.3 billion in the last quarter of 2016 — despite Canada's moribund economy and low interest rates.⁸ In a recent investigation by the Canadian Broadcasting Corporation ("CBC"), current and former employees of TD Bank admitted to breaking the law and being pressured to upsell clients in fear of being fired.⁹ Although TD Bank released a statement after the report,¹⁰ asserting that all employees follow the TD Bank code of ethics, the report itself suggests otherwise.¹¹ Thousands of Canadians had fallen victim to unethical business practices with TD Bank.

Canada's constitution, which includes the Charter of Rights and Freedoms,¹² protects individual citizens' rights. If the Canadian government treated financial access like it treats medical access — universal — they would not be placing the control of individual financial access onto private corporations. The government could assert control on the standardisation of financial access and financial inclusion of its citizens. However, the current system's flaws allows for citizens to become tiered and slotted into different classes because they are just part of a transaction.

D Governments Embracing Digitisation

Estonia has embraced digital technology, in particular providing government services electronically.¹³ Estonia's innovative e-residency service allows anyone in the world who meets certain criteria to become an e-resident of Estonia.¹⁴ E-residents gain access to

⁸ *TD Bank Group Reports Second Quarter 2016 Results* (Report, 25 May 2016) 1.

⁹ Solomon Israel, 'TD Bank on Defensive After CBC Stories, Stock Plunge', *CBC News (British Columbia)* (online, 13 March 2017) <<http://www.cbc.ca/news/business/td-bank-defensive-1.4022394>>.

¹⁰ Erica Johnson, "'I will Do Anything I Can To Make My Goal': TD teller says customers pay price for 'unrealistic' sales targets", *CBC News (British Columbia)* (online, 6 March 2017) <<https://www.cbc.ca/news/canada/british-columbia/td-tellers-desperate-to-meet-increasing-sales-goals-1.4006743>>.

¹¹ Erica Johnson, "'We Do It Because Our Jobs Are at Stake': TD Bank Employees Admit to Breaking the Law for Fear of Being Fired", *CBC News (British Columbia)* (online, 10 March 2017) <<https://www.cbc.ca/news/business/td-bank-employees-admit-to-breaking-law-1.4016569>>.

¹² *Canada Act 1982* (UK) c 11, sch B pt I ('*Canadian Charter of Rights and Freedoms*').

¹³ Eric B Schnurer, 'E-Stonia and the Future of the Cyberstate', *Foreign Affairs* (Web Page, 28 January 2015) <<https://foreignaffairs.org/articles/eastern-europe-caucasus/2015-01-28/e-stonia-and-future-cyberstate>>.

¹⁴ Republic of Estonia, 'Who is Eligible' *Republic of Estonia: E-Residency* (Web Page) <<https://learn.e-resident.gov.ee/hc/en-us/articles/360000625078-Who-is-eligible>>.

European markets through Estonia, which reaps the benefits of the taxes in exchange.¹⁵ Estonia is a proven example of how governments can embrace technology in the digital world to provide services for their citizens.

Governments have a responsibility to vanguard new technologies so that they may regulate them. Since at least one country has already created *electronic residency*, redefining what residency is in terms of a globalised and digitised world, *electronic monetary sovereignty*, in the form of state-backed cryptocurrencies as authorised legal tender, cannot be far behind. Electronic *transactions* need not be revolutionised because they already exist: from the ubiquitous direct deposit, debit and credit card transactions, and online purchasing via services such as Paypal, to online primary and secondary stock markets like Estonia's Funderbeam.¹⁶ What is needed is a revolutionised attitude change to how we see monetary sovereignty and universal financial access.

E Digital Money, E-Currency, & Crypto-Currency

Terms such as “digital money”, “e-currency”, “virtual currency”, and “crypto-currency” are new terms in a nascent field that is still being defined. Their usage to date in the literature and the press has been both interchangeable and inconsistent. The following definitions come from a single author (Jake Frankenfield) writing for Investopedia who, for lack of another source of consistent and authoritative definitions, has become something of a de-facto standard in a number of recent journal articles and working group papers in the legal field.¹⁷

¹⁵ Republic of Estonia, 'Why Estonia Offers e-Residency' *Republic of Estonia: E-Residency* (Web Page) <<https://learn.e-resident.gov.ee/hc/en-us/articles/360000720437-Why-Estonia-offers-e-Residency>>.

¹⁶ Funderbeam, 'Discover, Invest In, and Trade Growth Companies', *Unlocking liquidity for successful investing an open and transparent platform that makes it* (Web page, 2019) <<https://markets.funderbeam.com>>.

¹⁷ For examples of works citing Frankenfield's definitions, see American Bar Association et al, 'Digital and Digitized Assets: Federal and State Jurisdictional Issues', (Web Page, March 2019) <http://www.klgates.com/files/Publication/1697a8c9-566a-48ac-bf6e-ea9373f4541b/Presentation/PublicationAttachment/d17d6b4d-aca5-4296-93c5-1012e92720f8/digital_assets.pdf>; Carol R Goforth, 'How Blockchain Could Increase the Need For and Availability of Contractual Ordering for Companies and Their Investors' (2019) 94(1) *HeinOnline*; Matla Garcia Chavolla, 'Cashless Societies and the Rise of the Independent Cryptocurrencies: How Governments Can Use Privacy Laws to Compete with Independent Cryptocurrencies' (2018) 31(1) *Pace International Law Review*.

The term “digital money” encompasses both familiar electronic payments systems (such as debit cards, credit card, EFTPOS, and Paypal) and newer e-currencies.¹⁸ E-currencies come in two forms: sovereign or Central-Bank-backed Digital Currencies (“CBDCs”), and virtual currencies with no government or central bank backing.¹⁹ Virtual currencies again include the familiar loyalty and rewards schemes such as those used by airlines and department stores, and the newer “crypto-currencies”.²⁰

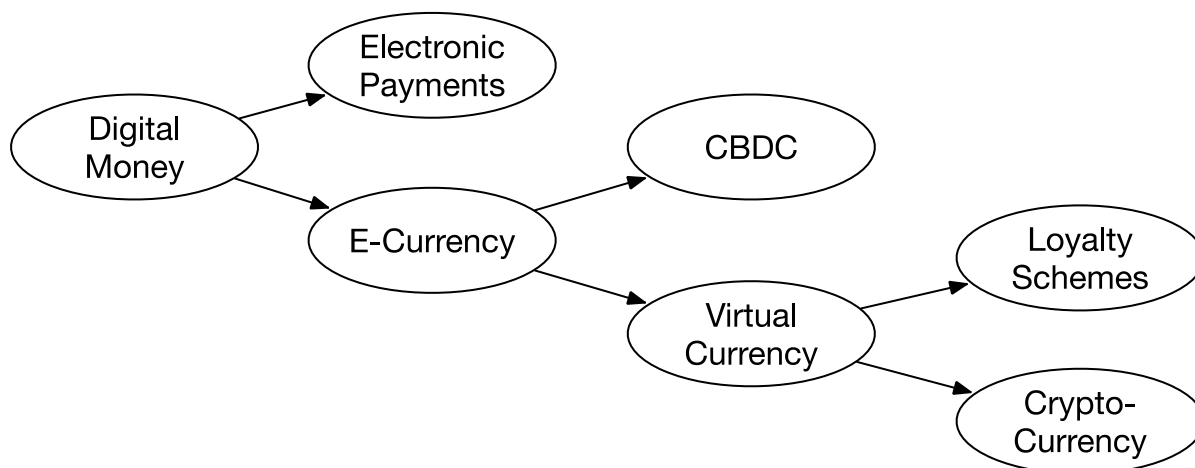


Figure 1: Frankenfield’s taxonomy of digital money definitions

Crypto-currencies are digital virtual currencies that operate independently of any government or central bank and employ encryption to provide both security and regulation on the number of coins in the currency’s ecosystem. The most famous crypto-currency, Bitcoin, relies on Blockchain technology to ensure privacy and pseudonymity; the most attractive feature of Bitcoin.²¹ “Digital money”, however, also encompasses all the familiar payment systems that are simply digitised transactions of government or central bank issued fiat currencies already in existence.²² Presently, most people already

¹⁸ Jake Frankenfield, 'Digital Money', *Investopedia* (Web Page, 8 July 2018)

<<https://www.investopedia.com/terms/d/digital-money.asp>>.

¹⁹ Jake Frankenfield, 'Digital Currency', *Investopedia* (Web Page, 3 May 2018)

<<https://www.investopedia.com/terms/d/digital-currency.asp>>.

²⁰ Jake Frankenfield, 'Virtual Currency', *Investopedia* (Web Page, 3 May 2018)

<<https://www.investopedia.com/terms/v/virtual-currency.asp>>; Jake Frankenfield, 'Cryptocurrency', *Investopedia* (Web Page, 12 February 2019)

<<https://www.investopedia.com/terms/c/cryptocurrency.asp>>. While the authors consider this term to have fallen out of favour, we include it here as it forms part of Frankenfield’s taxonomy.

²¹ 'The Trust Machine: the Technology Behind Bitcoin Could Transform How the Economy Works', *The Economist* (Web Page, 31 October 2015) <<http://www.economist.com/news/leaders/21677198-technology-behind-bitcoin-could-transform-how-economy-works-trust-machine>>.

²² P Panurach, 'Money in Electronic Commerce: Digital Cash, Electronic Fund Transfer, and Ecash' (1996) 39(6) *Communications of the ACM* 45.

use digital money but fail to recognise this, as banks market these transactions as “services” they are providing clients for convenient access to their money,²³ rather than simply their right to use their own money or line of credit as they see fit.²⁴ Fees are then charged to clients who have little choice but to use these services. Credit and debit transactions are both electronic transactions utilising digital money. The difference between the two is that debit transactions are processed immediately, whereas credit transactions happen on a delayed cycle. Here lies the danger in relying on banks to regulate and offer digital money transactions. To access these services, the bank is entitled to the client’s personal information. Purchasing patterns, spending habits, total amount of money available, credit history, and client information are stored in the bank’s profile on clients,²⁵ which the bank justifies as client care. Services are often not available until this information is given, thus privacy and anonymity are weakened as a result. Since banks are able to tailor services to clients who have greater amounts of money to invest, the banks create an “elite” and a “rest” category. These two issues combine to create a need for governments to examine universal financial access, such as giving citizens equal financial opportunities. This attitude toward equal access saves governments from needing to spend money on social programs for sections of society stifled by a lack of economic mobility.

F Universal Financial Care (“UFA”)

The link between digital money, financial marginalisation, universal financial access, and the law, is made explicit in the World Bank’s Universal Financial Access (“UFA”) goal for 2020,²⁶ which shows UFA resting on both legal and financial infrastructures while requiring a range of financial products and inclusive education before being realised. The UFA goal is for adults (who are currently not a part of the formal financial system) to have

²³ Najah Hassan Salamah, 'Impact of Electronic Banking Services on Bank Transactions' (2017) 9(2) *International Journal of Economics and Finance* 111.

²⁴ See, eg, Connie Prater, 'Banks Add New \$3 Fee for Accessing Your Own Money with Debit Card', *Creditcards* (Web Page, 16 August 2011) <<https://www.creditcards.com/credit-card-news/debit-card-monthly-use-activity-fee-charge-own-money-1271.php>>; David Carrig, '\$5 to Access Your Own Money? ATM Fees Jump to Record High and These Cities are the Worst', *USA Today* (Web Page, 3 October 2017) <<https://www.usatoday.com/story/money/personalfinance/2017/10/03/bank-atm-fees-overdraft-money-cash/725188001/>>.

²⁵ Jayasree and Balan (n 2); Pulakkazhy and Balan (n 2).

²⁶ 'UFA2020 Overview: Universal Financial Access by 2020', *The World Bank* (Web Page, 1 October 2018) <<http://www.worldbank.org/en/topic/financialinclusion/brief/achieving-universal-financial-access-by-2020>>.

access to a transaction account for storing their money. This account would allow them to send and receive payments required for people to manage their financial lives. Facilitation of day-to-day living financial services would be available to all people; universal financial care mimicking universal health care. In the same way that universal health care provides access to health services regardless of how sick or healthy, universal financial access would provide access to financial services regardless of how poor or wealthy. Governments would then have to legislate this facilitation as a right for citizens, thus forcing corporate banks to give all their customers a basic level of service. Sweden has initiated steps to create an atmosphere where this would be possible by creating an e-Krona to co-exist alongside the paper krona (see section five). However, these issues are complicated in different types of states. Failed, emerging, and developing states pose their own challenges. An example of each is discussed below in sections two to five.

II GREECE: THE FAILING STATE

A Debt, Austerity, & the Euro

Greece is under austerity measures, due in part to its struggle to collect taxes. Greek officials have been known to shrug off tax evasion as a 'national sport'.²⁷ Prior to adopting the Euro, Greece was able to rely on independent control of its currency to effect seigniorage,²⁸ otherwise known as an 'inflation tax'. However, on adopting the Euro, Greece lost the ability to print its own currency, therefore killing the inflation tax solution.

The austerity measures imposed on Greece in the wake of the debt crisis have exacerbated the economic meltdown Greece is facing.²⁹ This is forcing the Greek government to take measures to reduce public expenditures while trying to encourage

²⁷ 'Greek taxation: A National Sport No More', *The Economist* (Web Page, 3 November 2012) <<http://www.economist.com/news/europe/21565657-greek-tax-dodgers-are-being-outed-national-sport-no-more>>.

²⁸ Seigniorage is the amount of money that a government makes when it prints new bank notes and mints new coins and the commercial banks purchase those banknotes and coins from the central bank. See Paul Thomas, 'Money Manufacture: How Governments Make Money by Making Money', *LinkedIn* (Web Page, 23 November 2015) <<https://www.linkedin.com/pulse/money-manufacture-how-governments-make-making-paul-thomas/>>; Matthias Morys, 'Greece in a Monetary Union: Lessons from 100 Years of Exchange Rate Experience', *VOXEU* (Web Page, 10 May 2016) <<https://voxeu.org/article/greece-s-fundamental-problem-monetary-unions-past-and-present>>.

²⁹ Ian Bremmer and Leon Levy, 'What the World Can Learn from the Greek Debt Crisis', *Time* (online, 29 August 2018) <<http://time.com/5381385/what-the-world-can-learn-from-the-greek-debt-crisis/>>.

economic stimulus, further creating instability.³⁰ As Greece joined the European Union, it compromised its economic independence. The economic gap in Greece widened and the erosion of the middle class is evidenced both in academia and by the middle-class Greeks themselves.³¹

At the height of the crisis, in the summer of 2015, Greek citizens rushed to automated teller machines to withdraw any monies they had available in their accounts. They were promptly blocked from doing so because banks were trying to defend themselves against bankruptcy from the sudden bank run.³² The money in the accounts belonged to the holders of the account — account holders lend money to banks and are thus creditors to the banks — but the banks had control of access. In trying to prevent the banks' own bankruptcies, they forced lay people into bankruptcy instead.

Hypothetically, if those affected were in a government legislated and regulated system based on UFA, those account holders could not be barred from accessing their accounts or funds, and would be protected by depositor insurance that would bail out the account holders, not the banks. This would force banks and governments to operate responsibly to avoid bank runs. This preventative measure would make banks less likely to collapse, or collapse quickly if they do, and would legally prevent a financial blockade of the citizens, so that day-to-day financial access is not disrupted by wider economic factors. In the long term, this may curb the recent rise in economic refugees from states with volatile economic situations. UFA would cushion economic shocks for citizens.

B Economic Independence & Monetary Sovereignty

The problems arising from the loss of monetary sovereignty have been examined by renowned economists such as Joseph Stiglitz and Yianis Varoufakis. Stiglitz highlights that countries which forfeit their own currency for a common currency, such as the Euro,

³⁰ Papadimitriou B Dimitri, Nikiforos Michalis and Gennaro Zezza, 'The Greek Public Debt Problem' (2016) 25(Esp) *Nova Economia* 777; Papadimitriou B Dimitri, Nikiforos Michalis and Gennaro Zezza, 'The Greek Economic Crisis and the Experience of Austerity: A Strategic Analysis' (2013) July *Levy Economics Institute* 1.

³¹ For an example of each, see Georgia Kaplanoglou and Vassilis T. Rapanos, 'Evolutions in Consumption Inequality and Poverty in Greece: The Impact of the Crisis and Austerity Policies' (2018) 64(1) *Review of Income and Wealth* 105; BBC News, 'Greece adopts more austerity measures in bailout bid' *BBC News* (online, 18 May 2019) <<https://www.bbc.com/news/world-europe-39967460>>.

³² AFP, 'Emergency Talks as Greek Exit from Euro Looms', *News.com.au* (online, June 29 2015) <<http://www.news.com.au/finance/economy/emergency-talks-as-greek-exit-from-euro-looms/news-story/90ccca6556da55ba773716eabc9bce40>>.

lose the ability to adjust both their interest rate and exchange rate in the face of economic shocks.³³ On the other hand, Varoufakis highlights the inability for a country to adjust inflation to match economic conditions.³⁴ Varoufakis, as the former finance minister of Greece, is intimately aware of the intricacies of the Greek debt crisis. Stiglitz makes no attempt to hide his disdain for the Euro in his book, *The Euro: How a Common Currency Threatens the Future of Europe*,³⁵ where he states, 'The euro is just a 17-year-old experiment, poorly designed and engineered not to work'.³⁶

Varoufakis takes this further by suggesting a state managed digital currency to remedy Greece's financial woes.³⁷ He argues that Bitcoin, rather than being a viable alternative for Greece, is effectively just another common currency, and too deflationary to act as a replacement for the Euro. Rather, he argues that the EU member states should use Bitcoin-like technology to create their own parallel digital currencies to alleviate these deflationary pressures.³⁸

Just as the EU regulates human rights within the member states, it can be noted that there should be financial rights standards that EU member states would be obligated to comply with. A directive for member states would ensure that UFA would create stability in economically weakened states such as Greece.

C Micro-Currencies for Micro-Economies

The modern state of Greece groups together many islands with the mainland to form the country. Many of these islands are isolated from other islands and the mainland

³³ Joseph E Stiglitz, 'Joseph Stiglitz on Global Economic Instability in the Age of Trump', *The Sunday Edition* (online, 19 February 2017) <<http://www.cbc.ca/radio/thesundayedition/flynn-gate-watergate-stiglitz-on-world-economy-stuart-mclean-s-documentaries-slow-professor-movement-1.3985655/joseph-stiglitz-on-global-economic-instability-in-the-age-of-trump-1.3985663>>.

³⁴ Yianis Varoufakis, 'Digital Economies: Markets, Money and Democratic Policies Revisited' (Conference Paper, The CFA Institute Annual Conference 2014: The Future of Finance, 8 May 2014).

³⁵ Joseph E Stiglitz, *The Euro: How a Common Currency Threatens the Future of Europe* (W W Norton, 2017).

³⁶ Joseph E Stiglitz, *The Euro* (Penguin Books Ltd, Kindle ed, 2017) 294.

³⁷ 'Bitcoin: A Flawed Currency Blueprint with a Potentially Useful Application for the Eurozone', *Yianis Varoufakis* (Web Page, 15 February 2014) <<http://www.yanisvaroufakis.eu/2014/02/15/bitcoin-a-flawed-currency-blueprint-with-a-potentially-useful-application-for-the-eurozone/>>.

³⁸ *Ibid.*

economically. They may rely on tourism, fishing, or the local crop or export, and have little inter-island dependencies.³⁹

Independent and semi-independent micro-economies are being identified and studied on many scales and contexts, from the small micro-economies operating in the Cocos Islands,⁴⁰ to the pervasive micro-economies of India,⁴¹ or those supply-chain micro-economies already forming around private Blockchains.⁴²

These micro-economies could benefit from local, complimentary micro-currencies that act as partner currency to the national fiat one. Each micro-economic region could use its own micro-currency, while allowing free conversion between them for trade between micro-economies. This would strengthen local economies through UFA and digitisation of currency, and also help Greece out of its financial collapse by allowing the locals to trade with each other.

D Remediating Resistance through an Entrenched UFA

The suffering being endured by the Greek people under austerity and the inability to access their own funds highlights the links between human rights, UFA, and monetary sovereignty. Varoufakis and others recommended that EU States make their own parallel digital currencies (CBDCs running “in parallel” with the Euro as legal tender)⁴³ to alleviate these issues, allowing citizens unadulterated access to a financial system and providing funds for economic stimulus.⁴⁴ Varoufakis’ suggestion resulted, however, in him having to leave politics precipitously under the cloud of accusations of treason, which

³⁹ Konstantinos Andriotis, 'Problems of Island Tourism Development: The Greek Insular Regions' in Bill Bramwell (ed), *Coastal Mass Tourism: Diversification and Sustainable Development in Southern Europe* (Channel View Publications, 2004).

⁴⁰ Alan Whitley, *Master Planning the Economy of the Cocos (Keeling) Islands; A Discussion Paper on a Closed System Micro Economy* (Discussion Paper, no 38, 2014).

⁴¹ Sarah Lacy, 'India's Mighty Microeconomy', *Fast Company* (online, 2 September 2011) <<https://www.fastcompany.com/1725661/indias-mighty-microeconomy>>.

⁴² Liesl Eichholz, 'The Rise of Microeconomy Ecosystems; Modelling Medium-of-Exchange Token Microeconomies as Ecosystems', *Centrality* (Web Page, 30 January 2018) <<https://medium.com/centrality/proprietary-currency-tokens-and-the-rise-of-microeconomies-c86674617734>>.

⁴³ For an IMF discussion on CBDCs, including reasons countries may want to use them in parallel with the Euro or other currencies, see Tommaso Mancini-Griffoli et al, *Castling Light on Central Bank Digital Currency* (Report, SDN/18/08, 12 November 2018).

⁴⁴ See, eg, Lorenzo Fioramonti, 'How Complementary Currencies Can Save Europe', *Open Democracy* (online, 12 December 2016) <<https://www.opendemocracy.net/can-europe-make-it/lorenzo-fioramonti/how-complementary-currencies-can-save-europe>>.

were never laid.⁴⁵ This is just one example of the resistance to be encountered by suggesting the disempowerment of central banks (in this case the European Central Bank, which controls the supply of Euros) and commercial banks (which control financial access); both of which are independent entities that governments rely on to provide the financial infrastructure for its citizens.⁴⁶ This resistance can only be countered by enshrining UFA (through state backed e-currencies) in individual citizenship rights. This resistance is taken to the extreme in the case of Palestine discussed below.

III PALESTINE: THE EMERGING STATE

E-currencies in emerging states, such as Palestine,⁴⁷ can fortify the enshrining of economic equality as an element of individual rights as well as collective human rights.

A Politicisation of the Palestinian Identity & Economic Sovereignty

'Apartheid', 'segregation', and 'separation' are terms used in a recent controversial UN report to describe the situation in Palestine.⁴⁸ Dual legal systems based on race and religion exist in the same areas.⁴⁹ Palestinians are often at the mercy of Israeli governing bodies that regularly deny essential zoning, building, and business permits required for an economy to grow. This is in contrast to the micro-economies of illegal Jewish-only settlements in the West Bank of Palestine, which are flourishing. Israel dominates and controls every aspect of Palestinian life, including what currency is allowed to be used,

⁴⁵ Helena Smith, 'Yanis Varoufakis May Face Criminal Charges Over Greek Currency Plan', *The Guardian* (online, 30 July 2015) <<https://www.theguardian.com/world/2015/jul/29/yanis-varoufakis-may-face-criminal-charges-over-greek-currency-plan>>.

⁴⁶ Commercial banks are private entities. Reserve banks are typically government or publicly owned independent entities. For instance, see Reserve Bank of Australia, 'Governance Reserve Bank of Australia', *Reserve Bank of Australia* (Web page, 2019) <<https://www.rba.gov.au/about-rba/governance.html>>.

⁴⁷ Even the name "Palestine" can be controversial. One hundred years ago (1917), the British government decided to authorise a homeland for Jews in Palestine (the Balfour Declaration). Thirty-one years later, and shortly after the Holocaust, the British colonial government in Palestine retreated, leaving the country in the hands of Jewish militias, later becoming the army of the country established as the State of Israel. Since then there have been numerous attempts and rebellions by Palestinians to establish their sovereignty, independence, and national rights. Palestinians from various factions have employed various methods to achieve their rights, the latest method being asserting their rights and narratives in the digital world.

⁴⁸ Richard Falk and Virginia Tilley, *Israeli Practices Towards the Palestinian People and the Question of Apartheid*, (Report E/ESCWA/ECRI/2017/1, 2017).

⁴⁹ Marwan Darweish, 'Human Rights and the Imbalance of Power: The Palestinian-Israeli Conflict' in Beatrix Schmelzle and Véronique Dudouet (eds), *Human Rights and Conflict Transformation: The Challenges of Just Peace* (Berghof Conflict Research, 2010).

what goods enter Palestinian areas and are allowed to be sold,⁵⁰ and so forth. As Palestinians have no economic independence, it becomes easy for the world and other governing bodies to dismiss Palestinians' concerns. Palestine is not a large free-trade partner and does not provide other governments with mutual benefit economically. There is no benefit to standing up for Palestinian human rights when Israel provides what Palestine cannot. To combat this, Palestinians have created a voice through social media and intersectional solidarity. One example of this is access to the services that PayPal offers. PayPal in 2016 was available for settlers living in illegal outposts and settlements in the West Bank but unavailable for Palestinians in the West Bank/Gaza:⁵¹ same area, same currency, different access. The question arises as to how an internet platform could work in some areas but not in others, which are literally meters apart.⁵² A spokesperson for start-up accelerator Gaza Sky Geeks (GSG) stated:

GSG is a major work hub for start-ups and freelancers in Gaza — payments are one of the toughest issues for them. After working tirelessly to win business in the global marketplace, they then have to pay steep fees for wire transfers or foreign banks to get paid. PayPal opening here is one of the most immediately impactful moves that could be done to support the economy here. Gazans we work with can't understand why PayPal serves Israelis living in the West Bank and is open for business in countries like Yemen and Somalia, but not here. Businesses in Gaza and the West Bank just want access to the same opportunities PayPal affords to the other 200 countries and territories they serve. Stifling access creates a steep disadvantage.⁵³

⁵⁰ For examples of issues bringing "dual use" items into Palestinian areas, see 'Improvements to the Mechanism for the Import of Restricted Items to Gaza Likely to Facilitate Implementation of Humanitarian Interventions', *United Nations Office for the Coordination of Humanitarian Affairs* (Web Page, 18 March 2019) <<https://www.ochaopt.org/content/improvements-mechanism-import-restricted-items-gaza-likely-facilitate-implementation>>; 'New System Regulating the Import of Building Materials', *United Nations Office for the Coordination of Humanitarian Affairs* (Web Page, September 2014) <<https://www.ochaopt.org/content/new-system-regulating-import-building-materials>>; 'Responding to Emerging Humanitarian Needs During the Hostilities', *United Nations Office for the Coordination of Humanitarian Affairs* (Web Page, August 2014) <<https://www.ochaopt.org/content/responding-emerging-humanitarian-needs-during-hostilities>>; 'Gaza: Shortage of Sanitation Infrastructure Raises Health and Environmental Concerns', *United Nations Office for the Coordination of Humanitarian Affairs*, (Web Page, 4 July 2016) <<https://www.ochaopt.org/content/gaza-shortage-sanitation-infrastructure-raises-health-and-environmental-concerns>>.

⁵¹ Mike Butcher, 'PayPal Brushes-off Request from Palestinian Tech Firms to Access the Platform', *TechCrunch* (Web Page, 9 September 2016) <<https://techcrunch.com/2016/09/09/paypal-brushes-off-request-from-palestinian-tech-firms-to-access-the-platform/>>.

⁵² Falk and Tilley (n 48).

⁵³ Butcher (n 51).

B Fragmentation of the Population & Economic Isolation

Because the state of Israel was created in the midst of chaos, massacres, and the expulsion of the existing Palestinian populations, the 750,000 (approximately) refugees spread seeking refuge and safety across many neighbouring nations. Fragmented, the population only had one unifying element: their Palestinian identity.

There are at least eight places with concentrations of Palestinian diaspora/refugee populations: Gaza, West Bank, Jordan, Syria, Egypt, Lebanon, the UAE, and Israel.⁵⁴ However, due to the political situation, they are isolated from each other and rely on the fiat currencies of the places where they reside or are interred. Due to the lack of civil rights and inability to work freely, many of these populations have micro-economies.⁵⁵ In Lebanon, the refugees rely on souks and markets inside the refugee camps which they are scarcely permitted to leave.⁵⁶ In Gaza, because of the siege, they have no import and export ability, and have therefore developed a self-reliant micro-economy. Forced to trade in different fiat currencies and being physically isolated from other Palestinian populations, they are left with but one solution to be able to trade with each other across physical borders: e-currency. An e-currency ecosystem where each group could use a local e-currency, the properties of which adjust to meet the nature of the local economy and which is freely exchangeable with the other local e-currencies in the ecosystem, would serve to integrate physically and economically disparate entities into one cultural economic entity. Creating a digital currency tying all seven sectors through digitisation cuts out the occupation and real-life borders. Palestinians could use the digitised economy they created to forge their own e-rights economically which would aid in

⁵⁴ 'Survey of Refugees' *BADIL Resource Center for Palestinian Residency and Refugee Rights* (Web Page, 2017) <<http://www.badil.org/en/publication/survey-of-refugees.html>>; UNRWA, 'Palestine Refugees', *UNRWA* (Web page, 2019) <<https://www.unrwa.org/palestine-refugees>>.

⁵⁵ Christian Aid, 'Palestinians' Right to Work in Lebanon', *Christian Aid* (Web Page, 3 June 2019) <<http://www.christianaid.org.uk/whatwedo/eyewitness/middleeast/lebanon-palestinian-right-to-work.aspx>>; International Labour Organization, 'Palestinian Employment in Lebanon: Facts and Challenges' (Report, International Labour Organization, 2012); Jessica Purkiss, 'The Palestinians of Lebanon; a Life of Curtailed Rights and Limited Opportunities', *Middle East Monitor* (Online, 24 November 2014) <<https://www.middleeastmonitor.com/20141124-the-palestinians-of-lebanon-a-life-of-curtailed-rights-and-limited-opportunities/>>; UN Office for the Coordination of Humanitarian Affairs, 'Illegal Discrimination Against Palestinians in Lebanon', *The Electronic Intifada* (online, 17 October 2007) <<https://electronicintifada.net/content/illegal-discrimination-against-palestinians-lebanon/7184>>.

⁵⁶ UNRWA, 'Who We Are', *United Nations Relief and Works Agency for Palestine Refugees in the Near East* (Web Page, 2019) <<https://www.unrwa.org/who-we-are>>.

creating a climate to foster real rights. Not unlike the illegal settlements in the West Bank which create an illusion of being part of Israel where:

...state ministries provide support for their planning, funding, building and servicing; some, such as the Ministry of Construction and Housing and the Ministry of Agriculture and Rural Development, have been entirely committed to doing so. They also offer financial incentives for Jews to move to the settlements, including interest-free loans, school grants, special recreational facilities, new office blocks, agricultural subsidies, job training and employment guarantees. State complicity is further demonstrated by measures to integrate the economy, society and politics of Jewish settlements into those of Israel, generating seamless travel and electricity networks, a unified banking and finance system for Jews, Jewish business investment, and, in particular, a customs union.⁵⁷

It is likely the banks in some of the countries with Palestinian communities would retaliate against such developments by threatening to close the accounts of any merchant who accepts the new currency.⁵⁸ However, as many of the Palestinians are already unbanked and are living in multiple uncooperative jurisdictions, it is unlikely that any piecemeal action by the banks in the countries involved will damage the system as a whole; rather, it would serve to highlight to the world both the racial injustice being carried out on parts of these countries' populations, and exactly the kind of financial blockade that the new currency system is trying to bypass. If the new currency also had other advantages over the local fiat currencies, (for example, ease of use, rewards etc.) this move could actually hasten its uptake.

Palestine does not have to band together with other nations to create an economic foundation for UFA as long as the populations are unified through e-currency, unlike the developing nations of West Africa.

⁵⁷ Eyal Benvenisti, *The International Law of Occupation* (Oxford University Press, 2nd ed, 2012); Falk and Tilley (n 48).

⁵⁸ There are already many known cases where banks have closed the accounts of, and refused to open accounts for, legitimate cryptocurrency traders; see, eg, Mandie Sami, 'Bitcoin Traders Accuse Australia's Biggest Banks of Declaring War on Cryptocurrencies', *ABC News* (online, 22 September 2015) <<https://www.abc.net.au/news/2015-09-22/bitcoin-traders-claim-discrimination-by-australias-banks/6795782>>.

IV WEST AFRICA: THE DEVELOPING STATES

A Tunisia

Tunisia, birthplace of the Arab Spring, has been reforming to create a stable nation. After partnering with Estonia's e-Governance Academy to create e-governance reforms,⁵⁹ Tunisia turned its attention to the monetary system, becoming the first African nation to use Blockchain technology to digitise its currency, the eDinar plus.⁶⁰ Tunisia is in collaboration with Swiss-based fin-tech company — Monetas — to create national uniform access to mobile money transfers, managing identification documents, and paying bills through apps delivered by Tunisia Post.⁶¹ Tunisia Post has full control of the issuance of the eDinar to prevent illegal transactions. Although these changes in Tunisia seem positive, there are aspects of these collaborations that must be considered. A quick search of Monetas reveals that, besides being a Swiss based fin-tech company, their online security certificate is based in Antigua and Barbuda, both of which are tax havens. If Monetas does not find a certain quarter as profitable as their shareholders would like, there is nothing preventing them from limiting Tunisians' access the way banks in Greece did to Greeks.

B West African Monetary Union

The West African Economic and Monetary Union (WAEMU) is comprised of eight countries: Benin, Burkina Faso, Cote d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo, in the process of forming a customs and currency union in order to promote economic integration in countries currently using the Financial Community of Africa ("CFA") Franc. Senegal is leading the way by introducing the first e-currency based on its national currency.⁶²

⁵⁹ 'Tunisia Learns from Estonia to Develop Their e-Government' *e-Governance Academy* (Web Page, 2018) <<https://ega.ee/news/tunisia-learns-from-estonia-to-develop-their-e-government/>>.

⁶⁰ Sarah Yerkes and John Polcari, 'An Underexploited Opportunity', *Carnegie: Middle East Center* (Online, 20 December 2017) <<https://carnegie-mec.org/diwan/75071>>.

⁶¹ 'Tunisia to Become First in the World to Issue Its National Currency Via Advanced Cryptofinance Tech', *TechMoran* (Web Page, 21 December 2015) <<https://techmoran.com/2015/12/21/54824-2/>>; 'Tunisia is the First Country to Put National Currency on Blockchain', *FTReporter* (Web Page, 29 November 2016) <<http://ftreporter.com/tunisia-is-the-first-country-to-put-national-currency-on-blockchain/>>.

⁶² Joseph Young, 'Senegal Introduces Cryptocurrency Based on its National Currency', *The CoinTelegraph* (Web Page, 27 November 2016) <<https://cointelegraph.com/news/senegal-introduces-cryptocurrency-based-on-its-national-currency>>; and Linsey Chutel, 'West Africa Now Has Its Own Digital Currency',

There are three issues with the West African Monetary Union in general, and Senegal's currency in particular. Firstly, it is a monetary union — with all the attendant economic and sovereign issues that Greece faced with the Euro in the European Union. Secondly, access is provided by a company, *ecurrency.net* — a Dublin based company with technology specifically designed to be used by central banks — rather than being a public system via a Blockchain.⁶³ Thirdly, the scheme relies on a centralised banking system rather than a decentralised one, again via a Blockchain. This would twice remove control from the members of the WAEMU — by the technology company and by the centralised bank, both of which are independent corporations. It even appears that the currency issuing authority may be the same corporation providing access. This will take all control away from the member countries and, with access and issuing under private control, personal details may be used to create tiers of access to services, therefore defeating the central purpose of UFA through e-currency.⁶⁴

V SWEDEN: THE STABLE STATE

Sweden's central bank, the Riksbank, has recently begun a project to investigate the possibility of issuing e-kronor.⁶⁵ Sweden's reasons for conducting this investigation are primarily twofold. First, it has noted a steady decrease in cash use over several years, and has surmised that this has been caused by the uptake in e-payments and e-transactions. Second —and more importantly — the Riksbank has stated: 'The private sector is reducing utility and access to banknotes and coins for the general public and may, ultimately, determine access to central bank money and payment methods'.⁶⁶ That is, the Riksbank is specifically concerned that public access to central-bank-issued cash is being reduced by commercial banks who, presumably, no longer find this an important part of their business models, and are not concerned with the effect of reduced access on vulnerable segments of the population.

Quartz Media LLC (online, 28 December 2016) <<https://qz.com/872876/fintech-senegal-is-launched-the-ecfa-digital-currency/>>.

⁶³ 'Digital Fiat Currency Issued by the Central Bank', *Ecurrency.net* (Web Page, 2015) <<https://www.ecurrency.net>>; and 'eCurrency Mint', *Omidyar Network* (Web Page, 2016) <<https://www.omidyar.com/investees/ecurrency-mint>>.

⁶⁴ Eric Piscini and Simon J Lapscher Rosenberg, 'State-Sponsored Cryptocurrency: Adapting the Best of Bitcoin's Innovation to the Payments Ecosystem' (Report, *Deloitte Development LLC*, 2015).

⁶⁵ Sveriges Riksbank, 'Riksbankens e-krona 14 March 17 Project Plan' (Report, Riksbank, 2017).

⁶⁶ *Ibid.*

Riksbank is careful to note that the e-kronor, if it goes ahead after its decision in late 2019, will complement, rather than replace, cash. In particular, it specifies that it does not intend the e-kronor to be a new monetary policy instrument, but will be investigating its impact on both monetary policy and seigniorage.⁶⁷ By responding to the observation that ‘...there is a large number of people who for various reasons cannot, do not want to have or do not get access to the commercial banks’ payment methods’,⁶⁸ the Swedish government would effectively use the e-kronor to combat the commercialisation of currency access by banks and ensure promotion of UFA for its citizens.

VI CRYPTO-CURRENCY & UFA

There are two key technologies behind the technical success of crypto-currencies like Bitcoin, as opposed to just an e-currency, that make crypto-currencies suitable for UFA; namely, the ledger system known as the Blockchain and the monetary policy system. In Bitcoin, this system is the “proof of work” system, but there are alternatives better suited for UFA.

A The Blockchain

The core function of the Blockchain is to be an electronic transaction ledger, recording the order and details of electronic transactions, which is similar to how a paper ledger would record the details of physical transactions.⁶⁹ While this functionality is itself unremarkable, it is the way it achieves it that promises, and also threatens, to be so disruptive to economic institutions.

Firstly, unlike a normal physical or electronic transaction ledger, the identities of the participants in each transaction are typically encrypted.⁷⁰ This ensures that the Blockchain itself does not have to be held privately as would a normal ledger. However,

⁶⁷ Ibid.

⁶⁸ Daniel Dickson, 'Swedish Central Bank Eyeing e-Currency', *Reuters* (online, 16 November 2016) <<http://mobile.reuters.com/article/idUSL8N1DH3MM>>.

⁶⁹ Stephen Wilson, 'Blockchain Really Only Does One Thing Well', *The Conversation* (Online, 20 July 2016) <<http://theconversation.com/blockchain-really-only-does-one-thing-well-62668>>.

⁷⁰ Arvind Narayanan et al, *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction* (Princeton University Press, 2016).

having access to the Blockchain does not in itself reveal the identities of the sellers and buyers recorded.

Secondly, unlike a normal physical or electronic transaction ledger, the Blockchain is publicly distributed.⁷¹ Copies of the Blockchain are held by the computers of all market participants and are updated in real time. This means that the ledger and its information is not owned or controlled by any bank, exchange, corporation, or government. This makes it immune to monopolisation by any central party as there is no central “master” repository to control. Further, it is immune to destruction by a hostile power as there is no master computer or office that can be destroyed.

Thirdly, unlike a normal electronic transaction ledger, the existing Blockchain records are unalterable.⁷² As the Blockchain exists on a large number of privately-owned machines, any attempt to alter an existing transaction will simply make one copy of the Blockchain different to the rest. This difference is detected and “voted down” by the majority of machines in the normal operation of the Blockchain network.

Fourthly, Blockchains are not limited to crypto-currency transactions. Transactions can also involve electronic shares, electronic bonds, electronic documents, electronic votes and “smart contracts” with guaranteed non-repudiation.⁷³

B Money Policy

As unbacked currencies, crypto-currencies use a variety of schemes so that their coins are seen as holding value. The most famous of these, Bitcoin, has the strategy of emulating the so-called ‘Gold standard’.⁷⁴ Gold standard monetary systems rely on two key properties of gold — its scarcity and its indestructibility.⁷⁵ These two properties mean that the amount of available gold in the world rises slowly and never falls — perfect for a low-inflation economy. Bitcoin emulates this in that the number of new coins in the system grows at an ever-decreasing rate, although Bitcoin has been designed to stop releasing new coins once 21 million have been released. This is excellent for avoiding

⁷¹ *Ibid.*

⁷² *Ibid.*

⁷³ Pavel Malstev, 'A Next-Generation Smart Contract and Decentralized Application Platform', *GitHub* (Web Page, 4 March 2019) <<https://github.com/ethereum/wiki/wiki/White-Paper>>.

⁷⁴ Varoufakis (n 37).

⁷⁵ Laurence S Copeland, *Exchange Rates and International Finance* (Pearson, 5th ed, 2008).

government manipulation but detrimental for growing economies, and consequently makes seigniorage impossible. Bitcoin's system, implemented via a "proof-of-work" algorithm, suffers the additional issue that rewards tend to go to those people or entities with the most computer hardware at their disposal, resulting in an egregious waste of electrical and computing power, a time delay in issuing new blocks, and a concentration of Bitcoin wealth with the already wealthy. Other crypto-currencies use other systems, the most notable being Ethereum's proposed proof-of-stake system, which certainly uses less computer hardware and power, and results in faster generation of new blocks, but still suffers the same concentration of wealth issue.⁷⁶ This common issue means that these digital monetary policies are not amenable to improving economic mobility.

C Universal Financial Access as a Human Right

The understanding of what is a human right is evolving according to constantly shifting societal values. Creating a foundation for Universal Financial Access as a human right would require two steps. The first step would be its declaration on an international level, for which no new framework would need to be created. The United Nations' Universal Declaration of Human Rights ("UDHR")⁷⁷ has sections ready for allocation to this right if and when it is recognised as such. It is sometimes argued that since countries have consistently invoked the UDHR for years, it has become customary international law and therefore binds them regardless of whether they have ratified it in their countries.⁷⁸ Nevertheless, it still leaves a gap for countries such as the United States, Saudi Arabia and Israel, who either abstained, did not ratify, are not signatories of, or whose courts have opposed this interpretation.⁷⁹ This is why step two, implementation of UFA at the state level, is required.

The articles in the UDHR that could apply to Economic Rights include:

⁷⁶ Aeternity, 'Proof of Work vs Proof of Stake', *Aeternity* (Web Page, 10 August 2018) <<https://blog.aeternity.com/proof-of-work-vs-proof-of-stake-79d9b1e5e529>>.

⁷⁷ *Universal Declaration of Human Rights*, UN GAOR, UN Doc A/810 (10 December 1948).

⁷⁸ Hurst Hannum, 'The UDHR in National and International Law' (1998) 3(2) *Health and Human Rights* 144.

⁷⁹ For a US example, see *Sosa v Alvarez-Machain*, 542 03–339, US 692 (2004); for a discussion of international rights treaties in Muslim states including Saudi Arabia, see N Abiad, *Sharia, Muslim States and International Human Rights Treaty Obligations: A Comparative Study* (British Institute of International and Comparative Law, 2008).

Article Two:

Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status. Furthermore, no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any other limitation of sovereignty.⁸⁰

'Property' and 'other status' could be understood to include a Universal Financial access right.

Article Four:

No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms.⁸¹

One of the defining aspects of slavery is that the victim works without remuneration - see the discussion under Article twenty-three below. Of note here is the recent UN recognition that the unbanked are among the most susceptible to slavery despite its prohibition,⁸² and the identification, by Hong-Kong based anti-slavery groups, of blockchain-based identification, payments and smart contracts as tools for fighting various forms of modern slavery.⁸³

Article Seventeen:

(1) Everyone has the right to own property alone as well as in association with others.

(2) No one shall be arbitrarily deprived of his property.⁸⁴

Firstly, money can be seen as property. Secondly, property usually cannot be purchased without access to one or more financial services. Being denied access to these services effectively denies the right to own property.

⁸⁰ United Nations (n 77).

⁸¹ Ibid.

⁸² James Cockayne and Julie Oppermann, 'Financial Sector Compliance to Address Modern Slavery and Human Trafficking' (Secretariat Briefing Paper, No 1, *Financial Sector Commission* 2018).

⁸³ Mekong Club, 'Using Blockchain to Combat Modern Day Slavery' (Report, The Mekong Club 2018).

⁸⁴ United Nations (n 77).

Article Twenty-one:

(2) Everyone has the right of equal access to public service in his country.⁸⁵

Financial access needs to be seen as a public good, like Universal health care in Canada.

Article Twenty-Three:

(2) Everyone, without any discrimination, has the right to equal pay for equal work.

(3) Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection.⁸⁶

‘Equal pay for equal work’ implies equal access to the payment systems being used. Unless employers can be forced to pay unbanked or underbanked workers with cash, they will naturally be disinclined to employ workers who are difficult to pay, or be inclined to pay them less than ‘just and favourable remuneration’. This article therefore implies unencumbered access to payment systems as a human right.

Article Twenty-five:

(1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.⁸⁷

Once again, access to ‘necessary social services’ implies unencumbered access to the banking system and payment systems so that these necessary services can be delivered.

The next step, after recognition on an international level, would involve state influence. Due to factors such as non-signatory countries and the declaration not being binding on citizens in their countries — assuming the parties are not signatories and do not ratify international agreements into domestic law — there is a need for constitutional clauses

⁸⁵ Ibid.

⁸⁶ Ibid.

⁸⁷ Ibid.

or legal frameworks to be put in place. This ensures financial access is seen as a public good and human right for all (that is, universal) rather than as a private good.

An excellent elucidation of the differences between the two approaches — universal vs public/private — can be seen in a recent comparison of healthcare in Canada and Australia by McDonald and Tuckett.⁸⁸ Canada's Charter of Rights and Freedoms ensures constitutionally that healthcare is seen as a public good. A two-tier healthcare system is illegal, ensuring that healthcare is universal and equal for all, and it is the government's responsibility to ensure so. However, in Australia, it is the two-tier system that is enshrined constitutionally, effectively ensuring that healthcare provision can never be universal.⁸⁹ The touted gains of the two-tier system, where the private system should take the load off the public system and serve those patients the public system cannot reach, have not eventuated. Rather, the opposite has occurred — wait times in the public system are no better in Australia than in Canada, and the private system takes the least critical and most easily accessible patients in order to increase profits, leaving the critical and hard to access patients for the public system to deal with at the public's expense.

This is the crux issue for any state wishing to implement UFA, either in accordance with an enhanced UDHR or independently. They will need to ensure that financial access is mandated as a public good constitutionally, not as a private good, to become a universal publicly accessible good rather than the tiered private good, including unbanked and underbanked people that already exist.

This still leaves the problems associated with diaspora communities and stateless people — such as the case of the Palestinians described earlier. Purely state-level implementations of UFA would still prevent these people from accessing financial services which brings us back to step one, the international definition of financial access as a human right. Having financial access internationally recognised and accepted as a foundational right enables the other already accepted rights, would allow these people to access financial systems which transcend borders.

⁸⁸ Fiona McDonald and Stephen Duckett, 'The Public/Private Health Service Divide: An Australian and Canadian Comparison' (Speech, ACSANZ Canadian Studies Symposium, Brisbane, 15 March 2019).

⁸⁹ *Ibid.*

D Universal Financial Access — Requirements

From the above review of UFA as a human right and how UFA might operate in failed, emerging, developing, and stable states, we find that the minimum requirements for a cryptocurrency ecosystem to enable UFA would be:

1. Accessible to all people in a region with a smartphone, card, or other mechanism, so that each region's banked and unbanked people — citizens, visitors, refugees, and the stateless — can participate economically;
2. Ability to operate as a parallel currency to the fiat currency in each region;
3. Ability for cryptocurrencies in the ecosystem to adjust to different economic conditions in different regions, so that each cryptocurrency's value does not become disconnected from its function as a means of exchange in each region;
4. Resilience against monopolisation and attack, whether security, economic, or physical;
5. Acceptance of the ecosystem as a whole as a mechanism for enabling UFA as a human right, preferably in an enhanced UDHR.

Additionally, a state-based and state-backed cryptocurrency,⁹⁰ would have the following additional desirable requirements:

6. The ability to be used for tax collection, either through seigniorage or otherwise, and to fight tax evasion via the nonrepudiation mechanisms built into blockchains;
7. The ability to be used as a mechanism for providing depositor guarantees for (normal) bank account holders.⁹¹

Each of these seven points has ramifications on: how account holders are identified; the legality and economics of parallel currencies; how economic regions are identified; how the competing interests of privacy and transparency are balanced; the legal, political and logistic issues around amending the UN UDHR; the legal, monetary, tax and political

⁹⁰ Piscini and Rosenberg (n 64).

⁹¹ Committee on Payments and Market Infrastructures and Markets Committee, 'Central Bank Digital Currencies' (Report, *Bank for International Settlements*, March 2018), specifically talks about central bank digital currencies (CBDC) as an extra-bank competitor to guaranteed deposit accounts. Our proposal here is for a CBDC as an extra-bank mechanism for providing government depositor guarantees.

implications of state-backed cryptocurrency; and the legal and financial implications of cryptocurrency-based depositor guarantees. Each of these requirements and their ramifications will form the subjects of research in the near future. The need for this research is urgent as the underlying technologies are being developed at an ever-accelerating rate and much development is being funded by exactly those banks and financial institutions that stand to lose the most by UFA. The legal and economic groundwork must be done quickly before the infrastructure is fixed irreversibly on maintaining incumbent interests ahead of human rights.

VII CONCLUSION

Throughout this comparison, there has been an emphasis on governments capitalising on digitisation to ensure equal financial access through e-currency to their citizens. If UFA were an enshrined individual human right, protected in a constitution's Bill of Rights or Charter of Rights at a state level, and the UN UDHR at an international level, cryptocurrency would be the ideal technology to implement it.

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