

**CALIFORNIA WESTERN INTERNATIONAL
LAW JOURNAL**

VOLUME 51 SPRING 2021 NUMBER 2

**REVENGE OF THE STATE: BLOCKCHAIN AND THE
FUTURE OF LAW, GOVERNANCE, AND MONETARY POLICY
VIRTUAL SYMPOSIUM
FEBRUARY 15, 2021**

**KEYNOTE ADDRESS—THE EMPIRE STRIKES BACK?: BITCOIN,
LIBRA, COVID-19, AND CENTRAL BANK DIGITAL CURRENCIES**

DOUGLAS W. ARNER*

Good morning to everyone and thank you for joining today. I would first like to begin by thanking the entire team at the *California*

* Professor Douglas W. Arner is the Kerry Holdings Professor in Law and Director of the Asian Institute of International Financial Law at the University of Hong Kong; Senior Fellow at Melbourne Law School, University of Melbourne; and Non-Executive Director of the Aptorum Group [NASDAQ: APM]. Professor Arner led the development of one of the world's largest massive open online courses ("MOOC") on FinTech, Introduction to FinTech, launched on edX in May 2019, and now with over 90,000 learners and spanning almost every country in the world, as part of edX's first online Professional Certificate in FinTech. Professor Arner holds a B.A. degree from Drury College, a JD degree (*cum laude*) from Southern Methodist University, an LLM degree (with distinction) in banking and finance law from the University of London (Queen Mary College), and a PhD degree from the University of London. This Essay is a lightly edited version of Professor Arner's keynote speech at the *California Western International Law Journal's* Virtual Symposium, delivered on February 15, 2021. The keynote in turn draws on a longer paper: *After Libra, the Digital Yuan and Covid-19: Central Bank Digital Currencies and the New World of Money and Payment Systems*, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3622311.

242 CALIFORNIA WESTERN INTERNATIONAL LAW JOURNAL [Vol. 51]

Western International Law Journal for putting this event together. Congratulations on a really good event and a great turn out. One of the positive things that has come out of the COVID-19 experiences of the past year or so, is the ability to have events like this Symposium without jetlag. Time zones can be a challenge, but this is one area where technology really has helped make a difference in the context of dealing with all of the many challenges that have come out of this crisis over the past year. The topic of this Symposium is especially relevant, given how we have seen technology drastically alter even the more ordinary aspects of our day-to-day lives.

Today we are seeing an incredible evolution in the context of digital finance and a range of other technologies. Consequently, we are seeing a number of responses, in some cases from States, and in others, from major companies both in the financial sector and the technology sector. This means that the decade of the 2020s from the standpoint of finance and technology is looking very different from the way the previous decade looked. This speech addresses blockchain, money and payments, as well as some of the big picture trends we are likely to see globally over the next decade. My analysis here derives from a range of other recent papers looking at stablecoins, crypto-assets, central bank digital currencies (“CBDCs”), and Libra.¹

In considering the evolution of finance and technology, the two have always been co-developmental.² When we think about the earliest histories of settled civilizations, amongst the earliest technologies that evolved were record systems that kept track of payments and debts.³ Minting coinage was another technology. These

1. The Libra crypto-currency was recently rebranded as “Diem.” See The Diem Association, *Announcing the name Diem. Executive leadership in place in preparation for launch*, DIEM (Dec. 1, 2020), <https://www.diem.com/en-us/updates/diem-association/>; see also Nikhilesh De, *Libra Rebrands to ‘Diem’ in Anticipation of 2021 Launch*, COINDESK (Dec. 1, 2020), <https://www.coindesk.com/libra-diem-rebrand>. This Essay uses the terms Libra and Diem interchangeably. See Dirk A. Zetsche, Ross P. Buckley & Douglas W. Arner, *Regulating Libra*, 41 OXFORD J. LEGAL STUD. 80 (2021), <https://academic.oup.com/ojls/article/41/1/80/6031989?login=true>.

2. See Douglas W. Arner, János Barberis & Ross P. Buckley, *The Evolution of Fintech: A New Post-Crisis Paradigm?*, 47 GEORGETOWN J. INT’L L. 1271, 1272–1319 (2016).

3. *Id.*

were some of our earliest, fundamental technologies to settled civilizations.⁴

Over the next 10,000 years, this continued within the context of monetary systems, including the evolution of paper money almost 2,000 years ago, or the advent of the telegraph a bit over 100 years ago.⁵ The advent of electronic transfers occurred around the same time.⁶ A real technological acceleration transpired from the late 1960s with the advent of the automated teller machine (“ATM”) and the hand-held calculator.⁷ The early 1970s saw the advent of Society of Worldwide Interbank Financial Telecommunications (“SWIFT”) and Fedwire.⁸ We can think of a massive project across the 1980s, 1990s, and 2000s of rolling out Real Time Gross Settlement (“RTGS”) systems around the world in major economies and increasingly developing countries.⁹ Over the last ten years, of course, we have seen the launch of Bitcoin (beginning in 2009), but also the launch of mobile payments such as mPesa as well as fast payment systems, such as eCFA in West Africa.¹⁰ Finally, we consider Alipay, WeChatPay, and the impact they have had across the People’s Republic of China (“China”) and beyond.¹¹

4. *Id.*

5. See GIANCARLO BARBIROLI, *THE DYNAMICS OF TECHNOLOGY: A METHODOLOGICAL FRAMEWORK FOR TECHNO-ECONOMIC ANALYSES* 58 (1997).

6. Arner, Barberis & Buckley, *supra* note 2.

7. See THOMAS LERNER, *MOBILE PAYMENT* 3 (2013).

8. See *SWIFT History*, SOCIETY OF WORLDWIDE INTERBANK FINANCIAL TELECOMMUNICATIONS, http://www.swift.com/about_swift/company_information/swift_history.

9. See Douglas W. Arner, János Barberis & Ross P. Buckley, *FinTech, RegTech, and the Reconceptualization of Financial Regulation*, 37 *NW. J. INT’L L. & BUS.* 371, 378 (2017) (citing PETER ALLSOPP, BRUCE SUMMERS & JOHN VEALE, *THE EVOLUTION OF REAL-TIME GROSS SETTLEMENT: ACCESS, LIQUIDITY AND CREDIT, AND PRICING* (2009)).

10. See generally Lynsey Chutel, *West African Now Has its Own Digital Currency*, *QZ* (Dec. 27, 2016), <https://qz.com/africa/872876/fintech-senegal-is-launched-the-ecfa-digital-currency/>.

11. Tim Alper, *Digital Yuan ‘Highly Likely’ to be Compatible with Alipay, WeChat Pay*, *CRYPTONEWS* (May 20, 2020), <https://cryptonews.com/news/digital-yuan-highly-likely-to-be-compatible-with-alipay-wech-6598.htm>.

244 CALIFORNIA WESTERN INTERNATIONAL LAW JOURNAL [Vol. 51

As stated earlier, when we think about money, finance, and technology, we think about co-developmental systems.¹² Over the past twenty years, we have experienced, and are today experiencing, a technological revolution in money and payments.¹³ When we think about finance and money, we must consider these developments in the context of the technological horizon of the time. For much of human history, we had coins, metal instruments, and different techniques of forging, stamping, and producing money. We also think about some Chinese experiments around a thousand years ago with paper money.¹⁴

However, if we think of much of the world's currencies today, they are high-tech polymer notes,¹⁵ embedding a wide range of different security features to basically deal with forgery. Moreover, we think of the world's currencies today from the standpoint of both centralized, as well as decentralized, systems.¹⁶ In terms of centralized systems, we think of RTGS, mobile money systems, and fast payment systems.¹⁷ At the same time, over the past decade we have witnessed a real evolution from the standpoint of decentralized systems, such as the advent of Bitcoin in 2009.¹⁸

If we consider Bitcoin—if we think about the ideas underpinning Bitcoin—the currency was to be a technological alternative, a trust-system based on technology, but also an alternative to state-based

12. Arner, Barberis & Buckley, *supra* note 2.

13. *Id.*

14. See generally Niv Noresh, *From Chengdu to Stockholm: A Comparative Study of the Emergence of Paper Money in East and West*, 4 PROVINCIAL CHINA 68 (2021), available at https://epress.lib.uts.edu.au/index.php/provincial_china/issue/view/Provincial%20China%2C%20Vol.%204%2C%20No.%201%20%282012%29.

15. See Constance Gustke, *Wrinkles Aside, Plastic Banknotes on the Rise*, BBC (Jan. 7, 2014), <https://www.bbc.com/worklife/article/20140108-where-money-is-made-of-plastic>.

16. RECONCEPTUALISING GLOBAL FINANCE AND ITS REGULATION (Ross P. Buckley, Emiliós Avgouleas & Douglas W. Arner eds. 2016).

17. Arner, Barberis & Buckley, *supra* note 2.

18. Anton N. Didenko et al., *After Libra, Digital Yuan and COVID-19: Central Bank Digital Currencies and the New World of Money and Payment Systems*, 18 (UNSW L. Res. Paper No. 59, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3622311.

currencies.¹⁹ This had particular appeal in the aftermath of the 2008 global financial crisis when we saw real concerns about traditional financial systems collapsing.²⁰ Concerns arose surrounding the role of finance—financialization in the economy—and questions about monetary stability, particularly around inflation.²¹ We saw this initial focus on Bitcoin from that direction. Nevertheless, if we think about the past decade, Bitcoin has not evolved into a challenger to major state-based currencies anywhere in the world, with certain exceptions.

Almost no one today would actually use Bitcoin to pay for things because of the volatility.²² It is much more of an investment asset, a speculative asset.²³ And so, what we have seen is central banks from about 2014 actually beginning to look at the underlying technology, blockchain.²⁴ How can we use blockchain to build better monetary and payment systems? From 2014 to 2019, central banks around the world began to look at blockchain and basically came to the conclusion that while the technology was very interesting and had tremendous potential, it was not any better from the standpoint of a central bank system.²⁵ Nor was using blockchain any better than a currency or an RTGS system, or other centralized electronic payment systems.

However, something changed in 2019. What changed was something that, from the standpoint of monetary history, is probably at the same level as the launch of Bitcoin—and that was the

19. *Id.* at 15–16.

20. See Douglas W. Arner & János Barberis, *Regulating FinTech Innovation: A Balancing Act*, ASIAN INST. INT’L FIN. L. (Apr. 1, 2015), <http://www.law.hku.hk/aiifl/regulating-fintech-innovation-a-balancing-act-1-april-1230-130-pm/>.

21. *Id.*

22. Charles Bovaird, *Bitcoin Volatility Reached a 10-Month High in February as Prices Hit Records*, FORBES (Mar. 3, 2021), <https://www.forbes.com/sites/cbovaird/2021/03/03/bitcoin-volatility-reached-a-10-month-high-in-february-as-prices-hit-records/?sh=52e92cba3dcd>.

23. Douglas W. Arner et al., *Digital Finance & The COVID-19 Crisis*, 18 (UNSW L. Res. Paper No. 2020/017, Apr. 16, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3558889.

24. Didenko, *supra* note 18, at 19–20.

25. *Id.* at 14 (explaining “. . . new technologies like . . . blockchain, while attracting the attention of most regulators, have not so far substantially disrupted the money and payments landscape.”).

246 CALIFORNIA WESTERN INTERNATIONAL LAW JOURNAL [Vol. 51

announcement of Facebook's proposal to create Libra.²⁶ Libra was to be the world's first "global stablecoin."²⁷

Libra is not exactly the antithesis of Bitcoin because Bitcoin was meant to be a response to state-issued currencies.²⁸ By contrast, Libra involves a giant tech company deciding to issue its own cryptocurrency to serve as the foundation of a global electronic payment system based on FacebookPay, WhatsAppPay as well as other available for use across a range of other payments platforms, including initially PayPal and MasterCard among others.²⁹ In fact, many of those involved had very idealistic objectives from the standpoint of building better global payment systems and supporting financial inclusion.³⁰

The big difference here was scale. The number of users Facebook has, globally, means if and when Libra/Diem launches, the cryptocurrency has the potential to grow very rapidly.³¹ In many ways, this means it could have the scale to challenge state issuance of currency in a way that, so far, Bitcoin and other crypto-currencies have not been able to do.³²

As a result, in 2019 we saw a major coordinated response from States. If we look at States' responses to crypto-currencies from 2009 to 2019, we see a range. For example, we see some states, China and others, implementing, essentially bans over time.³³ We see a number of other states, such as Japan, which has taken a more open or

26. See generally Dirk A. Zetsche, Ross P. Buckley & Douglas W. Arner, *Regulating LIBRA: The Transformative Potential of Facebook's Cryptocurrency and Possible Regulatory Responses* (Eur. Banking Inst. Working Paper Series, No. 2019/44, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3414401.

27. *Id.* at 14.

28. *Id.* at 3.

29. *Id.*

30. See The Diem Association, *Libra White Paper v2.0*, DIEM (Apr. 2020), <https://www.diem.com/en-us/white-paper/#introduction>.

31. De, *supra* note 1.

32. Zetsche, Buckley & Arner, *supra* note 26.

33. Iris H-Y Chiu, *Hegemony, Self-Regulation or Responsive Regulation: International Regulatory Competition in Crypto-Finance*, 24 CURRENTS: J. INT'L ECON. L. 3, 13 (2021).

facilitative approach.³⁴ We have seen others, like Switzerland, which has taken a very pro-aggressive approach to these technologies.³⁵ Therefore, we have seen a wide spectrum, in terms of different legal and regulatory responses.

In 2019, the response to Libra was quite different. We initially saw the Group of 7 industrialized countries (“G-7”), then the G-20, form a coordinated response amongst major economies to bring Libra into the formal regulatory system.³⁶ The difference between Libra when it was announced and Diem when it eventually launches, from the standpoint of major currencies, is that Diem will not be a competitor for major currencies. Why? Because it has essentially been subjugated to central banks and regulators in those major jurisdictions.

Interestingly, however, we also must ask why Libra was launched in the first place. It was launched to deal with challenges in cross-border payments and particular costs associated with remittances.³⁷ This was a problem for all crypto-currencies, including Bitcoin, Ripple, and XRP.³⁸ However, initially, no one quite believed this was what Facebook had in mind. Oddly enough, it is a company that does not have a great deal of trust. Therefore, Facebook’s portrayal of its objectives was seen with some scepticism.

Nevertheless, when it does launch, Diem may well have the greatest impact and attraction in the context of cross-border payments and remittances, where it will be most useful. Why? Because even though it has basically been brought under effective regulation and supervision from the standpoints of major economies, from the

34. Dirk A. Zetsche et al., *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*, 23 *FORDHAM J. CORP. & FIN. L.* 31, 56 (2017).

35. *Id.* at 71–72.

36. See Caroline Binham, Chris Giles & David Keohane, *Facebook’s Libra Currency Draws Instant Response from Regulators*, *FINANCIAL TIMES* (June 19, 2019), <https://www.ft.com/content/5535fb3a-91ea-11e9-b7ea-60e35ef678d2>; Huw Jones & Tom Wilson, *G20 Sets Ground Rules Ahead of Facebook’s Libra Stablecoin*, *REUTERS* (Apr. 14, 2020), <https://www.reuters.com/article/us-g20-regulator-stablecoins/g20-sets-ground-rules-ahead-of-facebooks-libra-stablecoin-idUSKCN21W0TU>.

37. Didenko et al., *supra* note 18, at 22.

38. See generally Colin Harper, *What Is XRP, and How Is it Related To Ripple?*, *COINDESK* (Dec. 22, 2020), <https://www.coindesk.com/what-is-ripple-what-is-xrp>.

248 CALIFORNIA WESTERN INTERNATIONAL LAW JOURNAL [Vol. 51

standpoint of developing and emerging economies, it is likely to present in many cases an attractive alternative.³⁹

Bringing these factors together, we see China's announcement of its Digital Currency / Electronic Payment ("DCEP") system in October 2019.⁴⁰ China had been considering possible uses of blockchain in the context of its monetary and payment systems since 2014.⁴¹ It is well-recognized that the launch of Libra dramatically accelerated that project.⁴² We can say that the launch of DCEP and the e-CNY in China is at least in part a response to potential competition from Western-based, private sector tech company alternatives such as Libra.⁴³ It of course is also part of a continual co-developmental evolutionary process between money, payment and technology.

It is also the reflection of the need of blockchain environments for effective and trustworthy monetary and payment instruments, a role which Bitcoin has so far not been able to play effectively. This underlies much of the development of stablecoins over the past six years with the advent of Tether, and the need, from the standpoint of traditional financial activities, to be able to imbed a monetary and payment instrument into blockchain-based systems.⁴⁴ So far, cryptocurrencies have not emerged, from the standpoint of the traditional financial sector, as an effective means to do this. If we think about

39. Zetzsche, Buckley & Arner, *supra* note 26.

40. QKLW, *It is likely for cities like Shenzhen and Suzhou to be the first implementation sites of DCEP*, QKLW (Dec. 15, 2019), <https://www.qklw.com/specialcolumn/20191215/41813.html>; see also Dirk A. Zetzsche et al., *Sovereign Digital Currencies: The Future of Money and Payments?* 5 (U. Hong Kong Faculty of L. Res. Paper No. 2020/053), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3714386 (noting China's DCEP project which set out to create a "Digital Yuan" made it the first major economy to launch a central bank digital currency).

41. Zetzsche et al., *supra* note 40, at 5–6.

42. *Id.*

43. See Helen Davidson, *China Starts Major Trial of State-run Digital Currency*, GUARDIAN (Apr. 28, 2020), <https://www.theguardian.com/world/2020/apr/28/china-starts-major-trial-of-state-run-digital-currency>; see also Nathaniel Popper & Cao Li, *China Charges Ahead with a National Digital Currency*, N.Y. TIMES (Mar. 1, 2021), <https://www.nytimes.com/2021/03/01/technology/china-national-digital-currency.html>.

44. Didenko, *supra* note 18, at 18–19.

crypto-currencies, for them to succeed at the maximum level, they actually need to be brought into the traditional financial services system to enable traditional institutional investors, financial institutions, etc., to engage. However, you then have conflict between the original underlying idea and the reality of commercial success. Ultimately, this is what we have seen going back and forth during the past ten years.

If we look at DCEPs in China, one objective of DCEP is to provide a state-based monetary instrument to embed into blockchain systems. This is significant because blockchain development is a national strategic priority.⁴⁵

We can thus see that by the end of 2019, Bitcoin, Libra and DCEP all came together to dramatically increase interest in CBDCs across the world. The Bank for International Settlements (“BIS”) released a survey right at the beginning of 2020, which showed a dramatic increase in central bank interest in issuing their own digital assets⁴⁶—their own digital monetary instruments, which is what we call central bank digital currencies or sovereign digital currencies.

Then COVID hit. Amongst other things, COVID had a dramatic impact on digitization.⁴⁷ That impact on digitization was nowhere bigger than in the context of digital payments as well as digital finance more generally if we just want to think about the example of Robinhood,⁴⁸ of GameStop,⁴⁹ and one could even say from the standpoint of Bitcoin prices. That combination of increasingly simple trading and access, combined with large amounts of liquidity starting from March 2020, has led to general asset pricing inflation just about everywhere. Consequently, in 2020 with COVID-19, we saw a

45. James Cooper, *Central Bank Digital Currencies: Focus on the Digital Currency/Electronic Payment Initiative of the People’s Republic of China*, UNITIZE (June 28, 2020), <https://unitize.online/central-bank-digital-currencies>.

46. *Id.*

47. *See generally* Arner et al., *supra* note 23.

48. *See* Sebastian Sinclair, *Robinhood to Allow Deposits, Withdrawals for Cryptos Including Dogecoin*, COINDESK (Feb. 18, 2021), <https://www.coindesk.com/robinhood-crypto-withdrawals-deposits> (explaining Robinhood as an online brokerage app).

49. *See generally* Paul Vigna, *GameStop and Bitcoin Renewed a Push to Digitize the Stock Market*, WALL STREET J. (Apr. 8, 2021), <https://www.wsj.com/articles/gamestop-and-bitcoin-renewed-a-push-to-digitize-the-stock-market-11617886852>.

250 CALIFORNIA WESTERN INTERNATIONAL LAW JOURNAL [Vol. 51]

dramatic increase in electronic payments. Governments everywhere realized—including the United States—that mailing checks to people (particularly people without bank accounts) is completely useless from the standpoint of actually getting financial resources to individuals and small businesses quickly. Thereafter, a dramatic acceleration took place in looking at mechanisms of how digital payments can be used by governments to deliver money where it is most needed in the context of COVID.⁵⁰ For example, in 2019, in the context of the original legislation, we saw proposals for the digital dollar⁵¹: the opportunities for potentially using a variety of electronic payment instruments to get more resources to people more quickly.

We have also seen an increasing number of pilot test of DCEP across China, as well as the launch of new CBDCs in the Bahamas and Cambodia.⁵² Looking at the BIS survey from January 2021, there has been a pretty dramatic increase in central banks everywhere looking seriously at rolling out systems.⁵³ Therefore, we once again see finance and technology as co-developmental. We have seen this for a very long period of time, with a dramatic acceleration over the past twenty years with both centralized and decentralized systems. We can see this in the context of RTGS. We can see this in the context of Bitcoin. We can see this in the context of blockchain.

Two things dramatically accelerated the process: first, the announcement by Facebook of Libra in 2019, and second, dramatically accelerating efforts by central banks to develop their own digital currencies. In essence, to compound the ongoing evolution and competition, COVID-19 added necessity.⁵⁴

What we are seeing is that China is likely to be the first major economy to launch a CBDC.⁵⁵ This is driving as well as the other factors highlighted are driving other major economies to consider their own CBDCs, in particular the EU and the US. If we look at the

50. Arner et al., *supra* note 23.

51. Didenko et al., *supra* note 18, at 40; *see also* James Cooper & Mark Blackman, *This Unstable Moment Is a Chance for Crypto to Go Mainstream*, COINDESK (Mar. 25, 2020), <https://www.coindesk.com/this-unstable-moment-is-a-chance-for-crypto-to-go-mainstream>.

52. Didenko et al., *supra* note 18, at 28.

53. *Id.* at 40.

54. Arner et al., *supra* note 23.

55. Popper & Li, *supra* note 40.

2021]

THE EMPIRE STRIKES BACK?

251

underlying rationales between the digital Euro and China's e-CNY, they are very similar, particularly when we begin to think about providing alternatives to the existing dollar based monetary and payment system.

In conclusion, what do we expect from the standpoint of regulation? The first is continuing developments by central banks. Launching central bank digital currencies means everyone else in the rest of the world is going to have to come to terms with those and, as a result, every country in the world is looking at the major currencies and their evolving CBDCs, but also at their own systems. From the standpoint of others, it is dealing with private sector systems, from a regulatory standpoint, and from the possibility of currency substitution, in developing and emerging economies.

From the standpoint of crypto more broadly, in 2021 a process of largely normalization may occur with the launch of the markets in crypto-assets regulation draft last year in the European Union. We are going to see a similar trend in the United States.⁵⁶ A range of efforts will occur to bring crypto-currencies into the traditional regulatory system and into the traditional financial system. Most likely, central bank digital currencies like the e-CNY and those we are likely to see in the United States, will be public-private partnership systems, and what you would call synthetic central bank digital currencies. The reality is that across the 2020s, these formerly parallel and separate systems are going to be increasingly intermeshed both on the non-state and state level.

56. See, e.g., The Digital Dollar Project, <https://www.digitaldollarproject.org> (proposing a CBDC strategy in the United States).